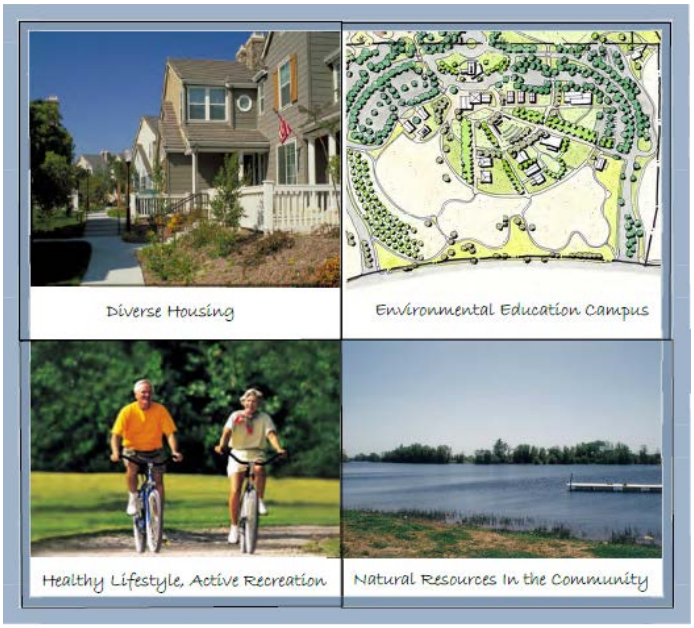
FINAL ENVIRONMENTAL IMPACT REPORT

MATHER SOUTH COMMUNITY MASTER PLAN PROJECT



Control Number: PLNP2013-00065
State Clearinghouse Number: #2014062087
January 2020

COUNTY OF SACRAMENTO
OFFICE OF PLANNING AND
ENVIRONMENTAL REVIEW
827 7TH STREET, ROOM 225
SACRAMENTO, CALIFORNIA 95814

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This Environmental Impact Report has been prepared pursuant to the California Environmental Quality Act of 1970 (Public Resources Code Division 13). An Environmental Impact Report is an informational document which, when this Department requires its preparation shall be considered by every public agency prior to its approval or disapproval of a project. The purpose of an Environmental Impact Report is to provide public agencies with detailed information about the effect that a proposed project is likely to have on the environment; to list ways in which any adverse effects of such a project might be minimized; and to suggest alternatives to such a project.

Prepared by the
COUNTY OF SACRAMENTO
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PREFACE

The Sacramento County Board of Supervisors adopted the 2030 General Plan on November 9, 2011. The County adopted the Phase 1 Climate Action Plan concurrently with the adoption of the 2030 General Plan, and the General Plan Update EIR included the 2020 greenhouse gas emissions significance thresholds. The 2020 significance thresholds were adopted for general use through certification of the General Plan Update FEIR. The Phase 1 CAP is a strategy and framework document. The County adopted the Phase 2A CAP (Government Operations) on September 11, 2012. The Communitywide CAP (Phase 2B) has been in progress for some time (https://planning.saccounty.net/PlansandProjectsIn-Progress/Pages/CAP.aspx) but is currently on hold pending in-depth review of CAP-related litigation in other jurisdictions. The commitment to a Communitywide CAP is identified in General Plan Policy LU-115 and associated Implementation Measures F through J on page 117 of the General Plan Land Use Element. This commitment was made in part due to the County's General Plan Update process and potential expansion of the Urban Policy Area to accommodate new growth areas. General Plan Policies LU-119 and LU-120 were developed with SACOG to be consistent with smart growth policies in the SACOG Blueprint, which are intended to reduce VMT and GHG emissions. The Mather South project is located inside the existing Urban Policy Area. Nevertheless, Sacramento County has applied a consistent methodology for climate change impact analysis across the entire Jackson Highway corridor planning area for the four proposed individual master plans.

As allowed under CEQA Guidelines Section 15183.5(b), lead agencies may choose to analyze and mitigate significant greenhouse gas emissions in a plan for the reduction of greenhouse gas emissions or similar document. The analysis contained in this EIR is based on the project-specific Greenhouse Gas Reduction Plan prepared for the project consistent with CEQA Guidelines Sections 15183.5(b) and 15064.

On May 21, 2013, the County Board of Supervisors initiated the Master Plan process for the Mather South Community Master Plan project. At that time, the South Sacramento Habitat Conservation Plan (SSHCP) was still in administrative draft form and was not publicly available for review. The County was also engaged in a parallel federal permitting process for Mather Field at the same time. The Mather South land use plan was developed based on the anticipated Mather Preserve boundaries to the west of the project. On June 27, 2014, the County released the Notice of Preparation for the MSCMP Environmental Impact Report (EIR).

On January 5, 2017, the County released a Revised Notice of Preparation for the MSCMP EIR due to substantial changes in the Project's land use plan as a result of a collaborative stakeholder process with the Mather Stakeholder Group.

The Draft Environmental Impact Report (DEIR) was released on January 8, 2019 and had a 45-day public review period that closed on February 21, 2019. A total of 22 individual letters were received during the written comment period. Public hearings on the Project were held by the Vineyard Community Planning Advisory Council on February 5, 2019 and by the Cordova Community Planning Advisory Council on February 21, 2019. A public hearing on the Draft EIR was held by the County Planning Commission on February 25, 2019. After receiving oral comments, the Commission closed the comment period on the MSCMP Draft EIR and directed staff to prepare the Final EIR.

The South Sacramento Habitat Conservation Plan was adopted in late 2018. The Mather Preserve is identified as a component of the hard-line preserve strategy in the SSHCP. Therefore, the SSHCP's Avoidance and Minimization Measures are applicable to certain activities adjacent to the Mather Preserve.

At the time the Draft EIR was published, the Jackson Highway Corridor Transportation Mitigation Strategy was in draft form, and the Draft EIR included the best available information at the time. Following the Planning Commission's hearing on the Draft EIR, the Transportation Mitigation Strategy was finalized, presented to the Cordova and Vineyard CPACs, the Planning Commission, and the Board of Supervisors. The Board of Supervisors approved the Transportation Mitigation Strategy during a public meeting on July 23, 2019.

Section 15088.5 of the CEQA Guidelines describes the circumstances in which recirculation of a Draft EIR is required:

> 15088.5. RECIRCULATION OF AN EIR PRIOR TO CERTIFICATION
> (a) A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification. As used in this section, the term "information" can include changes in the project or environmental setting as well as additional data or other information. New information added to an EIR is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. "Significant new information" requiring recirculation includes, for example, a disclosure showing that:
>
> > (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
> >
> > (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.

(3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it.

(4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded. (Mountain Lion Coalition v. Fish and Game Com. (1989) 214 Cal.App.3d 1043)

(b) Recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR.

This Final EIR contains revisions to the text and mitigation measures to reflect the final Jackson Highway Corridor Transportation Mitigation Strategy, the current status of the SSHCP, and other minor revisions in response to the comments on the Draft EIR. These revisions do not constitute new information that is "significant" as defined in CEQA Guidelines Section 15088.5. Based on the number and scope of public comments received and the public hearings conducted at the Vineyard CPAC, Cordova CPAC, and County Planning Commission, it is clear that meaningful opportunities have been provided for the public to comment upon the substantial adverse environmental effects of the project or feasible ways to mitigate or avoid such an effect. Furthermore, the Project Proponents have not declined to implement the feasible mitigation measures included in this Final EIR. None of the triggers requiring recirculation identified in CEQA Guidelines Section 15088.5 have been met.

ES - EXECUTIVE SUMMARY

This environmental impact report (EIR) describes the potential environmental impacts of developing the Mather South Project. The purpose of an EIR is to evaluate the project's effects on environmental resources, both singularly and in a cumulative context, to examine alternatives to the project as proposed, and identify mitigation measures to reduce or avoid potentially significant effects. This document has been prepared in compliance with the California Environmental Quality Act (CEQA; Sections 21000-21189 of the Public Resources Code [PRC]) and the State CEQA Guidelines (Title 14, Sections 15000-15387 of the California Code of Regulations).

SUMMARY OF THE PROPOSED PROJECT

The Mather South Project is located along the Jackson Road corridor in the Cordova community of Sacramento County. It is approximately 10 miles east of downtown Sacramento and would result in up to 3,522 residential dwelling units of various densities (multi-family, detached, and attached single-family), a 28-acre environmental education campus including 200 multi-family dwelling units, a 21-acre research and development park, two elementary schools, a 6-acre community center, 21 acres of commercial-retail with up to 225,000 square feet (sf) of retail space, 44 acres of parkland including 26 acres of neighborhood parks and a 17-acre community park, and 157 acres of open space areas that include natural preserves and drainage corridors, stormwater quality and detention basins, landscape buffers, and public utility corridors all connected by multi-use pedestrian and bicycle trails.

The project would convert 848-acres of vernal pool grassland to mixed-use residential, commercial, and educational development, and set aside 53-acres as a part of the Mather Preserve. The project includes requests to change the General Plan to accommodate the proposed land uses, adopt the Mather South Community Master Plan, and modify the Mather Field Special Planning Area Ordinance to incorporate design guidelines and development standards. The project is described in detail in Chapter 1, Project Description, of this EIR.

LEAD AND RESPONSIBLE AGENCIES

The lead agency is the public agency with the principal responsibility for carrying out or disapproving a project. The lead agency is also responsible for scoping the environmental analysis, preparing the EIR, and responding to comments received on the Draft EIR. Prior to deciding to approve a project, the lead agency is required to certify that the EIR has been completed in compliance with CEQA, that the decision-making body reviewed and considered the information in the EIR, and that the EIR reflects its independent judgment. Sacramento County is the lead agency for the evaluation of the Mather South Project.

Responsible agencies are public agencies that have discretionary approval power over the project. Based on the potential effects known at this time, responsible agencies may include (but may not be limited to) U.S. Army Corps of Engineers (USACE), U.S. Fish & Wildlife Service (USFWS), California Department of Fish & Wildlife (CDFW), the California Regional Water Quality Control Board, West Coast Gas Company, Sacramento Municipal Utility District (SMUD), Sacramento County Water Authority (SCWA), Cordova Recreation and Park District, and the Elk Grove Unified School District (EGUSD).

FEATURES OF THE FINAL EIR

PURPOSE OF THE FINAL EIR

In accordance with CEQA, public agencies must prepare an EIR to evaluate the potential consequences of development and operation of projects that could significantly affect the environment. The EIR process is specifically designed to objectively evaluate and disclose potentially significant direct, indirect, and cumulative impacts of a project; to identify alternatives that reduce or eliminate a project's significant effects; and to identify feasible measures that mitigate significant environmental effects. In addition, CEQA requires that an EIR identify those adverse impacts that remain significant after mitigation. The purpose of an EIR is not to recommend approval or denial of a project, but to provide decision-makers, public agencies, and the general public with information about the project.

TYPE OF EIR

This document is a Project EIR. As described in Section 15161 of the CEQA Guidelines, this type of EIR is used to evaluate the physical changes that would result from all phases (including planning, construction, and operation) of a project.

SCOPE OF THE FINAL EIR

Pursuant to CEQA and the State CEQA Guidelines, a lead agency shall focus the EIR's discussion on significant environmental effects and may limit discussion of other effects to brief explanations about why they are not significant (PRC Section 21002.1, State CEQA Guidelines Section 15143). Furthermore, the EIR must also discuss the way significant impacts can be feasibly mitigated or avoided.

This EIR addresses the following technical issue areas:

- Aesthetics
- Air Quality
- Airport Compatibility
- Biological Resources
- Climate Change
- Cultural Resources

- Energy
- Geology and Soils
- Hazardous Materials
- Hydrology and Water Quality
- Land Use
- Noise
- Public Services
- Public Utilities
- Traffic and Circulation
- Water Supply

ORGANIZATION OF THE FINAL EIR

The remainder of this document includes a detailed description of the project, analysis of potential environmental impacts that could result from project implementation, discussion of cumulative and growth-inducing impacts, and evaluation of potential alternatives to the project. This information is organized as detailed below.

Chapter 1: Describes the location of the project, project background, existing conditions on the project site, and the nature and location of specific elements of the project.

Chapter 2: Describes feasible alternatives to the project, including the no project alternative, describing the consequences of taking no action.

Chapters 3 through 18: Includes a topic-by-topic analysis of impacts that would or could result from project implementation. Each chapter includes a discussion of the environmental and regulatory setting, impact analysis, and mitigation measures.

Chapter 19: Provides an overview of the environmental evaluation, including impact conclusions and recommended mitigation measures. This chapter also includes a discussion of cumulative impacts and growth inducement.

Chapter 20: Lists all resources used to prepare the EIR.

Chapter 21: Provides definitions for acronyms and abbreviations used throughout the draft EIR.

Chapter 22: Identifies preparers of the EIR.

Chapter 23: Provides excerpts from comments received on the Draft EIR and the County's responses to those comments.

The Appendices contain several reference items providing support and documentation of the analyses performed for this report.

IMPACT AND MITIGATION SUMMARY TABLE

The following environmental impact and mitigation summary table briefly describes the project impacts and the mitigation measures recommended to eliminate or reduce the impacts. The residual impact after mitigation is also identified. Immediately following the summary table is a list of recommendations/requirements of various agencies pertaining to the project, and a description of mandated mitigation monitoring requirements. Detailed discussions of each of the identified impacts and mitigation measures, including pertinent support data, can be found in the specific topic chapters in the remainder of this report.

Table ES-1: Executive Summary of Impacts and Mitigation

Impacts	Level of Significance Before Mitigation [1]	Mitigation Measure	Level of Significance After Mitigation
Aesthetics			
IMPACT: DEGRADATION OF EXISTING VIEW AND VISUAL QUALITY The project would result in conversion of grassland to urban development and would result in permanent alteration of views and visual quality of the Plan Area and surroundings.	PS	No feasible mitigation.	SU
IMPACT: NEW SOURCES OF LIGHT OR GLARE The project would result in new sources of lighting such as porch lights, parking lot lights, street lights, and similar safety lighting with the type and intensity of lighting consistent with suburban residential neighborhoods. When viewed from more distant areas, the lighting associated with the residential development could increase skyglow in the area because the existing project site is currently dark.	PS	AE-1. The Community Master Plan shall be amended to require all lighting applications to use fixtures approved by the International Dark Sky Association.	LTS
Air Quality			
IMPACT: CONSTRUCTION EMISSIONS OF CRITERIA AIR POLLUTANTS AND PRECURSORS (NO_X, ROG, PM_{10}, AND $PM_{2.5}$) The project would result in construction emissions from site preparation (e.g., excavation, clearing), off-road equipment, material delivery, and worker commute trips, and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings), and fugitive dust emissions of PM_{10} and $PM_{2.5}$ associated primarily with site	PS	AQ-1. Construction exhaust and fugitive dust emissions controls. All individual public and private subsequent projects within the project area shall implement SMAQMD's Basic Construction Emission Control Practices and SMAQMD's Enhanced Exhaust Control Practices during any construction or ground disturbance activities to reduce construction-related fugitive dust emissions, diesel PM, and NO_X emissions. Measures include**:** BASIC CONSTRUCTION ~~FUGITIVE DUST~~ EMISSIONS CONTROL PRACTICES **(BEST MANAGEMENT PRACTICES)** and ENHANCED EXHAUST CONTROL	LTS

[1] PS = Potentially Significant S = Significant SU = Significant and Unavoidable LS = Less Than Significant

preparation.		PRACTICES **and OFF-SITE CONSTRUCTION MITIGATION FEES**. Full text provided in Chapter 4, Air Quality.	
IMPACT: LONG-TERM OPERATIONAL EMISSIONS OF NO_X, ROG, PM_{10}, AND $PM_{2.5}$ Development of the Mather South Project would result in the generation of long-term operational emissions of ROG, NO_X, and particulate matter (PM_{10} and $PM_{2.5}$) because of mobile, stationary, and area-wide sources. Mobile-source emissions of criteria air pollutants and precursors would result from vehicle trips generated by residents, users of the parks, students at the schools, employee commute trips, and other associated vehicle trips (e.g., delivery of supplies, maintenance vehicles for commercial and retail land uses). Stationary and area-wide sources would include the combustion of natural gas for space and water heating (i.e., energy use), the use of landscaping equipment and other small equipment, the periodic application of architectural coatings, and ROG from the use of consumer products.	PS	AQ-2. Implement provisions of the Air Quality Mitigation Plan to reduce operational emissions. Implementation of the following measures requires compliance with the project's AQMP, which would reduce the project's mobile-source operational ozone precursors by 15 percent in comparison to the unmitigated project. **The Mather South Community Master Plan shall include the following reduction measures, which are detailed within the AQMP (Appendix AQ-2 of the EIR), as conditions of approval:** • **Incorporate traffic calming measures.** • **Design project roads to reduce motor vehicle speed through the use of on street parking, planter strips, rumble strips, and other available methods.** • **Reduce speeds at project intersections by including marked intersections, count-down signal timers, median islands, curb extensions, traffic circles, and other available methods.** • **Implement neighborhood electric vehicle (NEV) network.** • **Create a local "light" vehicle network with necessary infrastructure such as NEV parking, charging facilities, striping, signage, and educational tools.** AQ-3. Implement Mitigation Measure CC-2. The project developer shall incorporate the following mitigation measures into the project to reduce operational emissions of criteria air pollutants and precursors to the extent feasible. Measures include TRANSPORTATION and BUILDING ENERGY mitigation. Full text provided in Chapter 4, Air Quality.	SU

IMPACT: MOBILE-SOURCE CO CONCENTRATIONS Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels at nearby sensitive land uses, such as residential units, hospitals, schools, and childcare facilities. The Mather South Project would generate a maximum of 2,715 trips during the a.m. peak hour and up to 2,640 during the p.m. peak hour. The total daily trip generation of the project is 29,134, which is below the criteria for a single intersection. None of the intersections would be anticipated to accommodate traffic volumes that would exceed 31,600 vehicles per hour, even assuming all trips occurred at the same intersection.	LTS	No mitigation required	N/A
IMPACT: EXPOSURE OF SENSITIVE RECEPTORS TO TACs Construction-related activities would result in temporary, intermittent emissions of diesel PM from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., demolition, clearing, grading); paving; application of architectural coatings; on-road truck travel; and other miscellaneous activities. For construction activity, diesel PM is the primary TAC of concern. However, considering the relatively low mass of diesel PM emissions that would be generated by construction, the relatively short duration of diesel PM-emitting construction activity at any one location of the plan area, the distance to the nearest off-site sensitive receptors, and the highly dispersive properties of diesel PM, construction-related TAC emissions would not expose sensitive receptors to an incremental increase in cancer risk greater than 10 in 1 million or a hazard index greater than 1.0. Operation of some land uses developed under the Mather South Project would result in new sources of TACs associated with new vehicular trips on existing and new roadways, as well as new sources of diesel PM associated with commercial loading docks visited by diesel-powered delivery trucks and	PS	AQ-4. Incorporation of design features for retail center to address TACs. To reduce exposure of existing or future receptors to diesel PM exhaust emissions at commercial and educational loading docks, the following design measures shall be incorporated into the MSCMP. • Proposed commercial and educational, land uses that have the potential to emit TACs or host TAC-generating activity (e.g., loading docks) shall be located as far away from existing and proposed on-site sensitive receptors as possible such that they do not expose sensitive receptors to TAC emissions that exceed an incremental increase of 10 in 1 million for the cancer risk and/or a noncarcinogenic Hazard Index of 1.0. • Loading dock design may incorporate the use of buildings or walls to shield commercial activity from nearby residences or other sensitive land uses. • Signs shall be posted at all loading docks and truck loading areas which indicate that diesel-powered delivery trucks must be shut off when not in use for longer than 5	LTS

backup diesel generators. New TAC sources could expose existing and future sensitive receptors to TAC emissions. The project would also locate new sensitive land uses in proximity to existing TAC sources associated with surrounding roadways. Traffic volumes of Sunset Boulevard do not exceed 100,000 vehicles per day, thus new sensitive receptors because of the project would not be exposed to excessive health risk from Sunset Boulevard. No other roadways in the project vicinity experience volumes that exceed 100,000 vehicles per day. However, the placement of new sources of diesel PM associated with commercial delivery trucks could expose new or existing sensitive receptors to increased TAC emissions.		minutes on the premises to reduce idling emissions. • Sensitive receptors, such as residential units and daycare centers, shall not be located in the same building as dry-cleaning operations that use perchloroethylene. Dry-cleaning operations that use perchloroethylene shall not be located within 300 feet of any sensitive receptor. A setback of 500 feet shall be provided for operations with two or more machines.	
IMPACT: EXPOSURE OF SENSITIVE RECEPTORS TO ODORS Minor odors from the use of heavy-duty diesel equipment and the laying of asphalt during project construction activities would be intermittent and temporary and would dissipate rapidly from the source with an increase in distance.	PS	AQ-5. Incorporation of design features for retail establishments to address potential odor sources. The project developer shall implement the following measures to reduce exposure of sensitive receptors to odorous emissions. These measures shall be incorporated into the Mather South Community Master Plan Design Guidelines. • Land uses have that the potential to emit objectionable odorous emissions (e.g., dry cleaning establishments and gasoline stations) shall be located as far away as possible from existing and proposed sensitive receptors or downwind of nearby receptors. • If an odor-emitting facility is to occupy a retail space, odor control devices shall be installed to reduce the exposure of receptors to objectionable odorous emissions. SMAQMD shall be consulted to determine applicable/feasible control devices to be installed. Use of setbacks, site design considerations, and emission controls are typically sufficient to ensure that receptors located near retail uses would not be exposed to odorous emissions on a frequent basis.	LTS
Airport Compatibility			
IMPACT: SAFETY HAZARD TO PEOPLE LIVING AND WORKING IN THE VICINITY OF AN AIRPORT/AIRSTRIP	PS	AC-1. In accordance with the Mather Field Project Development Standards, the project would be required to be reviewed by the Airport Land Use Commission prior to	LTS

Approximately 18 percent of the Mather South Plan Area is within the Overflight Zone. The Mather South Community Master Plan proposed land uses within the Overflight Zone include drainage basins, open space drainage, parks, a public use (water tank), a community center, and residential uses with densities varying from 5 to 10 dwelling units per an acre. No restricted uses are proposed within the Overflight Zone.		approval or issuance of building permits to ensure that it is compatible with the Mather Airport safety zones. AC-2. Development applications that result from the Mather South Project that are located within Mather Airport safety zones shall be reviewed by the Airport Land Use Commission prior to approval or issuance of building permits in order to ensure that proposed projects are compatible with the safety zones.	
IMPACT: EXPOSURE TO EXCESSIVE NOISE LEVELS ASSOCIATED WITH AIRPORT OPERATIONS The Mather South Plan Area is approximately one mile from the Mather Airport and would be subjected to noise generated from existing and projected future airport operations. The entire Plan Area is within the Mather APPA, which requires a condition be placed on all residential development outside of the 60 CNEL noise contour but within the APPA to include noise insulation that reduces interior noise levels to 45 dB CNEL or less.	PS	AC-3. Development related to the Mather South Project shall comply with the uses and standards included in Table 4: Land Use Compatibility for Airport Noise found within the Noise Element of the Sacramento County General Plan prior to approval or issuance of building permits.	LTS
IMPACT: EFFECTS ON SAFE AND EFFICIENT USE OF NAVIGABLE AIRSPACE The CLUP includes height standards for buildings surrounding the airport and are most restrictive adjacent to the runway and become less restrictive further away. Navigable airspace could be adversely affected if building heights in the Mather South Plan Area exceed these designated height standards. Buildings within the Plan Area would need to be less than 74.5 feet tall.	LTS	No Mitigation Required	N/A
Biological Resources			
IMPACT: LOSS OF VERNAL POOL SPECIES Vernal pool tadpole shrimp, a species listed as endangered under ESA, is known to occur in the Plan Area. Three other special-status vernal pool invertebrate species, vernal pool fairy shrimp, midvalley fairy shrimp, and Ricksecker's scavenger beetle, have high potential to occur in the Plan Area because suitable habitat is present, and they have been documented within the Mather Field Specific Plan area, west of the Plan	PS	BR-1. Open Space Preserve and Open Space Drain Conservation Easements Before issuance of grading permits, approval of improvement plans, or building permits, whichever occurs first, the Open Space Mather Preserve~~,~~ **and** Nature Preserve~~, and Open Space Drain~~ land use areas identified on the proposed land use plan shall be placed within a permanent conservation easement granted to a registered	LTS

Area. All the designated critical habitat is outside of the Plan Area and the project would not adversely modify this critical habitat, however, the project would result in the loss of 14.53 acres of vernal pool areas. Additional indirect impacts could occur as a result of changes in hydrology and water quality in the Plan Area.		501 (c)(3) conservation organization and incorporated into the existing Mather Preserve network as approved by the County, USACE, and USFWS. (refer to Ch. 6 Biological Resources for full text of mitigation measure). BR-1a. Prepare a Hardpan Restoration Plan. Prior to the start of construction activity for the sewer trunk line **and the water transmission main line** (within Zinfandel Drive), a hardpan restoration plan shall be developed by a qualified hydrogeologist and geotechnical expert and implemented for sewer trunk line **and water transmission mail line** construction adjacent to the Mather Preserve. The detailed plan shall include identification and documentation of the hardpan depths during excavation of the sewer **and water line** trench, and appropriate backfill material to restore the hardpan functionality. The detailed hardpan restoration plan shall be included in the construction specifications for the proposed sewer trunk line. BR-2. Compensate for Loss of Vernal Pool Invertebrate Habitat and Take of Federally Listed Vernal Pool Invertebrates Before any groundbreaking activity within 250 feet (or lesser distance deemed sufficiently protective through site-specific watershed analysis with approval from USFWS) of vernal pool invertebrate habitat, project applicants for each distinct project phase shall purchase habitat creation credits at a USACE and USFWS approved mitigation bank, record a conservation easement over lands that include created/restored/rehabilitated vernal pool habitat and implement a final preserve management plan approved by the County, USACE, and USFWS, and or restore vernal pool habitat within the designated preserve areas, upon USFWS approval, to fully compensate for the project's direct and indirect impacts to habitat for federally listed vernal pool species. (Refer to Ch. 6 Biological Resources for full text of mitigation measure) BR-3. Secure Take Authorization for Federally Listed	

		Vernal Pool Invertebrates and Implement All Conditions in the Biological Opinion Before any groundbreaking activity within 250 feet (or lesser distance deemed sufficiently protective through site-specific watershed analysis with approval from USFWS) of vernal pool invertebrate habitat, project applicants for each distinct project phase shall secure take authorization from USFWS through ESA section 7 consultation between USACE and USFWS as part of the CWA Section 404 permit process. (Refer to Ch. 6 Biological Resources for full text of mitigation measure) BR-4. Implement Worker Environmental Awareness Program Project applicants shall retain a qualified biologist to conduct a worker environmental awareness program (WEAP) for construction crews before each phase of project construction. (Refer to Ch. 6 Biological Resources for full text of mitigation measure) BR-5. Protect Habitat in Preserve Areas and Avoided Habitats During Construction Avoided and protected habitat in the Mather Preserve, Nature Preserves, and Open Space Drain areas shall be protected during construction activities through implementation of the following measures: • A biological monitor approved by USFWS and CDFW shall be onsite during construction within 250 feet of vernal pool invertebrate habitat to be preserved to ensure no unauthorized take of listed species or destruction of habitat to be preserved occurs. The biologist shall have the authority to stop any activities that may result in such take or destruction until appropriate corrective measures have been completed. The biologist also shall be required to report immediately any unauthorized impacts to the USFWS or CDFW, as appropriate depending on agency jurisdiction over the affected resource.	

		• The project applicant shall install fencing, stakes/flagging, or other appropriate barrier between the active construction work area and adjacent sensitive biological resource areas outside the work area, including in the Mather Preserve area and any sensitive resources that are to be retained onsite, to prevent inadvertent encroachment into these sensitive areas. The location of barrier installation shall be directed by the onsite biological monitor.	
IMPACT: SPECIAL STATUS PLANTS **Seven** ~~Five~~ special-status plant species are known or have potential to occur in the Mather South Plan Area: slender orcutt grass, Sacramento orcutt grass, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, **dwarf downingia, pincushion navarretia** and legenere. Slender orcutt grass and Sacramento Orcutt grass (vernal pool grasses) are formally protected under ESA and CESA. Protocol level botanical surveys were last conducted in the Plan Area from July through September 2002 and from April to June 2003, however, because of the age of the surveys they cannot be used to make an absence determination for special-status plants.	PS	BR-6. Implement Mitigation Measures BR-1 through BR-5 BR-7. Conduct Floristic Surveys and Compensate for Loss of Special-Status Plants The County shall require project applicants, as a condition of project approval, before any groundbreaking activity within 250 feet of vernal pools, swales, and seasonal wetlands, to retain a qualified biologist familiar with the vernal pool flora of the region to conduct floristic surveys of wetland habitats **on the entire Mather South project site** with potential to support slender orcutt grass, Sacramento orcutt grass, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, **dwarf downingia, pincushion navarretia** and legenere. (Refer to Ch. 6 Biological Resources for full text of mitigation measure)	LTS
IMPACT: LOSS OF WESTERN SPADEFOOT HABITAT Western spadefoot has been previously documented in an onsite vernal pool and vernal pools, seasonal wetlands, and vernal swales throughout the Plan Area represent potentially suitable breeding habitat for this species. Project implementation would result in permanent removal of approximately 13.93 acres of suitable breeding habitat and approximately 691 acres of upland habitat for western spadefoot, which could result in direct take of western spadefoot and would result in loss of habitat for this species. In addition to the direct removal of habitat, implementing the project could result in indirect impacts on western spadefoot, including mortality related to an increase in vehicular traffic, mortality from landscaping maintenance activities including	PS	BR-8. Implement Mitigation Measures BR-1 through BR-5 BR-9. Minimize Take of Western Spadefoot As a condition of project approval and before ground disturbing activities, the County shall require future project proponents to retain a qualified biologist to conduct surveys for western spadefoot in areas of potential habitat that would be eliminated by the project. (Refer to Ch. 6 Biological Resources for full text of mitigation measure)	LTS

mowing, raking, weed whacking, noise and vibration disturbance causing toads to break dormancy, and exposure to herbicides, pesticides, and other toxins.			
IMPACT: LOSS OF VALLEY ELDERBERRY LONGHORN BEETLE HABITAT Elderberry shrubs have been identified in the Plan Area during previous surveys, but extensive mapping has not been conducted. Therefore, the extent of elderberry is not known. Project development would result in removal of all, or nearly all, elderberry shrubs existing in the Plan Area and these shrubs could contain larvae of valley elderberry longhorn beetle. Indirect impacts from ground-disturbing activities or use of herbicides near shrubs could also result if the health of elderberry shrubs containing valley elderberry longhorn beetle larvae is adversely affected.	PS	BR-10. Compensate for Loss of Valley Elderberry Longhorn Beetle Habitat • As a condition of project approval, a qualified biologist shall determine whether future project sites contain valley elderberry longhorn beetle habitat (i.e., elderberry shrubs). If so, a preconstruction survey shall be conducted by a qualified biologist within 165 feet of project disturbance areas before any construction activity. The surveys shall be conducted according to the protocol outlined in USFWS Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle (USFWS 2017b) (Framework). (Refer to Ch. 6 Biological Resources for full text of mitigation measure)	LTS
IMPACT: LOSS OF WESTERN POND TURTLE No suitable aquatic habitat is present in the Plan Area for western pond turtle, but the species has been documented at Mather Lake and there is potential for western pond turtle to nest, bask, or overwinter in those portions of the Plan Area that are within 1,650 feet of the lake. Therefore, project implementation has potential to result in take of western pond turtle adults, eggs, and hatchlings.	PS	BR-11. Conduct Preconstruction Surveys For Western Pond Turtle and Avoid Individuals and Nests Before any ground disturbing activities within 1,650 feet of Mather Lake, the project applicant shall consult with CDFW to establish appropriate avoidance procedures and procedures to apply if a western pond turtle, or active nest, is found within the construction area. The developer shall submit written evidence of the consultation and its conclusions to the County Environmental Coordinator. (Refer to Ch. 6 Biological Resources for full text of mitigation measure)	LTS
IMPACT: LOSS OF SWAINSON'S HAWK AND HABITAT There are numerous trees in the Plan Area that provide potential nest sites for Swainson's hawk. Project implementation would result in removal of these ~~trees and removal of approximately 592 acres of annual grassland foraging habitat~~, which could result in mortality of individuals	PS	BR-12. Avoid Swainson's Hawk Nests • Implement Mitigation Measure BR-4: Worker Environmental Awareness Program • Tree removal shall be conducted during the non-breeding season for Swainson's hawk (generally between	SU

and nest abandonment. A pair of Swainson's hawks were observed visiting a nest and defending territory in the Plan Area from April 29 to June 13, 2014 (Mather Stewardship Network 2014). Although eggs and young were not confirmed at the nest, nesting is probable in the Plan Area and has been documented nearby along White Rock Road. The CNDDB (2018) contains 14 nesting records between 1 and 5 miles of the Plan Area and 27 nesting records between 5 and 10 miles of the Plan Area. According to the Sacramento County methodology for determining impacts to foraging areas, development of the Plan Area would result in a total loss of habitat suitable for Swainson's Hawk.		September 1 and February 28) • Before initiating any construction activities during the Swainson's hawk breeding season (March 1 through August 31), project proponents shall retain a qualified wildlife biologist with knowledge of Swainson's hawk to conduct nesting surveys to identify active nests on and within 0.5 mile of the Plan Area. • Surveys shall be conducted in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000) or according to updated methodologies issued by CDFW. According to current guidelines, the biologist will use binoculars during the survey to inspect all large trees and document any Swainson's hawk nests that occur in the Plan Area or within 0.5 mile. (Refer to Ch. 6 Biological Resources for full text of mitigation measure)	
IMPACT: LOSS OF TRICOLORED BLACKBIRD NESTING COLONIES There is no suitable nesting habitat for tricolored blackbird in the Plan Area, so the project would have no direct impacts on this species; however, the species has been observed nearby at Mather Lake and may nest there. Large flocks of tricolored blackbirds were observed foraging in the Plan Area by the Mather Stewardship Network from May to June 2014 and the Plan Area is within 1.5 miles of potential nesting habitat at Mather Lake. Increased noise and human activity during construction that occurs during the breeding season (generally March through August) could disturb nesting tricolored blackbirds if an active colony is located near (within 0.25 mile) the construction area. These activities could result in nest abandonment and the incidental loss of fertile eggs or nestlings.	PS	BR-13. Avoid Tricolored Blackbird Nesting Colonies • Implement Mitigation Measure BR-4: Worker Environmental Awareness Program • For any construction activities proposed within 0.25 mile of Mather Lake during the tricolored blackbird nesting season (March 15 to August 31), a qualified biologist shall survey Mather Lake and a 0.25-mile buffer no more than 48 hours before the onset of activities for signs of tricolored blackbird individuals or nesting/colonial activity. • If construction activities are delayed or suspended for more than 15 days, an additional preconstruction tricolored blackbird survey will be conducted. If active tricolored blackbird nests are found within 0.25 mile of the project footprint during the nesting season (March 15 to August 31), then no construction activities shall proceed within 0.25 mile of the nest site until the end of the breeding season or until a qualified biologist, in consultation with CDFW, has determined that the young have fledged and moved out of the disturbance area. The	LTS

		buffer distance may be reduced if a qualified biologist, in consultation with CDFW, determines that such an adjustment would not be likely to affect the nesting colony. • Monitoring of the nesting colony by a qualified biologist during construction activities shall be required if the biologist determines a particular activity has the potential to adversely affect the nest, particularly if the buffer has been reduced below 0.25 mile. If construction activities cause nesting birds to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. (Refer to Ch. 6 Biological Resources for full text of mitigation measure)	
IMPACT: LOSS OF BURROWING OWL Project implementation would destroy potential nesting and wintering habitat for burrowing owl. This species has not been reported in the Plan Area, but nesting has been documented on the Mather Preserve west of the Plan Area. Adults, eggs, and juveniles could be killed during site grading and other ground disturbance that destroys occupied burrows or nest sites. Construction disturbances could also cause pairs nesting nearby to abandon their nests resulting in mortality of chicks and eggs.	PS	BR-14. Conduct Burrowing Owl Surveys and Develop an Exclusion and Relocation Plan Before any ground disturbing activities within 500 feet of potential burrowing owl habitat (i.e., annual grassland containing ground squirrels or debris piles, banks of streams/creeks) the project proponent shall hire a qualified biologist to conduct surveys in accordance with Appendix D of CDFW's Staff Report on Burrowing Owl Mitigation (2012). (Refer to Ch. 6 Biological Resources for full text of mitigation measure) BR-15. Compensate for Loss of Occupied Burrowing Owl Habitat If active burrowing owl burrows, or burrow surrogates (e.g., debris piles, culvert pipes) are found on the site and are destroyed by project implementation, the project proponent shall mitigate the loss of occupied habitat in accordance with guidance provided in the CDFW 2012 Staff Report or the most recent CDFW protocols, which states that permanent impacts to nesting, occupied and satellite burrows, and burrowing owl habitat shall be mitigated such that habitat acreage, number of burrows, and burrowing owls impacted are replaced through permanent conservation of comparable or better habitat with similar	LTS

		vegetation communities and burrowing mammals (e.g., ground squirrels) present to provide for nesting, foraging, wintering, and dispersal. The project proponent shall retain a qualified biologist to develop a burrowing owl mitigation and management plan. (Refer to Ch. 6 Biological Resources for full text of mitigation measure)	
IMPACT: DISTURBANCE OR LOSS OF GRASSHOPPER SPARROW, SHORT-EARED OWL, NORTHERN HARRIER, WHITE-TAILED KITE, **COOPER'S HAWK** AND LOGGERHEAD SHRIKE NESTS Northern harrier, white-tailed kite, and loggerhead shrike have been documented foraging and perching in the Plan Area and are likely nesting in the Plan Area based on behaviors observed by the Mather Stewardship Network in 2014. Short-eared owl **and Cooper's hawk** has been documented at Mather Field historically (1997) and grasshopper sparrow could potentially nest in the Plan Area. Project construction could remove or disturb active nests of grasshopper sparrow, short-eared owl, northern harrier, white-tailed kite, or loggerhead shrike potentially resulting in nest abandonment by the adults and mortality of chicks and eggs. Loss of chicks and eggs of these California species of special concern could reduce population levels and contribute to a trend toward these species becoming threatened or endangered in the future.	PS	BR-16. Conduct Preconstruction Surveys for Nesting Birds • Implement Mitigation Measure BR-4: Worker Environmental Awareness Program • Vegetation removal shall be carried out during the non-breeding season for birds and raptors (February 1 to August 31) to the extent feasible. • Before initiating any ground disturbing during the nesting season for these species in the Sacramento area (generally February 1 to August 31), the project applicant shall retain a qualified wildlife biologist with knowledge of the relevant species to conduct nesting surveys within 14 days before the start of construction or vegetation removal. • Surveys shall include a search of all trees, shrubs, wetlands, and grassland vegetation that provide suitable nesting habitat in the construction area and within 500 feet of the construction area. • If an active nest is found in the survey area, a buffer shall be established around the nest site to avoid disturbance or destruction of the nest until the end of the breeding season (August 31) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the project site (this date varies by species). The extent of these buffers shall be determined by the biologist and shall depend on the bird species, level of construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species. No project activity shall commence within the buffer areas	LTS

		until a qualified biologist has determined, in coordination with CDFW, the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment. • Monitoring of active nests by a qualified biologist during construction activities shall be required if the biologist determines a particular activity has the potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases.	
IMPACT: LOSS OF AMERICAN BADGER HABITAT Annual grassland and scrub, as well as open portions of cottonwood woodland throughout the Plan Area represents suitable habitat for American badger and two potential badger dens have been observed in the Plan Area and one in the adjacent Mather Preserve. Therefore, there is high potential for this species to den and forage in the Plan Area and project development could result in direct mortality of individuals or loss of natal dens resulting in death of young either directly through destruction of the den or indirectly through disturbance that causes the mother to abandon her kits. Loss of individuals within the project site could diminish the local population of this species and lower reproductive potential, which could contribute to further declines.	PS	BR-17. Protect Active American Badger Den Sites • Implement Mitigation Measure BR-4: Worker Environmental Awareness Program • Before construction activities within suitable habitat for American badger, a qualified biologist shall conduct surveys to identify any American badger burrows/dens. These surveys shall be conducted not more than 15 days before the start of construction. If occupied burrows are not found, further mitigation will be not required. If occupied burrows are found, CDFW shall be notified and impacts to active badger dens shall be avoided by establishing exclusion zones around all active badger dens, within which construction-related activities shall be prohibited until denning activities are complete or the den is abandoned. A qualified biologist shall monitor each den once per week to track the status of the den and to determine when a den area has been cleared for construction.	LTS
IMPACT: HAVE SUBSTANTIAL ADVERSE EFFECT ON RIPARIAN HABITAT OR SENSITIVE NATURAL COMMUNITIES The Plan Area does not contain designated sensitive natural communities other than vernal pool communities, which are	LTS	No mitigation required.	N/A

addressed under impacts to vernal pool invertebrate habitat and impacts to wetlands. Additionally, while cottonwood woodland is traditionally a riparian community, the cottonwood woodland in the Plan Area is not associated with the bed and bank of a river, stream, or other water body and is not connected to the active floodplain of the American River.			
IMPACT: LOSS OF WETLANDS AND WATERS Project implementation would result in direct loss of a total of approximately 15.09 acres of waters of the United States consisting of 14.72 acres of wetlands and 0.37 acre of other waters (stream/creek). The majority of stream/creek habitat in the Plan Area would be ~~preserved~~**avoided** within the Open Space Drain land use and 4.29 acres of the wetland habitat would be preserved in the Open Space preserves. There is a total of 24.92 acres of potential waters of the United States in the Plan Area, of which approximately 9.83 acres would be preserved onsite.	PS	BR-18. Implement BR-1 through BR-5 BR-19. Compensate for Loss of Wetlands/Waters not Compensated under BR-2 All necessary permits under Section 1602 of the California Fish and Game Code (Lake and Streambed Alteration Agreement) and Sections 401 and 404 of the CWA or the state's Porter-Cologne Act shall be obtained and all permit conditions implemented as will the conditions and requirements of all other state and federal permits obtained for the project. The project applicant of any project that would result in removal of drainage ditches shall compensate for the permanent fill of waters of the United States and waters of the state. The minimum compensation ratio to achieve no net loss of functions and values for will be 1:1 (1 acre of wetland credit for every 1 acre of permanent impact). (Refer to Ch. 6 Biological Resources for full text of mitigation measure)	LTS
IMPACT: INTERFERE WITH THE MOVEMENT OF ANY NATIVE RESIDENT OR MIGRATORY FISH OR WILDLIFE SPECIES OR IMPEDE USE OF WILDLIFE NURSERY SITES Although the project would convert approximately 706 acres of undeveloped habitat to developed land uses, the Plan Area does not include areas mapped as important to wildlife movement. However, the Plan Area contains habitat for common nesting birds protected under California Fish and Game Code Section 3503 and the Migratory Bird Treaty Act.	PS	BR-20. Implement BR-16	LTS

IMPACT: CONFLICT WITH SACRAMENTO TREE ORDINANCE A comprehensive tree inventory was conducted in the Plan Area in 2014 and identified 455 native trees with a DBH of 4 inches or greater (assumed to be 6 inches or greater now) of which 453 are Fremont cottonwood and two are Pacific willow. The Plan Area also contains 22 nonnative trees with a DBH of 6 inches or greater.	PS	BR-21. Compensate for Native Tree Removal Before initiating development projects, project applicants shall submit an arborist report for the project impact areas when appropriate habitat exists. The report shall include the species, diameter, dripline, and health of all trees 6 inches in diameter at breast height or larger and shall be prepared by an ISA certified arborist. The report shall include an exhibit that shows the trees and their driplines in proximity to the project improvements. The report shall identify any tree proposed for removal and shall quantify any encroachment from project equipment or facilities within driplines of native trees. (Refer to Ch. 6 Biological Resources for full text of mitigation measure) BR-22. Replace Nonnative Tree Canopy The removal of nonnative tree canopy shall be mitigated for with the creation of new tree canopy equivalent to the acreage of non-native tree canopy removed. New tree canopy acreage shall be calculated using the Sacramento County Department of Transportation 15-year shade cover values for tree species. Preference is given to on-site mitigation, but if this is infeasible, then funding shall be contributed to the Sacramento Tree Foundation's Greenprint program in an amount proportional to the tree canopy lost (as determined by the 15-year shade cover calculations for the tree species to be planted through the funding, with the cost to be determined by the Sacramento County Tree Foundation).	LTS
IMPACT: SPECIAL STATUS BATS **Although the potential for occurrence of pallid bat and western red bat in the Plan Area is low, suitable foraging and roosting habitat is present and these species may roost onsite. Given the wide range of habitats suitable for foraging within the County, the loss of foraging habitat within the Plan Area is not likely to be substantial. If roosts and maternity colonies are present in mature trees and structures within the Plan Area, the removal of these trees and structures could result in the loss of bats and**	**PS**	**BR-23. Bat Roost and Colony Impact Minimization** **The Applicant shall implement the following measures to minimize bat mortality due to roost disturbance or destruction.** • **If suitable roosting habitat for special-status bats will be affected by Project construction (e.g., removal of trees or buildings, modification of bridges/box culverts), a qualified wildlife biologist will conduct surveys for special-status bats during**	**LTS**

reproductive capacity which could further reduce the population of bats in the region. Therefore, the loss of roosts or disruption of maternity colonies in the Plan Area would be a potentially significant impact. Implementation of Mitigation Measure BR-23 would reduce potentially significant impacts on special-status bats to less than significant with mitigation because this measure requires conducting surveys for roost sites, identifying any roosts in the Plan Area, implementing procedures to reduce mortality, and compensation for lost roosts.		**the appropriate time of year to maximize detectability to determine if bat species are roosting near the work area no less than 7 days and no more than 14 days before beginning vegetation removal, ground disturbance, and/or construction. Survey methodology may include visual surveys of bats (e.g., observation of bats during foraging period), inspection for suitable habitat, bat sign (e.g., guano), or use of ultrasonic detectors (e.g., Anabat, etc.). Visual surveys will include trees within 0.25 mile of Project construction activities if the potential roost could be disturbed by construction activity. If the potential roost is separated from the construction site by topographic, vegetation, structural, or other visual barriers or by areas of routine human disturbances that are greater than the project construction disturbances, surveys of those potential roosts will not be necessary. The type of survey will depend on the condition of the potential roosting habitat. If no bat roosts are found, then no further study is required.** • **If evidence of bat use is observed, the number and species of bats using the roost will be determined. Bat detectors may be used to supplement survey efforts.** • **If roosts are determined to be present and must be removed, the bats will be excluded from the roosting site before the facility is removed. A mitigation program addressing compensation, exclusion methods, and roost removal procedures will be developed and submitted to CDFW for approval, before implementation. Exclusion methods may include use of one-way doors at roost entrances (bats may leave, but not reenter), or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young). Loss of roosting habitat may be compensated with**	

		permanent, elevated bat houses or condos installed outside of, but near the construction area. Placement and height shall be determined based on species evicted or as determined by a qualified biologist in consultation with CDFW. Bat houses will be multi-chambered and be purchased or constructed in accordance with CDFW standards. The number of bat houses required will be dependent upon the size and number of colonies found, but at least one bat house will be installed for each pair of bats (if occurring individually), or of sufficient number to accommodate each colony of bats to be relocated	
IMPACT: SOUTH SACRAMENTO HABITAT CONSERVATION PLAN The SSHCP identifies the Plan Area as an urban development area and does not provide incidental take coverage to the Mather South Project. However, project development would not interfere with implementation of the SSHCP or prevent attainment of the SSHCP Biological Goals and Measurable Objectives.	LTS	**BR-24. Implement Applicable SSHCP Avoidance and Minimization Measures.** **The Project Applicant shall implement SSHCP AMMs EDGE-8 (Outdoor Lighting), EDGE-10 (Prevent Invasive Species Spread), and BMP-2 (Erosion Control). If equivalent or more effect mitigation is required as part of the Project's State and federal permits, those mitigation measures may be implemented subject to the final determination of the Sacramento County Environmental Coordinator.**.	LTS
IMPACT: BIOLOGICAL IMPACTS RELATED TO OFFSITE IMPROVEMENTS The project would be required to make offsite road improvements which may include intersection improvements and/or road widening. The project would also require offsite energy infrastructure to be implemented. A project specific CEQA analysis would be required once improvements are identified and project-level designs are prepared. Biological resources that could be affected by the offsite improvements are expected to be the same as those existing in the Plan Area, however, it is possible that improvements could affect habitat types or resources not found in the Plan Area, such as riparian or emergent marsh habitat at stream crossings or native oak trees. Specific impact amounts cannot be determined at this time for each biological resource type potentially affected by	PS	No feasible mitigation.	SU

offsite infrastructure.			
Climate Change and Greenhouse Gas Emissions			
IMPACT: PROJECT GHG EMISSIONS Development of the Mather South Project would result in GHG emissions from energy consumption (e.g., electricity use, natural gas use, water use), mobile sources (i.e., project-generated VMT), and from waste generation at offsite landfills. Energy-related emissions associated with the proposed residential land uses would result in 0.57 $MTCO_2e$ per capita, which is below the 0.73 $MTCO_2e$ per-capita threshold. Energy-related missions from nonresidential land uses would result in 2.97 $MTCO_2e$ per 1,000 square feet, which is below the 4.28 $MTCO_2e$ per 1,000 square feet threshold. There would be a surplus in emissions reductions needed for both the residential and nonresidential sectors, by 1,444 and 1,214 $MTCO_2e$/year, respectively. Emissions from project-generated VMT in 2032 would result in 2.46 $MTCO_2e$ per capita, which is above the 1.47 $MTCO_2e$ per-capita threshold. The surplus of emissions reductions from the residential and nonresidential sectors can be applied to GHG emissions reductions needed for the mobile sector. The additional reduction of 2,659 $MTCO_2e$/year would reduce the mobile sector's per capita emissions to 2.17 $MTCO_2e$. However, even with these additional reductions in GHG emissions, project-generated GHG emissions would exceed applicable Sacramento County thresholds of significance for transportation and result in a cumulatively considerable contribution to climate change.	PS	CC-1. Implement Mitigation Measure AQ-2. Emissions estimates account for all incorporated design measures (as indicated in the Air Quality Mitigation Plan [AQMP] in Appendix AQ-2 of this EIR). These include traffic calming measures and a neighborhood electric vehicle (NEV) network. The measures of the AQMP would reduce GHG emissions through reduced vehicle idling and fuel consumption, and switching to cleaner fuels (i.e., electricity). CC-2. Reduce greenhouse gas emissions on-site. The project applicant shall incorporate the following mitigation measures into the project to reduce operational emissions of GHGs to the extent feasible. (Refer to Ch. 7 Climate Change for full text of mitigation measure) CC-3. Purchase carbon offsets. In addition to Mitigation Measures CC-1 and CC-2, the project developer shall offset the remaining GHG emissions that exceed the transportation mass emission threshold of 301 MTCO2e/year for the lifetime of the project (i.e., 25 years) (SMAQMD 2018) by funding activities that directly reduce or sequester GHG emissions or, if necessary, obtaining carbon credits. This mitigation measure is consistent with guidance recommended by SMAQMD and CARB (SMAQMD 2018:6-12 and CARB 2017:152). This measure is also consistent with the State CEQA Guidelines, which recommend several options for mitigating GHG emissions. State CEQA Guidelines Section 15126.4(C)(3) states that measures to mitigate the significant effect of GHG emissions may include "off-site measures, including offsets that are not otherwise required…" Mitigation Measure CC-3 requires the project developer to implement an off-site GHG emissions reduction program or to pay GHG offset fees to compensate for the project's transportation-related emissions in excess of 301 $MTCO_2e$/year. Based on the results shown in Table CC-11,	LTS

		the total GHG emissions that would need to be offset by the project would be 7,519 $MTCO_2e$. (Refer to Ch. 7 Climate Change for full text of mitigation measure)	
IMPACT: CLIMATE CHANGE EFFECTS ON THE PROJECT Scientists have identified several ways in which global climate change could alter the physical environment in California. Several of these changes may translate into a variety of issues and concerns that may affect the project area, including: • increased frequency and intensity of wildfire as a result of changing precipitation patterns and temperatures; • reliability in water supply associated with changes to precipitation and snowmelt patterns; and • increased risk of flood associated with sea level rise. However, the project is not located in an area that is anticipated to experience higher than average wildfire, or floods. Additionally, the project water supply assessment ensures the availability of water.	LTS	No mitigation required.	N/A
Cultural Resources			
IMPACT: CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A HISTORIC RESOURCE A total of 23 cultural resources (archaeological and built environment resources) were identified adjacent to or within the Mather South Plan Area. None of these resources meet the criteria for listing in the NRHP and/or the CRHR. There does not appear to be the potential for a historic district or a historic landscape for which these resources might be considered as contributing elements. Consequently, none of the 23 buildings, structures or objects are considered historic resources for the purposes of CEQA. However, unknown historic resources may be uncovered during construction activities.	PS	CR-1. For any unexpected historic or cultural resources discovered during project construction, work shall be halted until a qualified archaeologist evaluates the resource encountered. 1. In the event of an inadvertent discovery of historic or cultural resources, all work must halt within a 200-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained at the Applicant's expense to evaluate the significance of the find. If it is determined due to the types of deposits discovered that a Native American monitor is required, the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites as established by the Native	LTS

		American Heritage Commission shall be followed, and the monitor shall be retained at the Applicant's expense. a. Work cannot continue within the 200-foot radius of the discovery site until the archaeologist and/or tribal monitor conducts sufficient research and data collection to determine that the resource is either 1) not cultural in origin; or 2) not potentially eligible for listing on the National Register of Historic Places or California Register of Historical Resources. b. If a potentially-eligible resource is encountered, then the archaeologist and/or tribal monitor, Office of Planning and Environmental Review staff, and project proponent shall arrange for either 1) total avoidance of the resource, if possible; or 2) test excavations or total data recovery as mitigation. The determination shall be formally documented in writing and submitted to the County Environmental Coordinator as verification that the provisions of CEQA for managing unanticipated discoveries have been met. 2. Pursuant to Sections 5097.97 and 5097.98 of the State Public Resources Code, and Section 7050.5 of the State Health and Safety Code, if a human bone or bone of unknown origin is found during construction, all work is to stop and the County Coroner and Office of Planning and Environmental Review (PER) shall be immediately notified. If the remains are determined to be Native American, the coroner shall notify the Native American Heritage Commission within 24 hours, and the Native American Heritage Commission shall identify the person or persons it believes to be the most likely descendent from the deceased Native American. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposition of, with appropriate dignity, the human remains and any associated grave goods.	
IMPACT: CAUSE SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A UNIQUE ARCHAEOLOGICAL	PS	Implement Mitigation Measure CR-1	LTS

RESOURCE No archaeological resources were identified as a result of previous studies conducted; however, it is still possible that significant buried archaeological materials are present within the Mather South Plan Area. Disturbance or destruction of previously unknown resources may result from ground-disturbing construction activities.			
IMPACT: DISTURB ANY HUMAN REMAINS, INCLUDING THOSE INTERRED OUTSIDE OF FORMAL CEMETERIES There are no known human burial sites within the Mather South Plan Area; however, it is possible that buried human remains are present and have not been identified because of a lack of surficial evidence. It is possible that previously unknown human remains may be encountered during ground-disturbing construction activities associated with the project.	PS	Implement Mitigation Measure CR-1	LTS
IMPACT: CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A TRIBAL CULTURAL RESOURCE The Ione Band of Miwok, the UAIC, and Wilton Rancheria. None of these tribes have indicated that tribal cultural resources are known within the Mather South Plan Area. Because no tribal cultural resources have been identified within the Plan Area to date, potential impacts would likely be less than significant. Nonetheless, the potential exists to uncover previously undiscovered tribal cultural resources during construction activities.	PS	CR-2. If the lead agency determines that a project may cause a substantial adverse change to a tribal cultural resource, and measures are not otherwise identified in the consultation process provided in Section 21080.3.2 of the Public Resources Code, one of the following measures would be implemented to avoid and/or minimize the impact to tribal cultural resources: 1. Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks or other open space, to incorporate the resources with culturally appropriate protection and management criteria. 2. Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following: a. Protecting the cultural character and integrity of the	LTS

		resource. b. Protecting the traditional use of the resource. c. Protecting the confidentiality of the resource. 3. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places. 4. Protecting the resource.	
Energy			
IMPACT: RESULT IN WASTEFUL, INEFFICIENT, OR UNNECESSARY CONSUMPTION OF ENERGY Project implementation would result in the development of new land uses including low- to high-density residential, commercial, public facilities, a research and development campus, an environmental education campus, parks, recreation, and open space areas. Construction activity associated with the development of these land uses would result in energy use during each phase of project construction. New land uses would also require energy during operation of the project such as heating, cooling, lighting, transportation and other similar demands. The project would be constructed in compliance with CA Building Code Title 24 energy efficiency standards and would support active transportation and alternative transportation modes.	LTS	No mitigation required.	N/A
IMPACT: EXCEED THE AVAILABLE CAPACITIES OF ENERGY SUPPLIES THAT REQUIRE THE CONSTRUCTION OF FACILITIES Development of the project would result in an increased demand for gas and electricity in the project region. However, adequate gas and electricity regional infrastructure and supplies are available, and the project would construct project specific connections as part of the utilities and service provision phase. Natural gas lines would be extended to the project site	LTS	No mitigation required.	N/A

as part of the sewer trunk extension project along Zinfandel Drive. Similarly, the project would require one new electric substation and transmission lines which would connect to the existing nearby Jackson Bulk Substation.			
Cumulative Energy			
IMPACT: SMUD BULK SUBSTATION Implementation of the four proposed specific and community master plans would result in a substantial increase in the regional demand for energy and the subsequent need to develop new supportive infrastructure (i.e., one bulk substation, eight distribution substations, two expanded distribution substations, transmission lines, sub-transmission lines, and accessory infrastructure).	N/A	CU-1 Coordination with SMUD The project applicant of each of the following Specific and Community Master Plans: Newbridge Specific Plan, the West Jackson Highway Master Plan, the Jackson Township Specific Plan, and the Mather South Community Master Plan shall coordinate with SMUD to identify the timing of construction of the Jackson Bulk Substation and seek to facilitate efficiencies in grading and pre-construction activities as feasible, as a condition of this project.	N/A
Geology and Soils			
IMPACT: SEISMIC RELATED ISSUES The Mather South Plan Area is not located within an Alquist-Priolo Earthquake Fault Zone or within the vicinity of a known fault. In addition, Sacramento County is in one of the areas least prone to earthquake shaking potential. The Plan Area does not contain bluffs or topography that would make it susceptible to landslides. The project would also be required to comply with the California Building Code.	LTS	No mitigation required.	N/A
IMPACT: SOIL EROSION OR LOSS OF TOPSOIL The soil types mapped within the Plan Area have water erosion potential ranging from low to moderate. The most likely potential for erosion to occur would be during construction when soils would be graded and excavated and may be exposed to the effects of wind and/or water for some length of time. The project would be subject to the County Land Grading and Erosion Control Ordinance and the State Water Resources	LTS	No mitigation required.	N/A

Control Board stormwater permitting requirements, any development related to the project would be subject to erosion and sediment control measures as a matter of standard policy.			
IMPACT: EXPOSURE TO EXPANSIVE SOILS The soils within the Plan Area exhibit shrink-swell potential in the low to high range. Development related to the Mather South Project would result in new structures and roadways located in areas potentially containing expansive soils, which have the ability to cause structural damage to both foundations and roads. However, the construction permitting process within Sacramento County requires completed geotechnical reports for developments located within areas known to contain expansive soils and subsequent project conditioning to eliminate the hazardous soil conditions.	LTS	No mitigation required.	N/A
IMPACT: RESULT IN A SUBSTANTIAL LOSS OF A MINERAL RESOURCE Development of the Mather South Project would result in new residential and commercial development in the Plan Area, which would create a permanent loss of access to mineral resources. However, the Plan Area was previously designated for urban development and has not been designated as an ARRA for minerals.	LTS	No mitigation required.	N/A
IMPACT: POTENTIAL DESTRUCTION OF BURIED PALEONTOLOGICAL RESOURCES Construction of the Mather South Project would involve shallow grading activities and some trenching for infrastructure development. The Laguna Formation, which underlies the Plan Area, is considered to have high paleontological sensitivity.	PS	GS-1. In the event that paleontological resources are unearthed during ground-disturbing activities during site preparation and/or construction, ground-disturbing work shall immediately cease in the vicinity of the discovery. The project applicant shall immediately notify the Environmental Coordinator of the discovery and contact the Geology Department of the University of California at Davis or other qualified institution. A qualified paleontologist or paleoresources consultant shall prepare a mitigation program for the discovery and monitor the area of the discovery and the vicinity and identify, curate, and store the specimen as appropriate. All phases of mitigation shall be supervised by a professional paleontologist who maintains the necessary paleontological collecting permits and	LTS

		repository agreements. If any additional paleontological remains are encountered during the project, the paleontologist has the authority to stop work in the immediate vicinity of the find to evaluate the find, record, and remove the find if significant. The paleontologist shall also prepare a report of the find(s) and their significance after operations are complete.	
IMPACT: RESULT IN LOSS OF IMPORTANT AGRICULTURAL SOILS The Plan Area has been designated a part of the Urban Services Boundary, which indicates the County's intent for development of the site. The project site is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on the current Sacramento County Important Farmland Map published by the California Department of Conservation	NI	No mitigation required.	N/A
Hazards and Hazardous Materials			
IMPACT: ACCIDENTAL RELEASE DUE TO ROUTINE TRANSPORT, USE OR DISPOSAL OF HAZARDOUS MATERIALS Construction activities would occur within the Mather South Plan Area and would require the use of standard hazardous materials such as fuels, oils, lubricants, glues, paints, paint thinners, soaps, bleach, and solvents. The materials would only pose a hazard if they are improperly used, stored, or transported either through upset conditions (e.g., a large spill or an explosion) or mishandling. All persons involved in the handling of these hazardous materials are required to use, store, and transport hazardous materials in compliance with local, state, and federal regulations during project construction and operational activities.	LTS	No mitigation required.	N/A
IMPACT: CREATE A SIGNIFICANT HAZARD THROUGH THE REASONABLY FORESEEABLE UPSET AND ACCIDENT CONDITIONS INVOLVING THE RELEASE OF HAZARDOUS	PS	HM-1. Worker Health and Safety. Each contractor whose employees may be potentially exposed to contaminants known to be present in site soil, soil gas, or groundwater shall develop and implement their own contractor-specific	LTS

MATERIALS INTO THE ENVIRONMENT Construction associated with the Mather South Project would involve site grading, excavation, trenching, and demolition and construction of buildings. All activities have the potential to release hazardous materials into the environment because of the routine use of hazardous materials during these activities including fuel, lubricants, and solvents. The Mather South Project site contains bunker buildings associated with a former weapons storage area that were constructed in the early part of the century and that would be demolished during the construction phase. The Plan Area contains remediated areas of contaminants in the underlying soils and groundwater. Excavation and construction activities at or near these areas could potentially expose construction workers and the general public to previously unidentified soil contamination.		and site-specific Health and Safety Plan (HASP). The HASP shall establish the minimum requirements, policies, and procedures adequate to protect site workers, the public, and the environment from identified site environmental hazards. The HASP shall be prepared in accordance with 29 CFR 1910.120 Occupational Safety and Health Administration (OSHA), Hazardous Waste Operations and Emergency Response (HAZWOPER), and California Code of Regulations (CCR), Title 8, Section 5192. (Refer to Ch. 11 Hazardous Materials for full text of mitigation measure) HM-2. Soil Sampling Before Ground Disturbing Activities. Before construction activities begin within the Mather South Plan Area, targeted surface soil sampling shall be conducted to evaluate concentrations of chemicals of concern in surface soil. (Refer to Ch. 11 Hazardous Materials for full text of mitigation measure) HM-3. Contaminated Soil Contingency Plan. Before construction, the applicant shall submit a Contaminated Soil Contingency Plan to the County for review and approval. The plan shall include practices that are consistent with the California Title 8 and Occupational Safety and Health Administration (Cal-OSHA) regulations and shall outline steps that would be implemented if contaminated soils are encountered. The objective of the plan shall be to minimize risk to the public and to the environment resulting from exposure to and disturbance of contaminated soils. (Refer to Ch. 11 Hazardous Materials for full text of mitigation measure) HM-4. Hazardous Materials Notification. Within the Mather South Plan Area, there is the potential for MEC or munitions debris to be encountered on the surface or subsurface of the investigation area, particularly during ground-disturbing activities at greater depths. The Sacramento County Office of Economic Development shall notify future landowners of the following: the former military use of the Mather South Plan Area, the completed munitions response actions at the site, and the appropriate steps to take in the event that suspected munitions-related items are discovered. This information shall be provided to future landowners through	

		environmental disclosure reports before final sale. (Refer to Ch. 11 Hazardous Materials for full text of mitigation measure)	
IMPACT: RESULT IN HAZARDOUS EMISSIONS OR HANDLE HAZARDOUS OR ACUTELY HAZARDOUS MATERIALS, SUBSTANCES, OR WASTE WITHIN ONE-QUARTER MILE OF A PROPOSED OR EXISTING SCHOOL There are no existing schools within one-quarter mile of the Mather South Plan Area. However, two new schools are included within the Mather South Project. Both school sites would be located within one-quarter mile of identified hazardous waste cleanup sites within the Plan Area. A qualified consultant would be hired to complete a PEA under DTSC oversight and review. Once operational, no additional ground disturbing activities would occur at either of the school sites. The project would comply with the Education Code and construction-period mitigation measures that include sampling and remediation should hazardous materials be encountered.	PS	Implement Mitigation Measures HM-1 through HM-4 and Mather Field SPA Ordinance Performance Standards	LTS
IMPACT: BE LOCATED ON A SITE WHICH IS INCLUDED ON A LIST OF HAZARDOUS MATERIALS SITES COMPILED PURSUANT TO GOVERNMENT CODE SECTION 65962.5 AND, AS A RESULT, WOULD CREATE A SIGNIFICANT HAZARD TO THE PUBLIC OR THE ENVIRONMENT Mather AFB, including the Mather South Plan Area, is a federal superfund site. However, the Phase I conducted for the Mather South Plan Area reported RECs based on review of historic record, property records, and environment records, including the Cortese List. As previously discussed, these previously recorded sites have been remediated. However, excavation and construction activities at or near these areas could potentially expose construction workers and the general public to previously unidentified soil and/or groundwater contamination.	PS	Implement Mitigation Measures HM-1 through HM- 4 and Mather Field SPA Ordinance Performance Standards	LTS
IMPACT: IMPAIR IMPLEMENTATION OF AN EMERGENCY RESPONSE PLAN OR INTERFERE WITH AN ADOPTED	NI	No mitigation required.	N/A

EMERGENCY RESPONSE PLAN The Sacramento County Office of Emergency Services (SacOES) has the primary responsibility for preparedness and response activities and addresses disasters and emergency situations within Sacramento County. The Mather South Project would not interfere with any of the county-wide emergency plans, including the Emergency Operations Plan or the Local Hazard Mitigation Plan because both plans develop goals and objectives for SacOES related to emergency planning and large-scale natural or man-made disasters.			
IMPACT: EXPOSE PEOPLE OR STRUCTURES TO A SIGNIFICANT RISK OF LOSS, INJURY OR DEATH INVOLVING WILDLAND FIRES, INCLUDING WHERE WILDLANDS ARE ADJACENT TO URBANIZED AREAS OR WHERE RESIDENCES ARE INTERMIXED WITH WILDLANDS The project site is in a non-very high fire hazard severity zone (FHSZ) within Sacramento County, as mapped by Metro Fire and CalFire. As required by Policy SA-23 in the Sacramento County General Plan, plans for the facility would be provided to Metro Fire Department for review and comment regarding: adequacy of water supply; site design for fire department access into and around structures; ability for a safe and efficient fire department response; traffic flow and ingress/egress for residents and emergency vehicles; site-specific built-in fire protection; and potential impacts to emergency services and fire department response.	LTS	No mitigation required.	N/A
Hydrology and Water Quality			
IMPACT: CONTRIBUTION TO POLLUTED RUNOFF OR VIOLATION OF A WATER QUALITY STANDARD Water quality impacts could occur during construction from increased soil erosion and sedimentation because of clearing of vegetation, alteration of drainages, and grading. Construction also involves solvents, paints, concrete, and other materials that have the potential to contact and affect runoff from construction sites. The project would be required to comply with	LTS	No mitigation required.	N/A

County ordinances, and the State's General Stormwater Permit for Construction Activities and County Stormwater Ordinance, as well as implement Low Impact Development Standards. The project must also have BMPs in place to keep other construction-related wastes and pollutants out of the storm drains.			
IMPACT: HYDROMODIFICATION The project would result in an alteration to the existing hydromodification of the site but would construct 10 multi-purpose detention basins and water quality features to prevent offsite flows and water quality impacts.	PS	HY-1. Before Improvement Plan approval, applicants shall submit a drainage study in accordance with the requirements outlined in the "Drainage Study Requirements" document dated June 12, 2008 (or subsequent updates). The study shall describe permanent stormwater quality treatment facilities capable of treating stormwater to the satisfaction of the State Water Board for injection into the Mehrten formation in the infiltration trenches in the basins. Alternate solutions to percolations trenches shall be discussed in the study such as reuse of the collected summer nuisance flows for irrigation of public spaces, or rigorous LID measures, etc.	LTS
IMPACT: FLOODING On-site flooding: The project Storm Drainage Plan analyzes at a plan-level the drainage requirements for buildout of the Mather South Project and evaluates the proposed drainage facilities to maintain downstream drainage impacts at or below existing conditions. The study establishes a conceptual backbone drainage system, tributary watersheds, the location of drainage facilities, pre-development and post-development flows, required flood detention and post-project water quality conditions. Since the Storm Drainage Plan is conceptual and prepared for a plan-level analysis, additional detailed design calculations would need to be prepared for subdivision map improvement plans. Off-site flooding: The Mather South Project is designed so that peak flows are attenuated to pre-project conditions; however, there will be more volume leaving the site due to the increase in impervious surfaces. The Beach Stone Lakes Area Impact Analysis Memorandum indicates that while detention basins are designed to capture and keep peak runoff and not exceed existing conditions, an incremental amount of runoff may occur	PS	HY-2. The Mather South Project shall mitigate its downstream impacts by either of the following options: a. Payment of the Beach Stone Lakes Mitigation Fee (Sacramento County Water Agency Zone 11A). a. Ensuring no net project-related increase in volume in Beach Stone Lakes by metering outflow from the Plan Area, increasing storage capacity of onsite facilities, directing drainage into downstream facilities offsite, or other regional drainage solutions as determined by the County Department of Water Resources.	~~LTS~~**SU**

and contribute to the existing flooding condition downstream at the Beach Stone Lakes area.			
IMPACT: DAM FAILURE/LEVEE The closest dam to the Plan Area is Mather Dam which provides flood control to the Mather Lake. A 1996 USACE study determined that in the event of a dam failure at Mather Lake, a failure time of four (4) hours would result. The "dam breach" scenario in the study shows that Zinfandel Drive would be overtopped and the flows from the breach were shown to generally follow the existing path of Morrison Creek to the southwest toward and through the existing Independence at Mather subdivision. The Plan Area is also located over 10 miles south and downslope of Folsom Reservoir.	LTS	No mitigation required.	N/A
IMPACT: EFFECTS OF CLIMATE CHANGE ON PROJECT The hydrology analysis contained in the Drainage Master Plan demonstrates that the proposed land uses on-site would not be exposed to flooding, there remains some uncertainty regarding future precipitation frequency and intensity because of climate change. The County has not adopted any policies or guidance with regard to the evaluation of hydrologic climate-related impacts. Because of the uncertainty associated with the physical effects of climate change that would be experienced in the Plan Area, it is too speculative to determine with certainty the actual impacts that would occur and render an impact conclusion. The modeling performed for the project is based on a range of potential climate assumptions (scenarios) that could occur based upon the science as it currently stands. However, climate change science is a rapidly evolving area that is continually subjected to new legislation, policy, and scientific advancement. Concurrently, the County is considering regional policies and solutions to address climate-related impacts, but as of the date of this document, no such solution has been developed.	N/A	HY-3. At the time of submittal of backbone infrastructure plans, the project applicant shall submit a hydrologic analysis that is based upon adopted County guidance regarding a reasonably foreseeable climate change scenario. Based on the results of the hydrologic analysis and if impacts are identified, the project applicant shall implement all feasible design measures within the project's drainage system to adequately maintain pre-project flows with consideration of climate change effects. Potential improvements could include deepening the existing basin(s) within the Plan Area that would be subject to over-topping. Basin deepening would require minimal construction-related impacts including excavation and hauling of an additional increment of soil from the site. These construction-related impacts have been evaluated throughout this EIR. Alternatively, if the County has adopted a regional solution for flooding related to climate-change, the project applicant shall contribute its fair share towards funding the construction of the regional solution. If the County has not developed a regional solution or has not adopted guidance for evaluating hydrologic climate-related impacts, the project applicant shall prepare and submit a hydrologic analysis that is based on the best available technical information at that time, in consultation	N/A

		with the County's Department of Water Resources and the Office of Planning and Environmental Review.	
Land Use and Planning			
IMPACT: PHYSICALLY DIVIDE AN ESTABLISHED COMMUNITY The Mather South Project would result in the development of a master planned community which would establish a new comprehensive set of land uses that are designed to operate and function together in a cohesive manner. The land upon which the project would be developed is currently vacant and is adjacent to some residential uses but would not result in the physical division or disruption of those uses.	LTS	No mitigation required.	N/A
IMPACT: CONFLICT WITH LAND USE PLANS, POLICIES, OR REGULATIONS The project would require the amendment of the General Plan from the existing Urban Development Area (795 acres) land use designation to a combination of the following: Low Density Residential (622 acres), Medium Density Residential (17 acres), Natural Preserve (86 acres), and Commercial and Offices (70 acres). The project would also require GPAs to the Transportation Plan to reflect proposed roadway alignments and transit systems and amend the County's Bicycle Master Plan to add internal and external bicycle facilities within and through the project area as shown in the Bicycle Master Plan Amendment Diagram. The project would also be consistent with the Cordova Community Plan, the Mather Field Specific Plan, and the Mather Airport CLUP and APPA.	LTS	No mitigation required.	N/A
IMPACT: RESULT IN LAND USE CONFLICTS OR ADJACENCY ISSUES The Mather Field Project, which was approved in 2016, resulted in the redesignation of the Mather South Plan Area as an Urban Development Area which signaled the intent of the County to pursue a development plan for the area. The Plan Area is also within the Urban Services Boundary and Urban Policy Area which indicates the intent to provide public services	PS	LU-1. Require implementation of Mather Field Specific Plan Ordinance Section 603-19 for all properties located within the R-22 and R-23 land use designation along the southern portion of the Plan Area prior to occupancy or sale. LU-2. At the time of site plan approval, require the implementation of standard conditions to minimize the potential for noise and odor issues resulting from adjacency to the rendering facility including fencing or walls, screening,	LTS

to the Plan Area. The project is consistent with the land uses currently designated. However, adjacency issues have the potential to arise as the Sacramento Rendering Plant is located just south of the Plan Area and may produce odors occasionally.		building orientation, double paned windows, etc.).	
Noise			
IMPACT: CONSTRUCTION NOISE Construction activity associated with the development of land uses included in the Mather South Project as well as project related infrastructure would result in construction noise, although construction noise would be temporary in nature depending on the characteristics of the construction activity and land uses being developed. Noise associated with the construction of buildings, facilities, and infrastructure for land uses in the Mather South Project would be associated with the operation of off-road construction equipment including demolition and excavation equipment, material handlers, and portable generators. In addition to new noise sensitive land uses developed as part of the project, there is an existing residential neighborhood within the City of Rancho Cordova located approximately 500 feet to the east of the project site. Based on construction noise modeling results, noise levels would exceed both the Sacramento County exterior noise thresholds for both the daytime and nighttime standards. Offsite traffic improvements would also result in construction-related noise.	PS	NOI-1. Reduce sensitive receptor exposure to construction noise during noise-sensitive time periods. Consistent with County Noise Control Ordinance Section 6.68.090 Exemptions, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after 8 p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner. For all outdoor construction/decommissioning activity that is to take place outside of the Sacramento County construction noise exception timeframes (i.e., between 6:00 a.m. and 8:00 p.m., Monday through Friday, and between 7:00 a.m. and 8:00 p.m. on Saturdays and Sunday), the contractor shall ensure that a noise monitoring plan is prepared by a qualified acoustical engineer and approved by the project applicant. The noise monitoring plan shall, at a minimum, include the following components: • detailed description of the proposed nighttime construction/decommissioning activities, • list of equipment used during all nighttime construction/decommissioning activities, • projected noise levels generated during the nighttime construction/decommissioning activities at surrounding	LTS

		noise-sensitive land uses, • location of sensitive receptors in relation to the proposed nighttime construction/decommissioning activities, and • detailed description of the location and times that noise monitors would be deployed. Subsequently, during any nighttime construction, noise shall be monitored and documented for the nearest sensitive land use to ensure that the County's exterior noise standards for non-transportation noise sources are not exceeded. In the event that monitored noise levels exceed applicable noise standards, onsite construction activities shall cease operations immediately. Before resuming nighttime construction activities, noise-control measures shall be implemented to reduce operational noise levels to below acceptable levels. Noise control measures could include, but are not limited to, the following: • All equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation. • Where available and feasible, equipment with back-up alarms shall be equipped with either audible self-adjusting backup alarms or alarms that only sound when an object is detected. Self-adjusting backup alarms shall automatically adjust to 5 dBA over the surrounding background levels. All non-self-adjusting backup alarms shall be set to the lowest setting required to be audible above the surrounding noise levels. • To the extent that noise-generating outdoor construction activity needs to occur at night as part of a continuous construction activity, the activity shall be planned such that the portion that needs to take place closest to residential receptors takes place during less noise-	

		sensitive daytime hours. • Noise-reducing enclosures and techniques shall be used around stationary noise-generating equipment (e.g., concrete mixers, generators, compressors). • Heavy-duty equipment shall be operated at the lowest operating power possible. • Temporary noise curtains shall be installed as close as possible to the noise-generating activity such that the curtains obstruct the direct line of sight between the noise-generating construction/decommissioning activity and the nearby sensitive receptors. Temporary noise curtains shall consist of durable, flexible composite material featuring a noise barrier layer bounded to sound-absorptive material on one side. The noise barrier layer shall consist of rugged, impervious, material with a surface weight of at least one pound per square foot.	
IMPACT: CONSTRUCTION VIBRATION The use of off-road heavy-duty construction equipment as well as other construction equipment (e.g., impact pile driver) can result in temporary ground vibration, depending on the type of equipment used and the type of construction activities occurring. At the lowest levels, vibration from construction activity can result in a detectable low rumbling sounds and, at its loudest levels, can result in annoyance and sleep disturbance. Typically, during construction activity, the highest vibration levels are generated from the use of pile drivers.	PS	NOI-2. Develop and implement a vibration control plan. This mitigation measure would apply to construction activity involving pile-driving activities located within 100 feet of any building, to reduce the potential for structural damage, and within 550 feet of an occupied residence/building, to minimize disturbance from pile-driving activities. A vibration control plan shall be developed by the project applicant and his/her construction contractors to be submitted to and approved by Sacramento County before issuance of any Improvement Plans or Grading Permits for the project. The plan shall consider all potential vibration-inducing activities that would occur within the distance parameters described above and include various measures, setback distances, precautions, monitoring programs, and alternative methods to traditional pile-driving activities with the potential to result in structural damage or excessive noise. The following vibration control measures (or other equally effective measures approved by the County) shall be included in the plan:	LTS

		• To prevent structural damage, minimum setback requirements for different types of ground vibration-producing activities (e.g., pile driving) for the purpose of preventing damage to nearby structures shall be established based on the proposed pile-driving activities and locations, once determined. Factors to be considered include the specific nature of the vibration producing activity (e.g., type and duration of pile driving), local soil conditions, and the fragility/resiliency of the nearby structures. Established setback requirements (i.e., 100 feet) can be breached if a project-specific, site specific analysis is conducted by a qualified geotechnical engineer or ground vibration specialist that indicates that no structural damage would occur at nearby buildings or structures. • To prevent disturbance to sensitive land uses, minimum setback requirements for different types of ground vibration producing activities (e.g., pile driving) shall be established based on the proposed pile-driving activities and locations, once determined. Established setback requirements (i.e., 550 feet) can be breached only if a project-specific, site-specific, technically adequate ground vibration study indicates that the buildings would not be exposed to ground vibration levels in excess of 72 VdB, and ground vibration measurements performed during the construction activity confirm that the buildings are not being exposed to levels in excess of 72 VdB. • All vibration-inducing activity within the distance parameters described above shall be monitored and documented for ground vibration noise and vibration noise levels at the nearest sensitive land use and associated recorded data submitted to Sacramento County so as not to exceed the recommended FTA and Caltrans levels. • Alternatives to traditional pile driving (e.g., sonic pile driving, jetting, cast-in-place or auger cast piles, non-displacement piles, pile cushioning, torque or hydraulic piles) shall be considered and implemented where	

		feasible to reduce vibration levels. • Limit pile-driving activities to the daytime hours between 6:00 a.m. and 8:00 p.m. Monday through Friday and between 8:00 a.m. and 8:00 p.m. Saturday and Sunday. • Predrill pile holes to the maximum feasible depth to reduce the number of blows required to seat a pile. • Operate all vibration inducing impact equipment as far away from vibration-sensitive sites as reasonably possible from nearby structures. • Phase pile-driving and high-impact activities so as not to occur simultaneously with other construction activities, to the extent feasible. The total vibration level produced could be significantly less when each vibration source is operated at separate times.	
IMPACT: OPERATIONAL TRAFFIC NOISE Project generated traffic volume increases would generate noise levels above the Sacramento County's transportation noise threshold of 65 dB along several roadway segments. Land uses along Jackson Road segments in Sacramento County that would experience increases in traffic noise are designated Agricultural and are not considered noise sensitive uses. Land uses along Zinfandel Drive segments in the City of Rancho Cordova are zoned as Office Professional Mixed Use (OPMU), Commercial/Main Street District (CM-S), Retail Commercial (RC), Business Professional (BP0), and Low-Density Residential (LD) zoning designations. Only LD is considered a noise sensitive land use, and the presence of a 10-foot high sound wall would alleviate any increases in traffic noise generated by the Mather South Project.	LTS	No mitigation required.	N/A
IMPACT: EXPOSURE OF EXISTING SENSITIVE RECEPTORS TO NEW STATIONARY NOISE SOURCES This issue area evaluates non-transportation noise sources that would occur because of project operation, such as noise	LTS	No mitigation required.	N/A

generated from mechanical equipment. The Mather South Project land uses that would be located adjacent to the existing Anatolia Village neighborhood within the City of Rancho Cordova would include residential, public, and a park. Typically, noise sources associated with residential land uses include heating, cooling, and air conditioning (HVAC) units, lawn mowers and landscaping maintenance equipment. These types of mechanical equipment are typical of residential neighborhoods and would be compatible with Anatolia Village.			
IMPACT: EXPOSURE OF NEW SENSITIVE RECEPTORS TO EXISTING AND NEW STATIONARY NOISE SOURCES Implementation of the Mather South Project would result in the development of new land uses which would include new stationary noise sources and which may affect new sensitive receptors. Stationary mechanical equipment such as emergency generators, heating, cooling, and air conditioning (HVAC) units would be included in various land uses within the project site (e.g. commercial, residential). Vehicular and human activity in parking lots, commercial activity at loading docks at retail locations and utility infrastructure, particularly electrical transmission lines and substations would generate noise with the potential to cause disturbance to new sensitive receptors. The Mather South Project's land use plan has the potential for new sensitive receptors to be located adjacent to the above mentioned stationary noise sources and has the potential to cause disturbance to new sensitive receptors, resulting in exceedance of Sacramento County Non-Transportation Noise Standards.	PS	NOI-3. Conduct site-specific noise study and implement recommendations. To prevent future sensitive receptors from disturbance during the sensitive times of the day, project applicants of a residential land use or a structure containing residential units shall, before the issuance of building permits, provide to the County a site-specific noise study prepared by a qualified acoustical engineer addressing interior noise levels in residential units. The noise study shall consider the types of land uses being proposed in the same building or in the vicinity as the residential units in a mixed-use structure and existing noise sources adjacent to the proposed structure. The noise study shall confirm, using approved calculation methodologies, that building design and materials are sufficient to maintain exterior noise levels of 55 L50 and 75 L_{max} during the daytime and 50 L50 and 70 Lmax during the nighttime and an interior noise level of (L50) of 35 and maximum (Lmax) of 55 dB L_{dn} /CNEL, with windows closed, in residential units given the reasonably foreseeable noise generation sources within the building, and existing noise sources adjacent to the building. If the study shows such standards would not be met with the design as proposed, the project applicants shall implement recommendations of the study that are shown to achieve the standards. NOI-4. Reduce noise exposure to existing sensitive receptors from proposed stationary noise sources in non-residential land uses. The siting of new stationary sources in non-residential land uses shall first consider providing adequate distance	SU

		between the noise source and residential land uses. Siting distance recommendations for each source type are provided below. • New loading dock or commercial delivery sources shall be located a minimum of 1,600 feet from existing residential land uses. • New HVAC units shall be located a minimum of 500 feet from existing residential land uses. • New mechanical generators shall be located a minimum of 640 feet from existing residential land uses. • New overhead transmissions lines and substations shall be located a minimum of 16 feet from existing residential land uses. If the above siting requirements cannot be achieved because of specific building locations or other site-specific constraints, the following measures shall be required for future development applications including stationary sources. • Routine testing and preventive maintenance of emergency electrical generators shall be conducted during the less sensitive daytime hours (i.e., 6:00 a.m. to 8:00 p.m.), per the Sacramento County Noise Ordinance. All electrical generators shall be equipped with noise control (e.g., muffler) devices in accordance with manufacturers' specifications. • External mechanical equipment, including HVAC units, associated with buildings shall incorporate features designed to reduce noise emissions below the stationary noise source criteria. These features may include, but are not limited to, locating equipment within equipment rooms or enclosures that incorporate noise reduction features, such as acoustical louvers, and exhaust and intake silencers. Equipment enclosures shall be oriented so that major openings (i.e., intake louvers, exhaust) are directed away from nearby noise-sensitive receptors. In addition,	

		when locating HVAC units on buildings adjacent to residential land uses, HVAC units shall not be located directly adjacent to windows of residential units. HVAC locations shall be chosen to minimize noise at nearby residential land uses. • Loading docks shall be located and designed so that noise emissions do not exceed the stationary noise source criteria established in this analysis (i.e., exterior daytime [6:00 a.m. to 8:00 p.m.] standards of 55 dB L_{eq}/70 dB Lmax and the exterior nighttime [8:00 p.m. to 6:00 a.m.] standards of 50 dB L_{eq} /70 dB Lmax) at any existing sensitive receptor. At the time of conformity review application submittal for discretionary entitlement, the project applicant shall provide to the County a specialized noise study to evaluate specific design and ensure compliance with Sacramento County noise standards. Reduction of loading dock noise can be achieved by locating loading docks as far away as possible from noise sensitive land uses, constructing noise barriers between loading docks and noise-sensitive land uses, or using buildings and topographic features to provide acoustic shielding for noise-sensitive land uses. Final design, location, and orientation shall be dictated by findings in the noise study, if applicable. • Parking lots and structures shall be located and designed so that noise emissions do not exceed the stationary noise source criteria identified in this analysis (i.e., exterior daytime [6:00 a.m. to 8:00 p.m.] standards of 55 dB L_{eq}/70 dB Lmax and the exterior nighttime [8:00 p.m. to 6:00 a.m.] standards of 50 dB L_{eq} /70 dB Lmax) at any existing sensitive receptor. At the time of conformity review application submittal for discretionary entitlement, the project applicant shall provide to the County a specialized noise study to evaluate specific design and ensure compliance with Sacramento County noise standards. Reduction of parking lot noise can be achieved by locating parking lots away from noise sensitive land uses, constructing noise barriers between parking lots/structures and noise-sensitive land uses, incorporating noise barriers into parking structure designs	

		(e.g., providing solid walls around the top levels of parking structures), or using buildings and topographic features to provide acoustic shielding for noise-sensitive land uses. Final design, location, and orientation shall be dictated by findings in the noise study, if applicable.	
IMPACT: SUBSTANTIAL INCREASE IN THE EXISTING AMBIENT NOISE LEVELS New land uses to be developed as part of the Mather South Project, specifically commercial/retail land uses, would result in the siting of new noise sources associated with stationary equipment as part of building operations as well as new commercial activities areas (i.e. loading docks). Project land uses which result in new vehicle trip generation would contribute to traffic volume increases along roadways in and around the Plan Area and increase traffic related noise levels in the surrounding area. Based on the traffic noise modeling conducted, several affected roadway segments and their adjacent land uses outside of the Plan Area would experience substantial increases in ambient noise levels, including portions of Eagles Nest Road, Kiefer Boulevard, and Zinfandel Drive. Generally, land uses along the affected roadway segments are not designated as noise sensitive uses, however, there are several existing single-family homes along Eagles Nest Road that would likely experience a perceptible increase in traffic noise.	PS	NOI-5. Install Outdoor Sound Barriers at residential land uses along Eagles Nest Road between Kiefer Boulevard and Jackson Road to reduce increases in Traffic Noise Levels. • To offset the increase in noise levels from traffic volume increase along Eagles Nest Road, the project applicant shall offer the owners of residences along Eagles Nest Road the construction of a sound barrier (e.g., sound wall, berm) to reduce exterior traffic noise levels on the property. The project applicant shall offer the owners of all the residences with addresses along this roadway segment the installation of a sound barrier along the property line of their affected residential properties. The sound barriers must be constructed of solid material (e.g., wood, brick, adobe, an earthen berm, or combination thereof) and designed to ensure that the incremental increase in traffic noise is less than 5 dB L_{dn}. All barriers shall blend into the overall landscape and have an aesthetically pleasing appearance that agrees with the color and rural character of the houses and the general area, and not become the dominant visual element of the community. Relocation of the driveway at each residence may be necessary to preclude having gaps in the sound barrier. Relocation of landscaping may also be necessary to achieve an aesthetically pleasing appearance. The owners of the affected properties may choose to refuse this offer; however, the offer shall be made available to subsequent owners of the property if change of ownership occurs before project construction is complete. If an existing owner refuses these measures, a deed notice must be included with any future sale of the property to comply with California state real estate law, which requires that sellers of real property disclose “any fact materially affecting the value and desirability of the property” (California Civil Code, Section 1102.1[a]) and	SU

		shall indicate that the project applicant agrees to install a sound barrier, as described above. To ensure compliance with applicable noise standards, a site-specific noise study shall be conducted by the project applicant or one of its approved consultants to determine specific noise barrier design. The project applicant shall also be responsible for removal of these sound barriers at the end of project construction. NOI-6. Use rubberized hot-mix asphalt for the road widening project along Eagles Nest Road. • Paving the nearby segment of roadway with rubberized hot-mix asphalt (RHMA) or equivalent surface treatment with known noise-reducing properties on top of the roadway surface. The RHMA overlay shall be designed with appropriate thickness and rubber component quantity (typically 15 percent by weight of the total blend), such that traffic noise levels are reduced by an average of 4 to 6 dB (noise levels vary depending on travel speeds, meteorological conditions, and pavement quality) as compared to noise levels generated by vehicle traffic traveling on standard asphalt. RHMA has been found to achieve this level of noise reduction in other parts of California (Sacramento County 1999). Pavement will require more frequent than normal maintenance and repair to maintain its noise attenuation effectiveness.	
CUMULATIVE NOISE IMPACT: TRAFFIC NOISE The projects listed in the Cumulative Settings section above are anticipated to contribute to cumulative traffic volume increases within Sacramento County and would result in subsequent increases in traffic noise levels along affected roadways. Specifically, the New Bridge, Jackson Township and Jackson Highway master and specific plans are anticipated to be developed near the Plan Area. Because of the buildout of these plans as well as other cumulative development in the County, vehicular traffic volumes would increase and result in a cumulative increase in traffic noise levels along affected	PS	CU-NOI-1 Use rubberized hot-mix asphalt for all offsite road widening projects implemented as part of the Mather South, NewBridge, Jackson Township or West Jackson plans. • Projects are required to pave offsite segments of roadway with rubberized hot-mix asphalt (RHMA) or equivalent surface treatment with known noise-reducing properties on top of the roadway surface. The RHMA overlay shall be designed with appropriate thickness and rubber component quantity (typically 15 percent by weight of the total blend), such that traffic noise levels are reduced by an average of 4 to 6 dB (noise levels	SU

roadways. For a scenario in which all cumulative projects aside from the Mather South Project were developed and noise sensitive land uses were built along Kiefer Boulevard between Douglas Road and Sunrise Boulevard as part of the New Bridge Specific Plan and Jackson Highway Specific Plan, development of the Mather South Project's cumulative contribution to traffic volumes would increase traffic noise levels above applicable incremental increase threshold of 1.5 dB established in Table NO-2. Thus, a cumulative impact regarding long-term traffic exists and the cumulative plus project would result in additional substantial (i.e., 1.5 dB) increases in traffic noise levels.		vary depending on travel speeds, meteorological conditions, and pavement quality) as compared to noise levels generated by vehicle traffic traveling on standard asphalt. RHMA has been found to achieve this level of noise reduction in other parts of California (Sacramento County 1999). Pavement will require more frequent than normal maintenance and repair to maintain its noise attenuation effectiveness.	
Public Services			
IMPACT: FIRE PROTECTION AND EMERGENCY SERVICES The Mather South Project would increase the demand for fire protection and emergency services provided by Metro Fire. The project includes 3,522 new dwelling units, commercial, retail, and civic uses. Utilizing the County's estimate of 2.64 persons per dwelling unit, the Mather South Project would increase the population of the Jackson Road corridor area by approximately 9,298 residents (i.e., 3,522 du x 2.64 persons). This increase in demand would require additional staff and fire facilities to maintain service levels and to ensure that adequate fire protection is provided. Metro Fire has indicated that the Mather South Project would trigger the need for a new fire station within the Plan Area. As a result, the project has included a new fire station site within the site plan, which is located along Gateway North Drive near Zinfandel Drive within a residential parcel (R1). The exact location and size of the parcel will be finalized when the land is dedicated; however, it would be required to meet Metro Fire location requirements for new fire stations and be approved by the agency.	LTS	No mitigation required.	N/A
IMPACT: LAW ENFORCEMENT SERVICES The Mather South Project includes a maximum of 3,522 residential units which would provide housing for a residential population of approximately 9,298 residents, as well as	LTS	No mitigation required.	N/A

associated non-residential uses, including commercial, retail, and civic uses which would increase the demand for law enforcement services to be provided by SSD. SSD has substations located throughout the unincorporated county, including the closest one, Kilgore Station East Division located approximately 3.5 miles north in Rancho Cordova at 2897 Kilgore Road. SSD has indicated that the existing substation can accommodate new staffing and equipment that may be needed to serve the growth associated with the Mather South Project. The project would provide funding in the form of development impact fees and ongoing property taxes that would provide funding for additional staffing and equipment needed to maintain and improve service levels for law enforcement within the Mather South Plan Area and the surrounding areas.			
IMPACT: SCHOOL SERVICES The Mather South Project is within the service area of the EGUSD. Development of the project would result in increases to the local student population. The project includes two elementary school sites within the Plan Area, each 10-12 acres in size, which would accommodate all of the potential elementary school students generated by the project, as well as students from other nearby areas. However, the project would increase demand for middle and high school capacity in a school district that is already considered over capacity. California Government Code Section 65995(h) states that the payment or satisfaction of a fee, charge, or other requirement levied or imposed pursuant to Section 17620 of the Education Code is deemed to be full and complete mitigation of the impacts for the planning, use, development, or the provisions of adequate school facilities. Section 65996(b) finds that these provisions provide full and complete school facilities mitigation. The Mather South Project would pay all fees related to school facilities consistent with SB50 and Government Code.	LTS	No mitigation required.	N/A
IMPACT: PARKS AND RECREATION SERVICES The County Land Development Ordinance (Title 22 of Sacramento County Code) requires new residential developments to dedicate land, pay a fee in lieu thereof, or	LTS	No mitigation required.	N/A

provide a combination of dedication and in-lieu fees for park facilities consistent with Quimby Act requirements. The Quimby Act and the Sacramento County General Plan require 3-5 acres of parkland per 1,000 residents. The Mather South Project includes four neighborhood parks and one community park which are distributed throughout the Plan Area. The total proposed acreage of neighborhood parks would be 21.55 acres, with each ranging in size from 4.55 acres to 7.03 acres. The project also includes the construction of a 22.28-acre community park. Therefore, the total proposed park acreage within the Plan Area would be 44.03 acres. This would result in a shortfall of 1.43 acres of active parkland which is addressed in the Mather South Community Master Plan policy 5-7 and would be made up by adjusting Park 1 in Phase 1 or by dedicating in-lieu fees consistent with Title 22 of the Sacramento County Code.			
IMPACT: LIBRARY SERVICES Residents of the Mather South Project would increase the demand for library services provided by the Sacramento Public Library Authority. The Mather South Plan Area is located within the Rancho Cordova/Sunrise Douglas Service Area. The Sacramento Public Library Authority Facility Master Plan 2007 – 2025 (Library Master Plan) addresses future library needs based upon an evaluation of anticipated growth by service area. The Library Plan calls for three to four new libraries within the vicinity of the Plan Area to accommodate projected growth, including the Mather South Project, by 2025.	LTS	No mitigation required.	N/A
Public Utilities			
IMPACT: WASTEWATER TREATMENT AND DISPOSAL The project would require new infrastructure in order to provide wastewater service to the new land uses within the Plan Area. The project would connect to the planned sewer line extension along Zinfandel Drive and extend lines to Kiefer Boulevard. The backbone collection system within the Plan Area would include the construction of 8-inch, 10-inch, 12-inch, and 15-inch sanitary sewer collection lines within proposed street right-of-way. No offsite collection lines are proposed. Wastewater	LTS	No mitigation required.	N/A

would be routed to the SRWTP which has capacity to treat the estimated 1.23 mgd that the project would produce. A Level 1 sewer study for the Mather South project has been approved by Sacramento Area Sewer District, and a more detailed sewer study for the Plan Area would be prepared when subsequent tentative map applications are submitted for the project.			
IMPACT: SOLID WASTE SERVICES AND CAPACITY The Mather South Project would allow for the construction of 3,522 residential units, approximately 800,000 square feet of commercial and office uses, and two elementary schools. Development of the project would result in an increased demand for solid waste services. The Mather South Plan area would be served by the Sacramento County Department of Waste Management and Recycling, which provides solid waste services to unincorporated areas of Sacramento County. Sacramento County owns and operates the Kiefer Landfill, located at Kiefer Boulevard and Grant Line Road, which is the primary municipal solid waste disposal facility in Sacramento County. The Kiefer Landfill facility would receive an estimated 9,855 tons of annual waste from the project's buildout. Cal Recycle's website indicates that the landfill's permitted capacity is approximately 117 million cubic yards and has a remaining capacity of approximately 113 million cubic yards.	LTS	No mitigation required.	N/A
Traffic and Transportation			
IMPACT: IMPACTS TO ROADWAY SEGMENT OPERATIONS The traffic analysis assumed that the Mather South Project would construct travel lanes on roadway segments that are internal to or on the boundary of the Mather South project, which would be greater than the number of lanes in the existing condition. This is a required condition of approval for all the Jackson Corridor projects. The construction of the additional traffic lanes on these internal or boundary roadway segments would affect whether impacts would exist at some point before full build out of the Mather South Project. To provide consistency in the assumptions of development and the analysis of impacts, the County has required all Jackson Corridor projects to construct additional travel lanes on internal	~~P~~S	TR-1. Jackson Corridor Transportation Mitigation Strategy Participation The project applicants shall participate in the implementation of the Jackson Corridor Transportation Mitigation Strategy **as approved by the Board of Supervisors on July 23, 2019** by constructing or providing funding for its fair share of transportation improvements identified in the master list of cumulative improvements **(see Appendix TR-1)**. The applicants shall enter into an agreement at the time of project approval to use Dynamic Implementation Tool (Tool) to identify improvements for each phase of the project. The applicant shall also agree that required improvements will be constructed concurrent	SU

and border travel roads. Considering this consistent development assumption, as shown in Table TR-18, the addition of vehicle trips generated by project buildout would result in the exceedance of applicable LOS and V/C thresholds along six roadway segments.		with each ~~phase~~**development increment**. ~~For projects or phases with less than 50 dwelling unit equivalents (DUEs), at the discretion of the Director of the SacDOT, specific improvements may not be required to be constructed, but instead collected fair-share mitigation revenue shall be allowed to accrue in the mitigation budget that the County would manage to address unforeseen capacity and operations issues. For projects or phases with 50 DUEs or more, the project applicant may have the option to advance fund mitigation improvements for each phase of development or portions thereof, as identified by the Tool. Advanced funding could be provided through the creation of a Community Facilities District (CFD) or similar financial mechanism, through a cash contribution upfront, and/or through the construction of the required improvements.~~ TR-2. Use of Dynamic Implementation Tool The applicant shall at the time of project approval s~~hall enter into an agreement acknowledging~~**acknowledge** that the project-specific list of improvements specified in Mitigation Measure TR-1 may be modified over time through the use of the Tool at each phase of project development, subject to the approval of the SacDOT. As development proceeds, the Tool will be used to select which improvements the project would be required to fair-share fund and/or construct ~~if its previously assigned improvement or improvements have already been constructed by another project~~ **as described in the Jackson Corridor Transportation Mitigation Strategy adopted by the Board of Supervisors on July 23, 2019**. ~~TR-3~~. Roadway Segment Mitigation **The project applicant shall implement Mitigation Measures TR-1 and TR-2.** ~~The project applicant shall implement the set of improvements assigned to the project by the Tool (Mitigation Measure TR-1) as identified in Table TR-19. Detailed intersection operations calculations and the full list of study area intersection operating conditions are included in~~	

		~~Appendix TR-1. Where feasible, the number of roadway lanes was increased to mitigate the impact. However, the roadways cannot be widened such that they exceed the maximum General Plan standards and designations of the appropriate jurisdictions. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate roadways widened as part of mitigation, which would be the responsibility of the Mather South project to implement. The shaded table cells under the "Level of Service" heading indicate those locations that would continue exceed applicable LOS standards after mitigation. The "LOS Impact with Mitigation" column shows whether a mitigation measure successfully mitigates the impact or not. However, it cannot be guaranteed that all of these improvements would be implemented concurrent with the phasing of development proposed for the Mather South Project because of the dynamic and interrelated nature of mitigation improvements that would serve multiple development projects. If all improvements were implemented in a timely way, all impacts would be reduced to a less-than-significant level. However, because the timing of implementation of all required improvements cannot be guaranteed and is not subject to the sole responsibility of just Mather South applicants and the County, it cannot be guaranteed that significant impacts will be reduced to less than significant at the time of phased development.~~	
IMPACT: IMPACTS TO INTERSECTION OPERATIONS Signal warrant analysis was also conducted for all unsignalized intersections along Jackson Road, and other unsignalized intersections near the project. Detailed signal warrant calculation sheets are included in Appendix TR-1. With implementation of the Mather South Project, the following unsignalized intersections would experience traffic volumes resulting in one or more traffic signal warrants being met: • Woodring Drive and Zinfandel Drive • Happy Lane and Old Placerville Road	~~P~~S	~~TR-4.~~ Intersection Operations Impacts • The project applicant shall implement Mitigation Measures TR-1 and TR-2. • ~~The project applicant shall implement the set of improvements assigned to the project by the Tool (Mitigation Measure TR-1) as identified in Table TR-21 and TR-22. Detailed intersection operations calculations and the full list of study area intersection operating conditions are included in Appendix TR-1. Where feasible, the number of roadway lanes was increased to mitigate the impact. In locations where the LOS impact could not be mitigated by implementing the County's standard number of approach lanes, the County has~~	SU

• Eagles Nest Road and Jackson Road As shown in Table TR-17, the addition of vehicle trips generated by project buildout would result in the exceedance of applicable LOS and delay thresholds.		~~proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These generally include providing additional turn lanes, carrying an additional through lane past the intersection, or designating the intersection as a High Capacity Intersection.~~	
IMPACT: FREEWAY FACILITY IMPACTS FREEWAY MERGE / DIVERGE / WEAVE SEGMENTS Table TR-25 summarizes a.m. and p.m. peak hour freeway operations at merge/diverge/weave segments. Detailed merge/diverge/weave data and analysis is included in Appendix TR-1. Due to the addition of project-related traffic to the freeway network, the following location would experience merge / diverge LOS worse than the freeway's LOS: • Westbound Watt Avenue to Howe Avenue weave - p.m. peak hour	~~P~~S	TR-~~5~~**3**. Freeway ~~Capacity~~ Improvements • ~~The project applicant shall implement Mitigation Measures TR-1 and TR-2. No other feasible mitigation is available.~~ • ~~To minimize to westbound US 50 weave between Watt Avenue and Howe Avenue, the project applicants shall pay their fair share contribution toward the construction of one or more of the following improvements. At the time of issuance of building permits, SacDOT and the County Special Districts group will coordinate with Caltrans to identify the project-applicant's appropriate fair share contributions.:~~ • ~~Bus/HOV lanes from Watt Avenue to Downtown Sacramento (2035 SACOG MTP). The bus/HOV lanes from Watt Avenue to Downtown Sacramento are programmed and the project is anticipated to be completed by 2030.~~ • ~~Replacement of existing communication lines with fiber optics to improve performance between SR-51/SR-99 and Watt Avenue (2013 10-Year SHOPP Plan).~~ • ~~Auxiliary lane between the NB Howe Avenue on-ramp and the SB Howe Avenue onramp (2035 SACOG MTP). The auxiliary lane between the NB Howe Avenue on-ramp and the SB Howe Avenue onramp is planned and completion of the project is anticipated after 2036.~~ • ~~Ramp meter improvements (Caltrans ITS/OPS~~	SU

		~~Project List).~~ • **To alleviate the impacts of the Jackson Corridor Developments, the Sacramento County Department of Transportation has consulted with Caltrans and they have identified the following improvements. The applicant shall provide a fair share contribution toward Caltrans' freeway facilities to the satisfaction of the Sacramento County Department of Transportation and Caltrans:** o **Pay fair share toward the future conversion of HOV lanes to Toll Lanes or a Reversible Lane along U.S. Highway 50 from I-5 to Watt Avenue.** o **Pay fair share toward the U.S. Highway 50 Integrated Corridor Management for the deployment of various Intelligent Transportation System improvements along U.S. Highway 50 and the City of Rancho Cordova, and regionally significant corridors in Sacramento County and the City of Folsom for incident management (non-capacity increasing) [Caltrans ID SAC25113].** ~~Capacity improvements such as widening of the freeway and freeway junctions would reduce the severity of the impacts but were considered infeasible due to right-of-way restrictions, legal and jurisdictional constraints, and potential economic infeasibility. Potential alternative improvements have been identified from Caltrans' US 50 Transportation Concept Report (TCR) and Corridor System Management Plan (CSMP). The TCR and CSMP is focused on intelligent transportation systems (ITS) and integrated corridor management (ICM) projects. ITS is the application of technology to ground transportation to improve safety, mobility and efficiency. ICM projects focus on the management of corridors as a multimodal system and make operational decisions for the benefit of the corridor as a whole. ITS and ICM projects would have operational benefits to US 50 without adding additional capacity. The TCR and CSMP also identify potential improvements to parallel local facilities that would be expected to reduce~~	

		~~travel demand on US 50.~~	
IMPACT: BICYCLE AND PEDESTRIAN IMPACTS The Mather South Project would not remove any existing or planned bicycle or pedestrian facilities. Additionally, the Mather South Project would include the provision of new bicycle and pedestrian facilities throughout the Mather South Plan Area, and between the project site and other nearby land uses. As detailed in the Project Transportation Improvements section and Plate TR-12, the Mather South Project would provide sidewalks and on-street (Class II) bike lanes on all collector, arterial and thoroughfare roadways. The project also provides several off-street (Class I) multi-purpose trails. Sidewalks would be required as part of the frontage improvements along all new roadway construction in the Mather South Project vicinity in conformance with County design standards. However, because the design of facilities is unknown, they could potentially result in an increase in pedestrian/bicycle-vehicle conflict points; and thus, could result in a degradation of bicycle and pedestrian safety.	PS	TR-~~6~~**4**. Bicycle and Pedestrian **System Implementation** ~~Improvements~~ **Future development within the Mather South Community Master Plan (MSCMP) shall implement the proposed bicycle and pedestrian path/trail system as described in the Mather South Community Master Plan and Design Guidelines.** Before approval of any tentative map, the project applicants shall coordinate with Sacramento County to identify the necessary on- and offsite pedestrian and bicycle facilities to serve the individual project and which would ensure bicycle and pedestrian safety. These facilities **shall be incorporated into subsequent projects and** could include sidewalks, stop signs, standard pedestrian and school crossing warning signs, lane striping to provide a bicycle lane, bicycle parking, signs to identify pedestrian and bicycle paths, raised crosswalks, pedestrian signal heads, and all appropriate traffic calming measures as defined in the County's Neighborhood Traffic Management Program (NTMP). **Sidewalks would be required as part of the frontage improvements along all new roadway construction in the Project vicinity in conformance with County design standards. Circulation and access to all proposed public spaces shall include sidewalks that meet Americans with Disabilities Act Guidelines.** The proposed improvements would be constructed within the footprint of the overall project area and as such the construction-related environmental impacts of these improvements have been evaluated throughout this Draft EIR.	LTS
IMPACT: TRANSIT IMPACTS Public transit is not currently provided to, or in the vicinity of the Mather South Project site. As detailed in the Project Transportation Improvements section, a conceptual transit system to serve the Jackson Corridor Projects (including the Mather South Project) was developed by Sacramento County, SacRT, DKS Associates, and the applicants of the Jackson	~~PS~~**LTS**	TR-~~7~~**5**. Transit Improvements The project applicant shall coordinate with Sacramento County and Sacramento Regional Transit District (or other transit operators) to provide the additional transit facilities and services assumed in the transportation analysis, or a cost-effective equivalent level of transit facilities and services. Ultimate transit service consists of 15- minute	~~LTS~~**~~N/A~~**

Corridor Projects as part of a joint transit planning process. The proposed transit system is a condition of approval for the project and was assumed as an attribute of the Mather South Project and included in the traffic modeling and analysis in the Joint TIS. The assumed transit routes and service frequency would be required at full development of the Mather South Project. The proposed transit system has been included as a condition of approval, included in the draft Development Agreement for the project, and must be phased with development of the Mather South Project. Additionally, as indicated in Policy 4.4-35 of the Community Master Plan, the Mather South Financing Plan would include a funding source to implement this transit service.		headways during peak hours and 30-minute headways during non-peak hours on weekdays. The implementation of the transit routes and service frequency must be phased with development of the project and the ultimate service will be required at full buildout. **This shall be accomplished through the annexation to County Service Area 10 or formation of a transportation services district. Such annexation or formation shall occur prior to recordation of any final small lot subdivision map for the project.**	
IMPACT: ROADWAY FUNCTIONALITY IMPACTS Table TR-26 summarizes the results of the rural roadway segment functionality analysis. This table includes the number of lanes assumed with the implementation of the Mather South Project, which in many cases is greater than the number of lanes in the existing condition. The "Substandard" heading indicates whether a roadway meets the County standards requiring12-foot wide travel lanes with 6-foot wide shoulders. If the project makes improvements to a roadway segment such as widening, it would be required to reconstruct the entire substandard roadway segment to County standards. The shaded table cells under the "Functionality Impact" heading indicate those locations with a functionality impact. The traffic analysis assumed that the Mather South Project would construct several travel lanes on roadway segments that are internal to, or on the boundary of the Mather South Project, and the entire roadway segment would be reconstructed to County standards. The timing of implementation of these additional traffic lanes on these internal or boundary roadway segments would affect whether or not impacts would occur as some point before full build out of the Mather South Project. As shown in Table TR-26, implementation of the project would result in functionality impacts along 12 roadway segments	~~P~~S	TR-8**6**. Roadway Functionality Improvements The project applicant shall implement Mitigation Measure TR-1 and TR-2. The applicant shall consult with the County on the timing needs of proposed improvements and shall either submit their fair share payment and/or enter into an agreement to construct the assigned improvements. Improvements projected to be required based on the status of current development in the area is summarized in Table TR-27. As development in the area is approved and proceeds to construction, the timing or assignment of specific traffic improvements may change but would nonetheless be assigned to each project based on their fair-share contribution to the overall area impacts. As shown in Table TR-27 proposed improvements include widening the deficient rural roadway segments to County standards Table TR-27 summarizes the proposed improvements of widening the deficient rural roadway segments to County standards, and the resultant functionality analysis for these roadway segments with these improvements implemented.	SU

within the project study area.			
IMPACT: EMERGENCY ACCESS AND HAZARDOUS DESIGN FEATURE IMPACTS The Mather South Project would provide new roadway connections which would provide for improved emergency access and connections within the project area; and thus, would not interfere with emergency response. Additionally, the project would not modify the existing roadway network such that emergency access along existing roadways would be impaired.	LTS	No mitigation required.	N/A
CUMULATIVE PLUS FOUR PROJECTS IMPACTS			
IMPACT: CUMULATIVE ROADWAY SEGMENT OPERATIONS Table CU-7 shows the operations analysis for the traffic study area roadway segments which would experience significant impacts under the Cumulative Plus Jackson Corridor Projects scenario. The table includes the new roadways and/or widened roadways, the project(s) responsible for the roadway improvements, and the roadway segments where a LOS impact occurs. Plate CU-8 illustrates the resultant traffic operating conditions associated with the Cumulative Plus Jackson Corridor Projects scenario. Detailed roadway segment operations calculations and the full list of study area roadway segment operating conditions are included in Appendix TR-1. As shown in Table CU-7, the addition of vehicle trips generated by the Jackson Corridor Projects would result in the exceedance of applicable LOS and V/C thresholds along 69 roadway segments in the study area.	~~P~~S	CU-TR-1. The project applicant shall implement Mitigation Measures TR-1 and TR-2. The project applicant shall implement the set of improvements assigned to the project by the Tool (Mitigation Measure TR-1) as identified in Table CU-8. Detailed intersection operations calculations and the full list of study area intersection operating conditions are included in Appendix TR-1. Where feasible, the number of roadway lanes was increased to mitigate the impact. However, the roadways cannot be widened such that they exceed the maximum General Plan standards and designations of the appropriate jurisdictions. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate roadways widened as part of mitigation, which would be the responsibility of the Mather South project to implement. The shaded table cells under the "Level of Service" heading indicate those locations that would continue to operate unacceptably after mitigation. The table also includes the constraint that precluded full mitigation of the LOS impact. In several locations where the improvements allowed under the general plan would not mitigate an LOS impact, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These alternative mitigation measures would either fully mitigate the impact or substantially reduce the level of impact. The shaded table cells under the "Level of Service" heading indicate those locations that would continue exceed applicable LOS	SU

		standards after mitigation. The "LOS Impact with Mitigation" column shows whether a mitigation measure successfully mitigates the impact or not. A total of 45 of the 69 roadway segments would remain significant and unavoidable with implementation of mitigation.	
IMPACT: CUMULATIVE INTERSECTION OPERATIONS Table CU-9 and Table CU-10 summarize the results of the operations analysis for the study area intersections under the Cumulative Plus Jackson Corridor Project scenario. The tables include the implementation of intersection changes associated with the Jackson Corridor Projects. Table CU-10 illustrates the type of traffic control and number of lanes by type on each study area intersection approach. Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type would be fully funded by the project(s) shown in the last column. Shaded table cells in Table CU-9 illustrate those locations with a LOS impact. Plate CU-8 illustrates the resultant traffic operating conditions associated with the Cumulative Plus Jackson Corridor Projects scenario. Detailed intersection operations calculations and the full list of study area intersection operating conditions are included in Appendix TR-1. A signal warrant analysis was conducted for all unsignalized intersections along Jackson Road, and other unsignalized intersections in close proximity to the project. Detailed signal warrant calculation sheets are included in Appendix TR-1. The following unsignalized intersections would operate at unacceptable levels and meet one or more traffic signal warrant under the Cumulative Plus Jackson Corridor Projects conditions: • Happy Lane and Old Placerville Road • Eagles Nest Road and Florin Road As shown in Table CU-9, the addition of vehicle trips generated by Jackson Corridor Projects would result in the exceedance of applicable LOS and delay thresholds under Cumulative Plus	~~P~~S	CU-TR-2. Cumulative Intersection Operations. The project applicant shall implement Mitigation Measures TR-1 and TR-2. The project applicant shall implement the set of improvements assigned to the project by the Tool (Mitigation Measure TR-1) as identified in Table CU-11a and Table CU-12a. Table CU-11a and Table CU-12a summarize recommended mitigation and the results of the operations analysis for the traffic study area intersections with mitigation, which does not exceed the County's standard number of approach lanes, under the Cumulative Plus Jackson Corridor Projects scenario. Table CU-11b and Table CU-12b summarize recommended mitigation and the results of the operations analysis for the traffic study area intersections with ultimate mitigation, which may exceed the County's standard number of approach lanes, under the Cumulative Plus Jackson Corridor Projects scenario. Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type have been made to mitigate impacts, which would be the responsibility of the Jackson Corridor Projects to fund. Table CU-12a and Table CU-12b also identify those intersections that would continue operate at unacceptable levels after mitigation, along with the constraint that precluded full mitigation. In locations where the LOS impact could not be mitigated by implementing the County's standard number of approach lanes, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These generally include providing additional turn lanes, carrying an additional through lane past the intersection, or designating the intersection as a High Capacity Intersection. These alternative mitigation measures would either fully mitigate the impact or substantially reduce the level of impact. Detailed intersection operations calculations and the full list of study	SU

Jackson Corridor Project conditions.		area intersection operating conditions are included in Appendix TR-1. Additionally, detailed descriptions of the three "High Capacity Intersections" identified in Table CU-12b are provided in Appendix TR-1.	
IMPACT: CUMULATIVE FREEWAY FACILITY IMPACTS Table CU-14 summarizes a.m. and p.m. peak hour US 50 freeway mainline operations under the Cumulative Plus Jackson Corridor Project scenario. Detailed freeway mainline operations calculations are included in Appendix TR-1. The following freeway mainline location would experience unacceptable operating conditions with the addition of traffic generated by the Jackson Corridor Projects: • Eastbound • Stockton Boulevard to 59th Street - a.m. peak hour Due to the addition of traffic to freeway ramp intersections in the study area generated by the Jackson Corridor Projects, the following locations would experience queues that exceed the available storage capacity: • Eastbound • Exit ramp to Howe Avenue - right turn queue length exceeds available storage – a.m. peak hour • Exit ramp to Zinfandel Drive-right turn and through queue length exceeds available storage – a.m. peak hour • Westbound • Exit ramp to Rancho Cordova Parkway - left turn queue length exceeds available storage – a.m. and p.m. peak hours As shown in Table CU-17, with implementation of the Jackson Corridor Projects, the following merge/diverge/weave segment would experience merge / diverge LOS worse than the	~~P~~S	CU-TR-3. Cumulative Freeway Capacity Improvements. According to Caltrans' US-50 Transportation Concept Report (TCR) and Corridor System Management Plan (CSMP), all mainline freeway lanes of the 8-lane ultimate facility (4 lanes in each direction) have already been built, with the exception of the segment between Zinfandel Drive and Sunrise Boulevard (where 6 of the 8 ultimate lanes exist today). With the exception of this segment, capacity improvements to widen the freeway mainline are precluded by the ultimate configuration in the TCR/CSMP. The TCR/CSMP does conceptualize other projects that will benefit the US-50 corridor without adding additional mainline travel lanes. **To alleviate the impacts of the Jackson Corridor Developments, the Sacramento County Department of Transportation has consulted with Caltrans and they have identified the following improvements. The applicant shall provide a fair share contribution toward Caltrans' freeway facilities to the satisfaction of the Sacramento County Department of Transportation and Caltrans:** • **Pay fair share toward the future conversion of HOV lanes to Toll Lanes or a Reversible Lane along U.S. Highway 50 from I-5 to Watt Avenue.** • **Pay fair share toward the U.S. Highway 50 Integrated Corridor Management for the deployment of various Intelligent Transportation System improvements along U.S. Highway 50 and the City of Rancho Cordova, and regionally significant corridors in Sacramento County and the City of**	SU

freeway's LOS: • Westbound • Hazel Avenue to Rancho Cordova Parkway weave - a.m. peak hour		**Folsom for incident management (non-capacity increasing) [Caltrans ID SAC25113].** ~~Thus, to minimize the impact that the Jackson Corridor Projects would have on the westbound US-50 existing ramp to Rancho Cordova Parkway, at the time of issuance of building permits, SacDOT and the County Special Districts group shall coordinate with Caltrans to identify the appropriate fair share contribution that the project applicants shall pay toward the construction of one or more of the following alternative improvements:~~ ~~• Intelligent transportation systems (ITS) and integrated corridor management (ICM) projects. Some examples may include ramp metering and multimodal improvements.~~ ~~• Improvements to parallel local facilities. Such projects are expected to reduce travel demand on US-50.~~ ~~• Future HOV lanes and auxiliary lanes. These projects would extend, or bridge gaps in, the existing HOV and auxiliary lane network. Constructing these lanes is permissible even when further widening of the mainline is not allowable and is consistent with the ultimate configuration in the TCR/CSMP.~~ ~~To minimize the impact that the Jackson Corridor Projects would have on the US-50 mainline between Stockton Boulevard and 59th Street, at the time of issuance of building permits SacDOT and the County Special Districts group shall coordinate with Caltrans to identify the appropriate fair share contribution that the project applicants shall pay toward the construction of the following alternative improvement:~~ ~~• Ramp meter improvements (Caltrans ITS/OPS Project List)~~ ~~To minimize the impact that the Jackson Corridor Projects would have on the westbound US-50 weave between Hazel Avenue and Rancho Cordova Parkway, at the time of~~	

		~~issuance of building permits SacDOT and the County Special Districts group shall coordinate with Caltrans to identify the appropriate fair share contribution that the project applicants shall pay toward the construction of the following alternative improvement:~~ ~~• Multi-modal corridor improvements and interchange improvements at Hazel Avenue (2035 SACOG MTP)~~ ~~• Auxiliary lanes between Hazel Avenue and Rancho Cordova Parkway (2035 SACOG MTP)~~	
IMPACT: CUMULATIVE ROADWAY FUNCTIONALITY IMPACTS Table CU-18 summarizes the results of the rural roadway segment functionality analysis. This table includes the number of lanes assumed with the implementation of the Mather South Project, which in many cases is greater than the number of lanes in the existing condition. The "Substandard" heading indicates whether a roadway meets the County standards requiring12-foot wide travel lanes with 6-foot wide shoulders. If the project makes improvements to a roadway segment such as widening, it would be required to reconstruct the entire substandard roadway segment to County standards. The shaded table cells under the "Functionality Impact" heading indicate those locations with a functionality impact. Plate CU-9 depicts the location of the segments along which functionality impacts would occur.	~~P~~S	CU-TR-4. Cumulative Roadway Functionality Improvements The project applicant shall implement Mitigation Measure TR-1 and TR-2. This program would require that before the issuance of tentative maps, the County shall identify the appropriate fair share contribution that the project applicants shall pay toward the construction of the improvements summarized in Table CU-19. Proposed improvements include widening the deficient rural roadway segments shown in Table CU-19 to County standards. Table CU-19 summarizes the proposed improvements of widening the deficient rural roadway segments to County standards, and the resultant functionality analysis for these roadway segments with these improvements implemented.	SU
CUMULATIVE PLUS MATHER SOUTH PROJECT			
IMPACT: CUMULATIVE ROADWAY SEGMENT OPERATIONS CUMULATIVE PLUS MATHER SOUTH PROJECT Table CU-20 summarizes the results of the operations analysis for the traffic study area roadway segments under the Cumulative No Project and Cumulative Plus Jackson Corridor Projects conditions. The table includes the new roadways or widened roadways, the roadway improvements that would be the responsibility of the project, and the roadway segments	~~P~~S	CU-TR-5. Cumulative Roadway Segment Operations Cumulative Mather South Project The project applicant shall implement Mitigation Measure CU-TR-1 which requires the applicant to pay their appropriate fair share contribution toward the construction of the improvements summarized in Table CU-21. Table CU-21 summarizes the results of the operations analysis for the study area roadway segments with	SU

where a LOS impact occurs. Detailed roadway segment operations calculations and the full list of study area roadway segment operating conditions are included in Appendix TR-1. As shown in Table CU-20, the addition of vehicle trips generated by the Mather South Project would result in the exceedance of applicable LOS and V/C thresholds along four roadway segments in the study area.		mitigation under the Cumulative Plus Mather South Project scenario. Where feasible, the number of roadway lanes was increased to mitigate the impact. However, the increased number of lanes could not exceed the maximum General Plan designations of the appropriate jurisdictions. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate widened roadways for mitigation purposes, which would be the responsibility of the Jackson Corridor Projects to fund. The Mather South Project would contribute its fair share for these improvements. The shaded table cells under the "Level of Service" heading indicate those locations that would continue to operate unacceptably after mitigation. The table also includes the constraint that precluded full mitigation of the LOS impact. In several locations where the improvements allowed under the general plan would not mitigate an LOS impact, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These alternative mitigation measures will either fully mitigate the impact or substantially reduce the level of impact.	
IMPACT: CUMULATIVE INTERSECTION OPERATIONS CUMULATIVE MATHER SOUTH PROJECT Table CU-22 and Table CU-23 summarize the results of the operations analysis for the study area intersections under Cumulative Plus Mather South Project conditions. The tables include the implementation of intersection changes associated with the Mather South Project. Table CU-23 illustrates the type of traffic control and number of lanes by type on each study area intersection approach. Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type would be fully funded by the project(s) shown in the last column. Shaded table cells in Table CU-22 illustrate those locations with a LOS impact. Detailed intersection operations calculations and the full list of study area intersection operating conditions are included in Appendix TR-1. A signal warrant analysis was conducted for all unsignalized intersections along Jackson Road, and other unsignalized intersections in close proximity to the project. Detailed signal	~~P~~S	CU-TR-6. Cumulative Intersection Operations Cumulative Mather South Project The project applicant shall implement Mitigation Measure CU-TR-2. This mitigation will require the project applicant to contribute their appropriate fair share contribution toward the construction of the improvements summarized in Table CU-24a through Table CU-25b below. Table CU-24a and Table CU-25a summarize recommended mitigation and the results of the operations analysis for the traffic study area intersections with mitigation, which does not exceed the County's standard number of approach lanes, under the Cumulative Plus Mather South Project scenario. Table CU-24b and Table CU-25b summarize recommended mitigation and the results of the operations analysis for the traffic study area intersections with ultimate mitigation, which may exceed the County's standard number of approach lanes, under the Cumulative Plus Mather South Project scenario.	SU

warrant calculation sheets are included in Appendix TR-1. The following unsignalized intersection would operate at an unacceptable level and meet one or more traffic signal warrant under the Cumulative Plus Mather South Project conditions: • Eagles Nest Road and Florin Road As shown in Table CU-22, the addition of vehicle trips generated by the Mather South Project would result in the exceedance of applicable LOS and delay thresholds under Cumulative Plus Mather South Project conditions.		Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type have been made to mitigate impacts, which would be the responsibility of the Jackson Corridor Projects to fund. Table CU-25a and Table CU-25b also identify those intersections that would continue operate at unacceptable levels after mitigation, along with the constraint that precluded full mitigation. In locations where the LOS impact could not be mitigated by implementing the County's standard number of approach lanes, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These generally include providing additional turn lanes, carrying an additional through lane past the intersection, or designating the intersection as a High Capacity Intersection. These alternative mitigation measures would either fully mitigate the impact or substantially reduce the level of impact. Detailed intersection operations calculations and the full list of study area intersection operating conditions are included in Appendix TR-1.	
IMPACT: FREEWAY FACILITY IMPACTS CUMULATIVE PLUS MATHER SOUTH PROJECT Table CU-14 summarizes a.m. and p.m. peak hour US 50 freeway mainline operations under the Cumulative Plus Mather South Project scenario. Detailed freeway mainline operations calculations are included in Appendix TR-1. As shown in Table CU-14, with implementation of the Mather South Project, the Caltrans' threshold of significance (5 percent V/C increase) would not be exceeded along any of the freeway segments analyzed. Due to the addition of traffic to freeway ramp intersections in the study area generated by the Mather South Project, the following location would experience queues that exceed the available storage capacity: • Westbound • Exit ramp to Rancho Cordova Parkway - left turn queue	~~P~~S	CU-TR-7. Freeway Capacity Improvements The project shall implement Mitigation Measure CU-TR-3.	SU

length exceeds available storage As shown in Table CU-17, with implementation of the Mather South Project, none of the merge/diverge/weave segments would experience merge / diverge LOS worse than the freeway's LOS.			
IMPACT: CUMULATIVE ROADWAY FUNCTIONALITY IMPACTS CUMULATIVE MATHER SOUTH PROJECT Table CU-26 summarizes the results of the rural roadway segment functionality analysis under Cumulative Plus Mather South Project conditions. This table includes the number of lanes assumed with the implementation of the Mather South Project, which in many cases is greater than the number of lanes in the existing condition. The shaded table cells under the "Travel Lanes" heading illustrates new roadways and widened roadways that are assumed part of the Mather South Project. The "Substandard" heading indicates whether or not a roadway meets the County standards of 12-foot lanes and 6-foot shoulders. If the project makes improvements to a roadway segment such as widening, it would be required to reconstruct the entire substandard roadway segment to County standards. The shaded table cells under the "Functionality Impact" heading indicate those locations with a functionality impact. As shown in Table CU-26, the implementation of the Mather South Project would result in functionality impacts along 13 roadway segments within the project study area.	~~P~~S	CU-TR-8. Roadway Functionality Improvements The project applicant shall implement Mitigation Measure CU-TR-4. This mitigation would require the project applicant to pay their appropriate fair share contribution toward the construction of the improvements summarized in Table CU-27. Proposed improvements include widening the deficient rural roadway segments shown in Table CU-27 to County standards. Table CU-27 summarizes the proposed improvements of widening the deficient rural roadway segments to County standards, and the resultant functionality analysis for these roadway segments with these improvements implemented.	SU
Water Supply			
IMPACT: REQUIRE OR RESULT IN THE CONSTRUCTION OF NEW OR THE EXPANSION OF EXISTING WATER FACILITIES, THE CONSTRUCTION OF WHICH COULD CAUSE SIGNIFICANT ENVIRONMENTAL EFFECTS. RESULT IN DEMAND THAT CANNOT BE MET BY EXISTING OR REASONABLY FORESEEABLE FUTURE SERVICE CAPACITY. The Mather South Project would result in the extension of 8-inch and 12-inch supply lines to the Plan Area from ~~the existing~~	LTS	No mitigation required.	N/A

~~30-inch-diameter North Service Area (NSA) Pipeline Phase A water main transmission main in Kiefer Boulevard,~~ the existing 16-inch diameter water line in Zinfandel Drive (south of Douglas Road) and the existing 16-nch diameter water line in Sunrise Boulevard. Additionally, a new ~~one~~**ten**-million-gallon water tank **farm** would be constructed in the northeastern portion of the Plan Area to serve the greater NSA. However, the need for the tank **farm** is related to the greater cumulative demand from anticipated storage needs within the NSA. The tank **farm** would be required when demands from new connections exceed the current storage capacity of the system. Depending on the timing of adjacent development and the water demands resulting from such development, the construction of the tank **farm** may not be required to serve the Plan Area. No new offsite water distribution or treatment infrastructure would be needed for the project as adequate supplies and treatment capacity is available to meet project demands.			
IMPACT: HAVE SUFFICIENT WATER SUPPLIES AVAILABLE TO SERVE THE PROJECT FROM EXISTING ENTITLEMENTS AND RESOURCES, OR ARE NEW OR EXPANDED ENTITLEMENTS NEEDED? Sacramento County Water Agency (SCWA) is the service provider to the Mather South Project and would provide a mix of surface water in wet years, with a higher utilization of groundwater during dry years. SCWA would also supplement surface and groundwater with remediated and recycled water as available. The water demands associated with the Mather South Project were included in the latest Zone 41 Urban Water Management Plan (UWMP) which estimates total water consumption for the project at 1,483.61 ac-ft/yr (including 7.5% system losses). SCWA's existing supplies for normal and dry years would exceed the total projected buildout water demand for the entire NSA. SCWA determined that it has sufficient water supplies to meet the water demands of the Mather South Project over the next 20 years during normal, single-dry, and multiple-dry years.	LTS	No mitigation required.	N/A
IMPACT: CONTRIBUTE TO GROUNDWATER PUMPING TO SERVE PROJECT GROWTH SUCH THAT THE AVERAGE ANNUAL SUSTAINABLE YIELD OF 273,000 ACRE-FEET	LTS	No mitigation required.	N/A

FOR THE CENTRAL SACRAMENTO GROUNDWATER BASIN IS EXCEEDED? SCWA is responsible for recognizing and implementing the sustainable long-term average annual yield for the Central Groundwater Basin of 273,000 acre feet. SCWA relies upon a conjunctive use supply program which alternates between surface and groundwater reliance in order to maintain the appropriate trajectory for groundwater basin sustainability. Additional protection against overdrafting of the groundwater resources within the Central Basin is provided by state legislation, and SCWA is responsible for complying with the Sustainable Groundwater Management Act. Therefore, because SCWA has determined that appropriate supplies for the Mather South Project are available without undermining the credibility of groundwater management.			
IMPACT: INTERFERE SUBSTANTIALLY WITH GROUNDWATER RECHARGE SUCH THAT THERE WOULD BE A NET DEFICIT IN AQUIFER VOLUME OR A LOWERING OF THE LOCAL GROUNDWATER TABLE LEVEL? Recharge of the aquifer system occurs along active river and stream channels where extensive sand and gravel deposits exist, and especially along the American, Cosumnes, and Sacramento rivers. Additional recharge occurs along the eastern boundary of Sacramento County at the transition point from the consolidated rocks of the Sierra Nevada to the alluvial-deposited basin sediments. Intensive groundwater use in the Central Basin over the past 60 years has resulted in a general lowering of groundwater elevations. The Mather South Project would introduce impervious surfaces that prevent or hinder groundwater recharge; however, most of the recharge and groundwater storage in the Central Basin occurs from subsurface flow, which would not be adversely affected by implementation of the project. Additionally, the Mather South Project includes approximately 210-acres of open space which is approximately 25 percent of the Plan Area, including 50.4-acres of stormwater management basins (~~nine~~ **ten** basins) which would allow for the percolation of stormwater.	LTS	No mitigation required.	N/A

MITIGATION MONITORING AND REPORTING PROGRAM

It shall be the responsibility of the project applicant/owner to comply with the Mitigation Monitoring and Reporting Program (MMRP) for this project and to reimburse the County for all expenses incurred in the implementation of the MMRP, including any necessary enforcement actions. The applicant/property owner shall pay an initial deposit of $20,000.00. This deposit includes administrative costs of $900.00, which must be paid to the Office of Planning and Environmental Review prior to recordation of the MMRP and prior to recordation of any final parcel or subdivision map. The remaining balance will be due prior to review of any plans by the Environmental Coordinator or issuance of any building, grading, work authorization, occupancy or other project-related permits. Over the course of the project, the Office of Planning and Environmental Review will regularly conduct cost accountings and submit invoices to the applicant/property owner when the County monitoring costs exceed the initial deposit.

TERMINOLOGY USED IN THIS EIR

This Draft EIR uses the following terminology to describe environmental effects of the project.

Significance Criteria. A set of criteria used by the lead agency to determine at what level, or "threshold," an impact would be considered significant. Significance criteria used in this EIR include those that are set forth in the State CEQA Guidelines or can be discerned from the State CEQA Guidelines; criteria based on factual or scientific information; criteria based on regulatory standards of local, state, and federal agencies; and criteria based on goals and policies identified in the Sacramento County General Plan.

Less-than-Significant Impact. A project impact is considered less than significant when it does not reach the standard of significance and would therefore cause no substantial change in the environment. No mitigation is required for less-than-significant impacts.

Potentially Significant Impact. A potentially significant impact is a substantial, or potentially substantial, adverse change in the environment. Physical conditions which exist within the area will be directly or indirectly affected by the proposed project. Impacts may also be short-term or long-term. A project impact is considered significant if it reaches the threshold of significance identified in the EIR. Mitigation measures may reduce a potentially significant impact to less than significant.

Significant Unavoidable Impact. A project impact is considered significant and unavoidable if it is significant and cannot be avoided or mitigated to a less-than-significant level once the project is implemented.

Cumulative Significant Impact. A cumulative impact can result when a change in the environment results from the incremental impact of a project when added to other related past, present or reasonably foreseeable future projects. Significant cumulative impacts may result from individually minor but collectively significant projects.

Mitigation. Mitigation measures are revisions to the project that would minimize, avoid, or reduce a significant effect on the environment. State CEQA Guidelines §15370 identifies five types of mitigation:

a) Avoiding the impact altogether by not taking a certain action or parts of an action.

b) Minimizing impacts by limiting the degree or magnitude of the action and its implementation.

c) Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.

d) Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.

e) Compensating for the impact by replacing or providing substitute resources or environments.

1 PROJECT DESCRIPTION

PROJECT LOCATION

The Mather South Community Master Plan Project (Mather South Project) is located in the Cordova community of unincorporated Sacramento County. It is approximately 10 miles east of downtown Sacramento via Highway 50 and is generally situated within the central portion of Sacramento County (Plate PD-1). The project site (also referred to as the Plan Area) is approximately 848 acres in size and is located on a portion of the former Mather Air Force Base (Mather AFB), which is now a public airport facility referred to as Mather Field. The Plan Area is generally bounded by the Mather Golf Course and Mather Regional Park to the north, the Folsom South Canal to the east, Kiefer Boulevard to the south, and the Mather Preserve and planned alignment of Zinfandel Drive to the west. The Plan Area is within both the Urban Policy Area and Urban Services Boundary of Sacramento County. The City of Rancho Cordova is located immediately north and east of the Plan Area and unincorporated Sacramento County is located to the south and west (Plate PD-2).

The Plan Area is made up of seven individual parcels but its boundaries do not follow parcel lines. Therefore, the Plan Area includes portions of Assessor's Parcel Numbers: 067-0090-034, 067-0050-057, 067-0030-045, -072, -074, -076, and -077 located within Section 18 and 19, Township 8 North, Range 7 East on the Carmichael and Buffalo CR, California USGS 7.5-minute Quadrangle Maps. Refer to Plate PD-3.

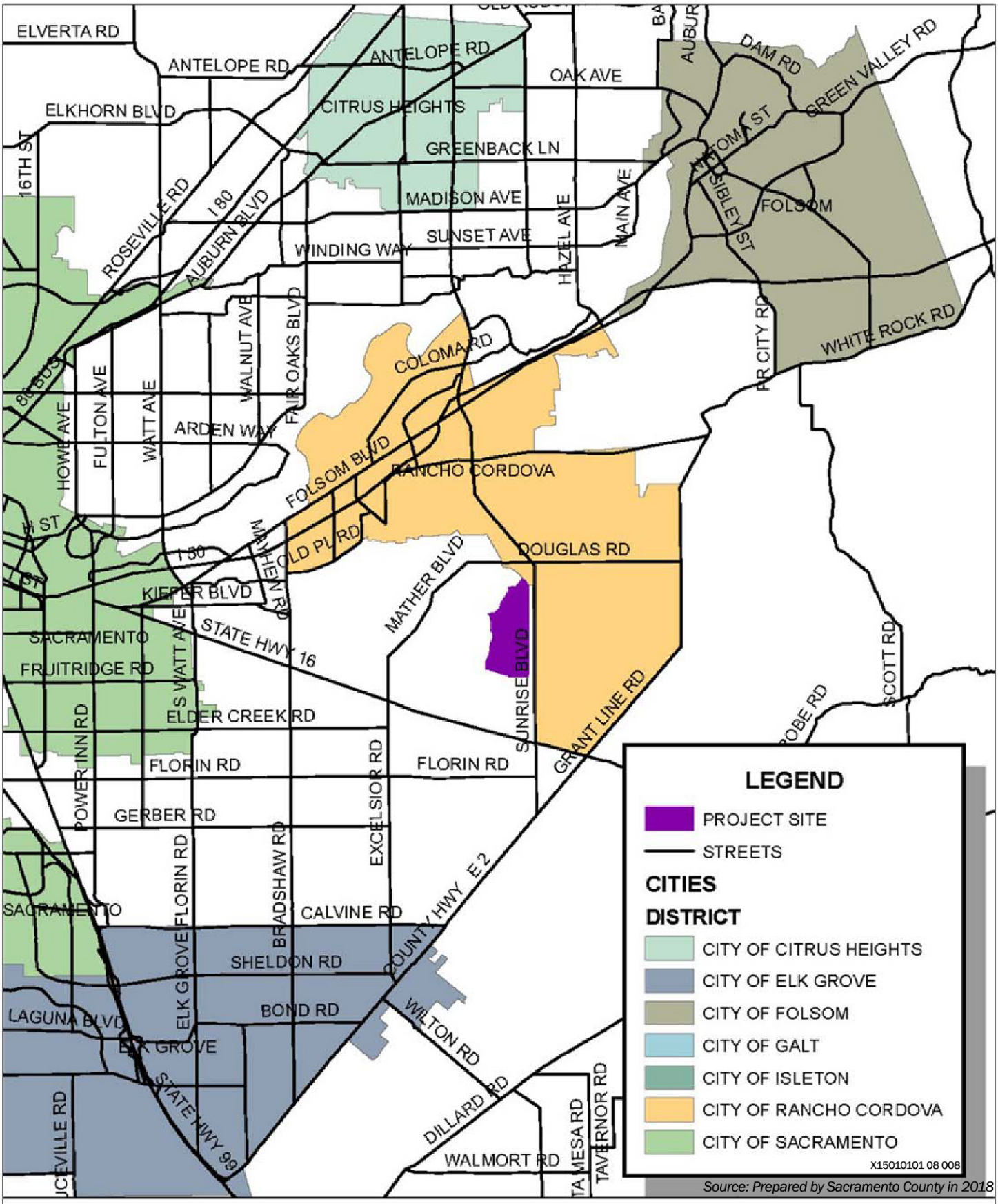
PROJECT PROPONENTS

APPLICANTS

Mather South, LLC
Attention: Phil Rodriguez

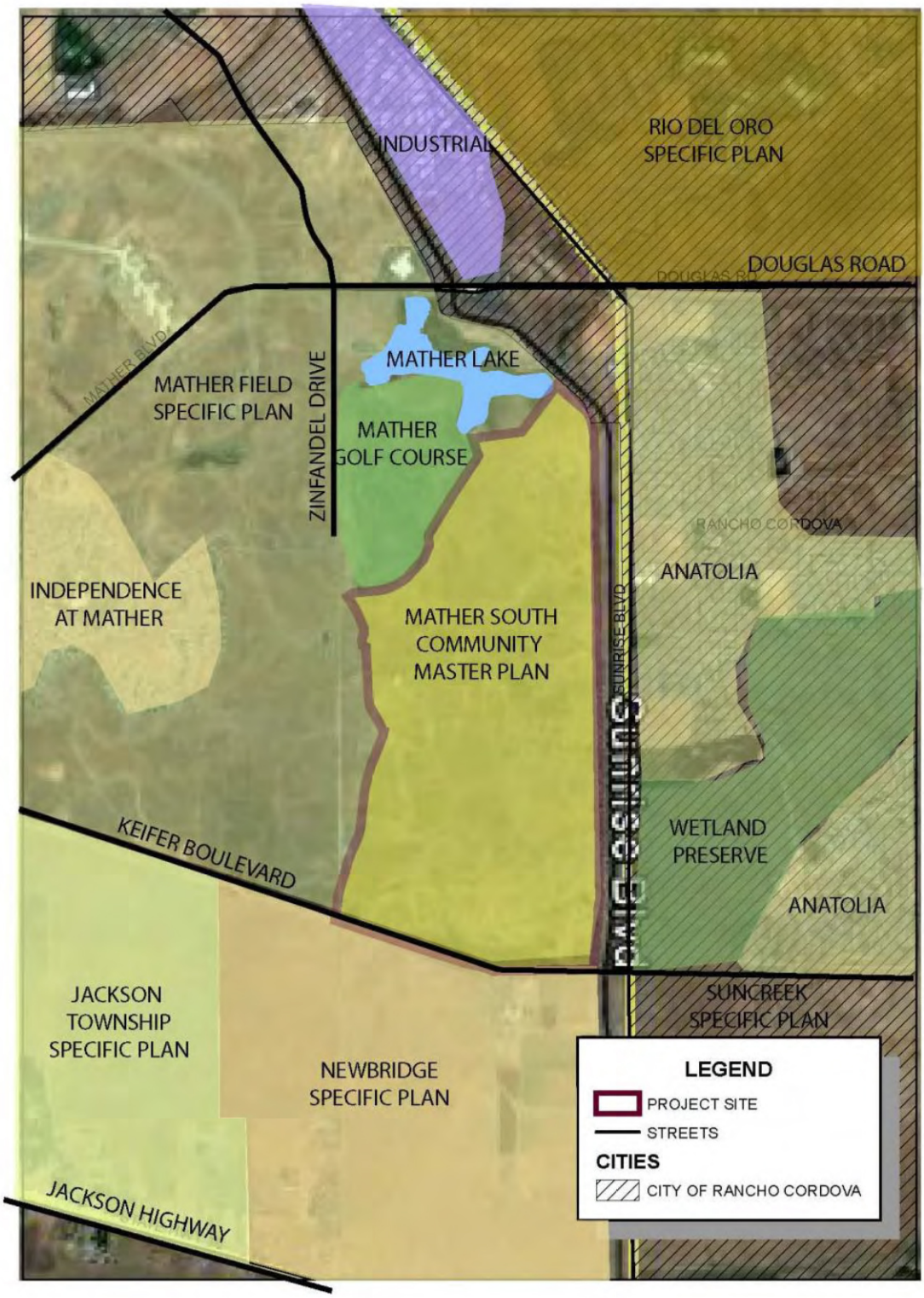
OWNER

Sacramento County Office of Economic Development and Marketing
Attention: Clark Whitten



Source: Prepared by Sacramento County in 2018

Plate PD-1: Regional Location



Source: Mather South Community Master Plan 2018

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Plate PD-2: Project Vicinity Map

ASCENT ENVIRONMENTAL

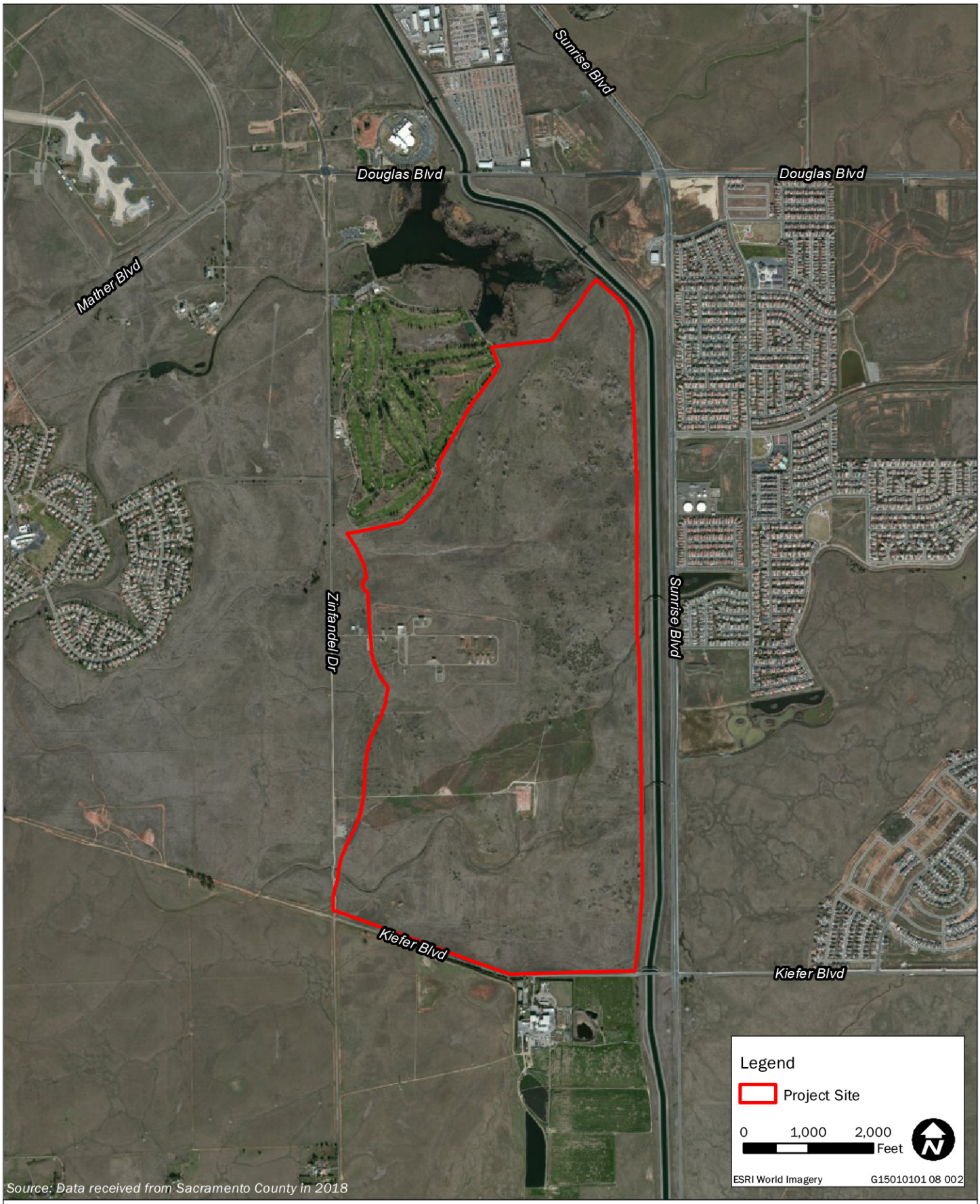


Plate PD-3: Aerial View

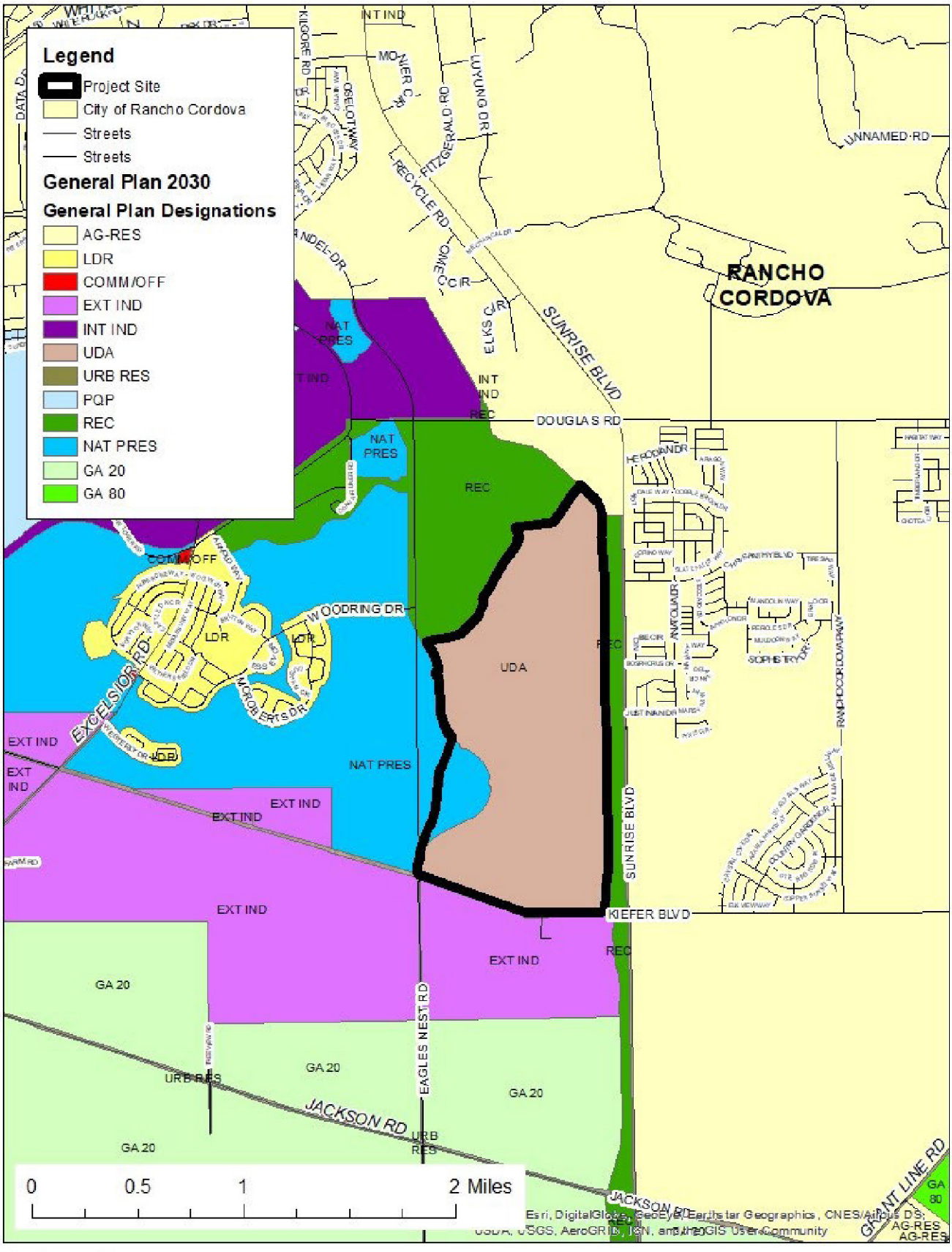
PROJECT SETTING

EXISTING LAND USES

The Plan Area was previously used and occupied by Mather AFB, which was developed in the early 20th century, and was decommissioned and closed by 1993. More information on past uses of the area is provided below under "Project Background." The Plan Area has been vacant since the closure of Mather AFB; however, some features remain from past military operations. Small outbuildings that served as ordnance storage and related military uses are located in the center of the Plan Area and a small private hobby model aeronautics area also remains in the southwest corner. The eastern margin of the Plan Area primarily contains excavated material from the construction of the Folsom South Canal, which borders the eastern edge of Plan Area. There are no existing roadways or infrastructure within the Plan Area; however, Zinfandel Drive extends south to the south end of the Mather Golf Course where it terminates on a dirt road along the west side of the Plan Area.

The Plan Area is generally flat with elevations ranging from 128 feet to 174 feet above mean sea level. Habitats present within the Plan Area include grassland, wetland and vernal pool areas, and intermittent drainages and swales. These water features occur throughout the Plan Area. There are two larger drainage features in the Plan Area which are tributaries of Todd Creek (a tributary of Morrison Creek). One crosses the Plan Area and flows east to west. The second originates from the middle of the Plan Area and flows to the west. The Plan Area contains several trees, which consist primarily of cottonwood.

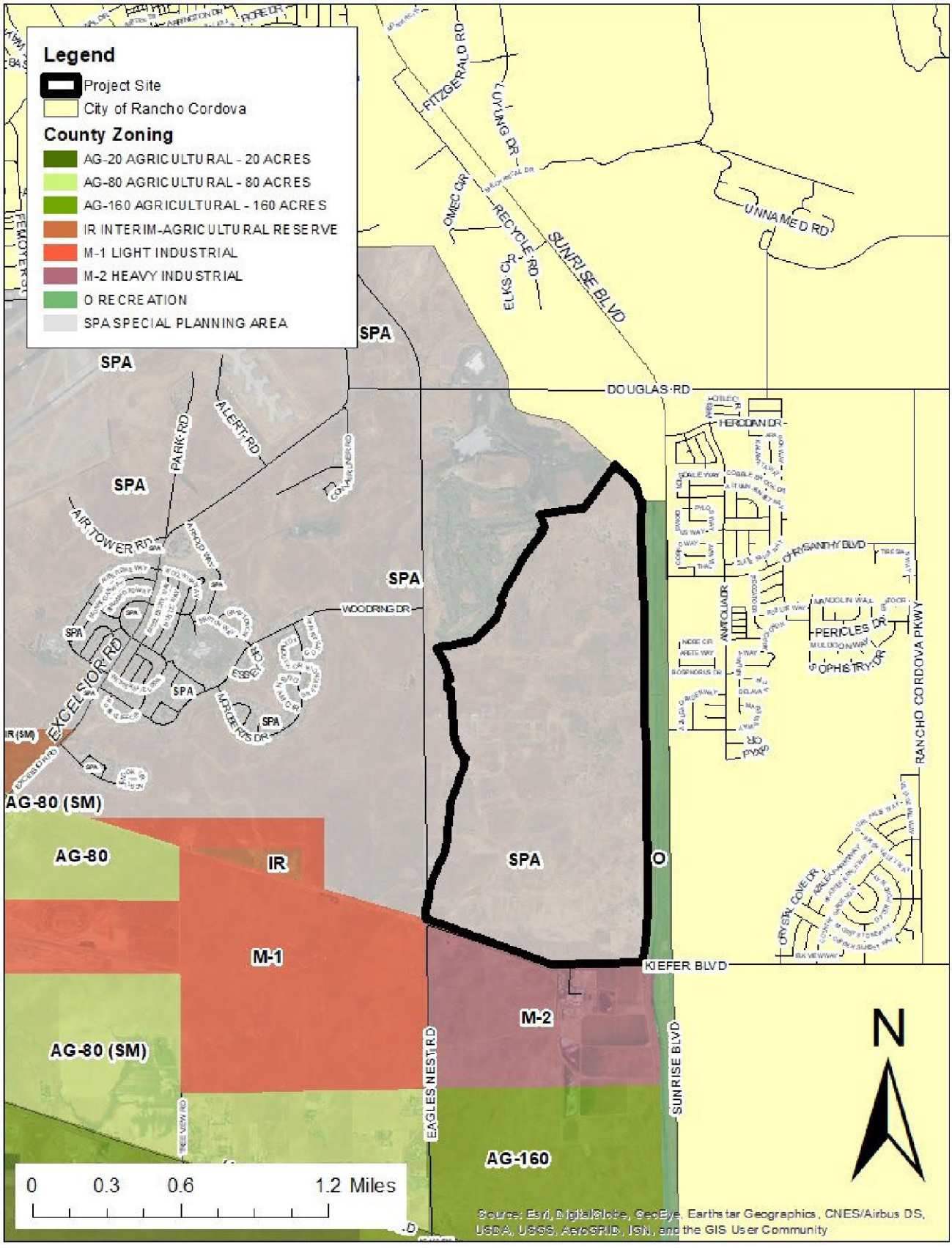
Much of the land surrounding the Plan Area is open space and/or undeveloped. The Mather Golf Course and Mather Lake are immediately north of the Plan Area. Folsom South Canal and a parallel regional bikeway are located along the eastern edge of the Plan Area. Sunrise Boulevard and the Anatolia and Sunrise Douglas communities in the City of Rancho Cordova are located directly east of the Folsom South Canal. Zinfandel Drive and the Mather Preserve define the western boundary. The Independence at Mather community is located approximately one-half mile west of Zinfandel Drive. The runway and facilities associated with Mather Field are located approximately 1.7 miles northwest of the Plan Area. North of the runway are various businesses, the Sacramento Veterans Affairs Hospital and Medical Center, residential neighborhoods, and business parks. Kiefer Boulevard is located along the southern boundary of the Plan Area, and the Sacramento Rendering Plant is located on the south side of Kiefer Boulevard, directly adjacent to the Plan Area.



Source: County of Sacramento

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Plate PD-4: Existing Mather South Plan Area General Plan Designation

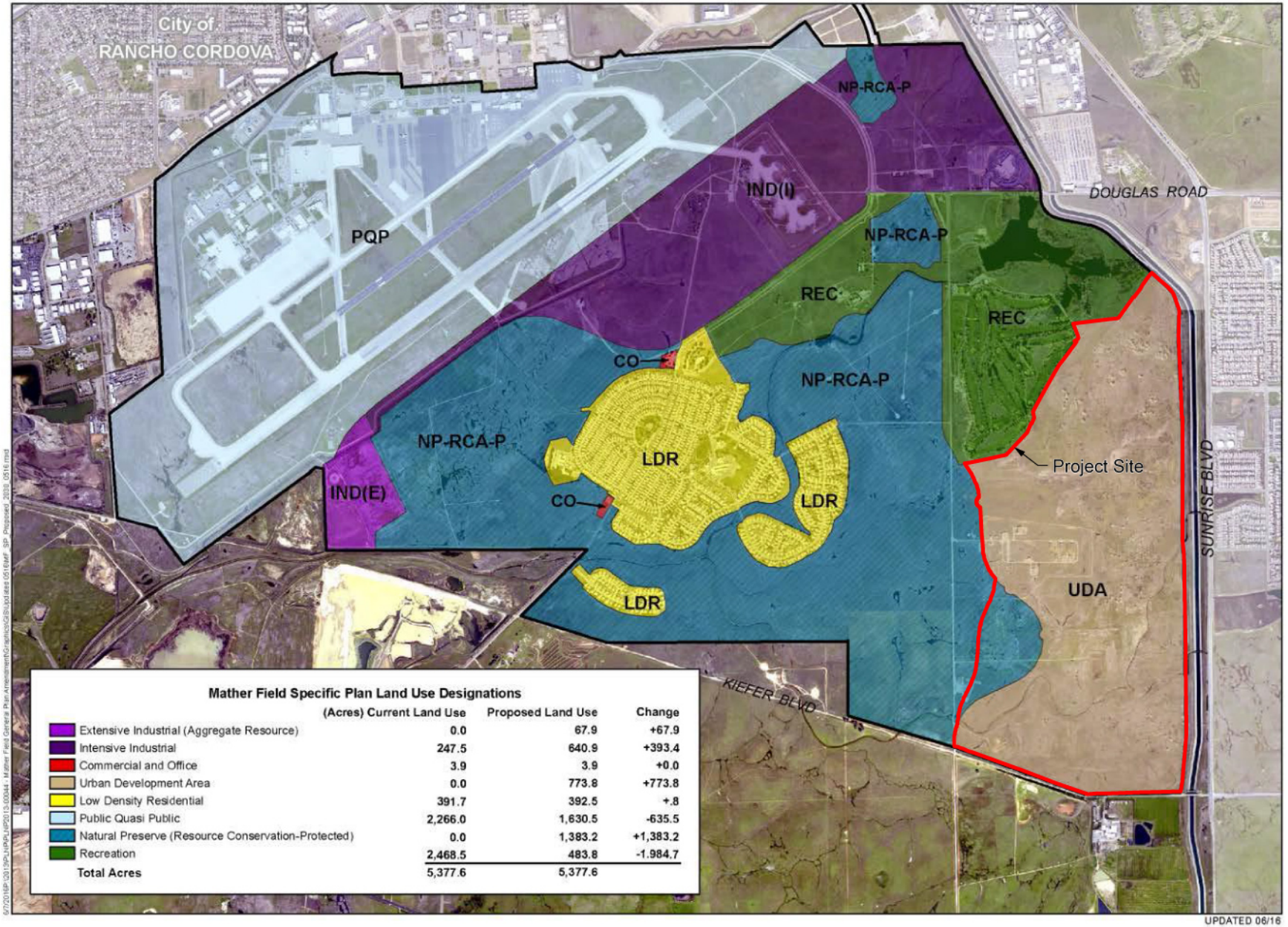


Source: County of Sacramento

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Plate PD-5: Existing Mather South Plan Area Sacramento County Zoning Districts

ASCENT ENVIRONMENTAL



Source:

Plate PD-6: Existing Mather Field Specific Plan Land Use Districts

EXISTING LAND USE DESIGNATIONS AND ZONING

Multiple County plans are applicable to the Plan Area, including the General Plan, Mather Field Specific Plan (adopted in 1997, amended in 2016), and the Mather Field Special Planning Area, and the County Zoning Code. Table PD-1 contains the existing land use and zoning designations that apply to the Plan Area. Plate PD-4 through Plate PD-7 illustrate each of the land use and/or zoning designations shown in Table PD-1. These various designations and how they pertain to the Mather South Project are described in greater detail below under "Project Background."

Table PD-1: Existing Mather South Plan Area Land Use Designations

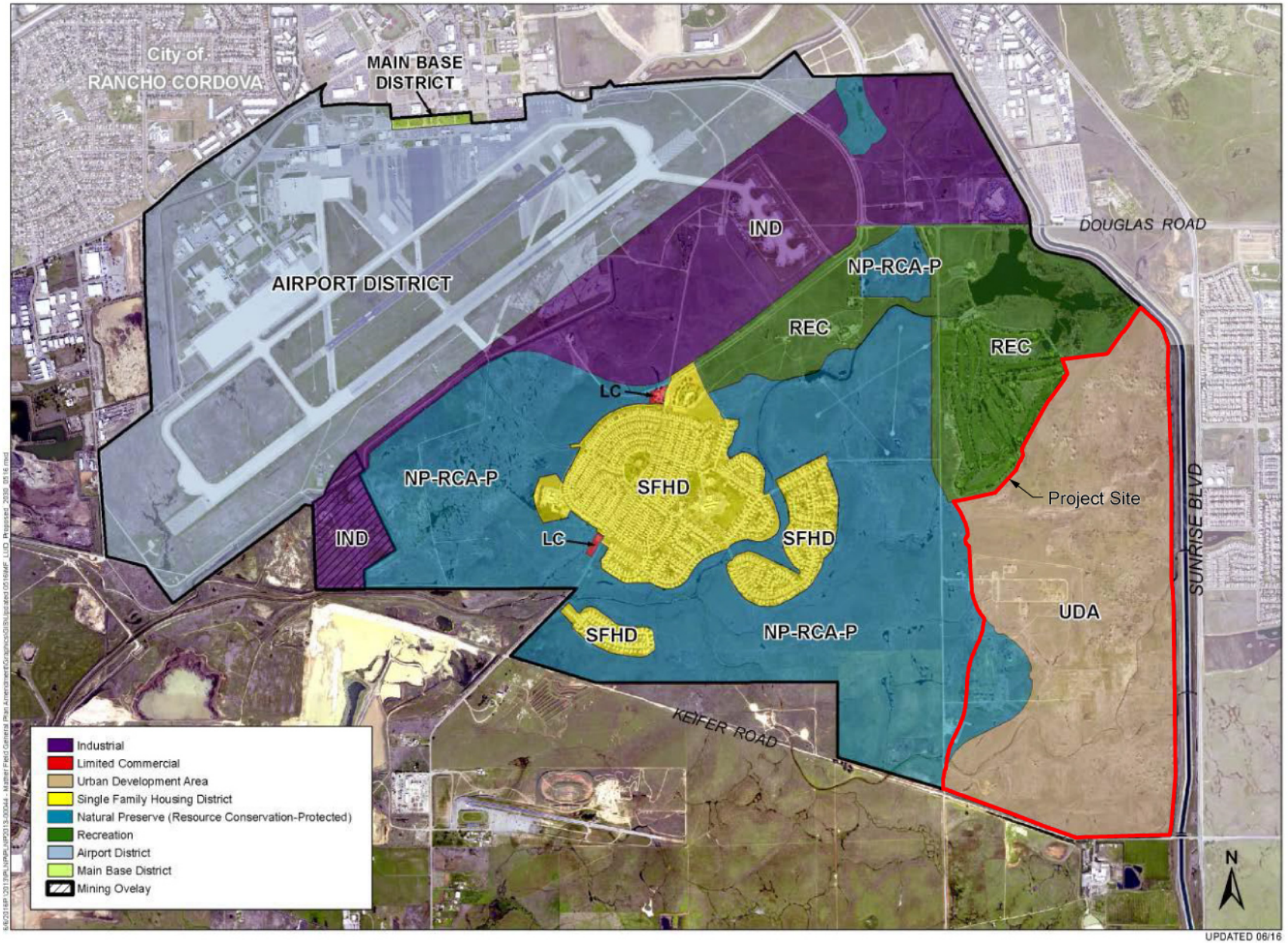
	General Plan Land Use Designation	County Zoning District	Mather Field Specific Plan Land Use	Mather Field Special Planning Area Land Use
Plan Area Designation	Urban Development Area (795 acres) Natural Preserve (53.31 acres)	Special Planning Area	Urban Development Area (795 acres) Natural Preserve (53.31 acres)	Urban Development Area (795 acres) Natural Preserve (53.31 acres)

PROJECT BACKGROUND

MATHER AIR FORCE BASE HISTORY

Mather AFB was established in 1918 as an airfield and pilot training school. Most base development occurred between 1941 and 1970, with expansion and improvements occurring through the 1980s. Following World War I, the base was used to support small military units and as a terminal for aerial forest patrol and air mail service planes. By the end of World War II, Mather AFB was used for pilot, navigator, observer, and bombardier training and was a stopover for aircraft traveling to and from the Pacific. After World War II, Mather AFB became the sole aerial navigation training school for the U.S. Air Force (USAF). The base was approved for closure in January of 1989. On October 1, 1993, Mather AFB was decommissioned as an active base under the Base Realignment and Closure Act of 1990.

The USAF completed an environmental impact statement (EIS) for the Disposal and Reuse of Mather AFB (USAF 1994). The U.S. Environmental Protection Agency (EPA) issued a Record of Decision (ROD) in March of 1993. A Supplemental ROD was issued in November of 1994, a Revised Supplemental ROD was issued in October 1995 (EPA 1996), and a Third Supplemental ROD was issued in May of 1998 (EPA 1998). These documents identify the organizations and agencies (which included Sacramento County) to receive property and facilities and the means of property conveyance.



Source:

X15010101 08 033

Plate PD-7: Existing Mather Field Special Planning Area Land Use Districts

MATHER FIELD SPECIFIC PLAN & SPECIAL PLANNING AREA DESIGNATIONS

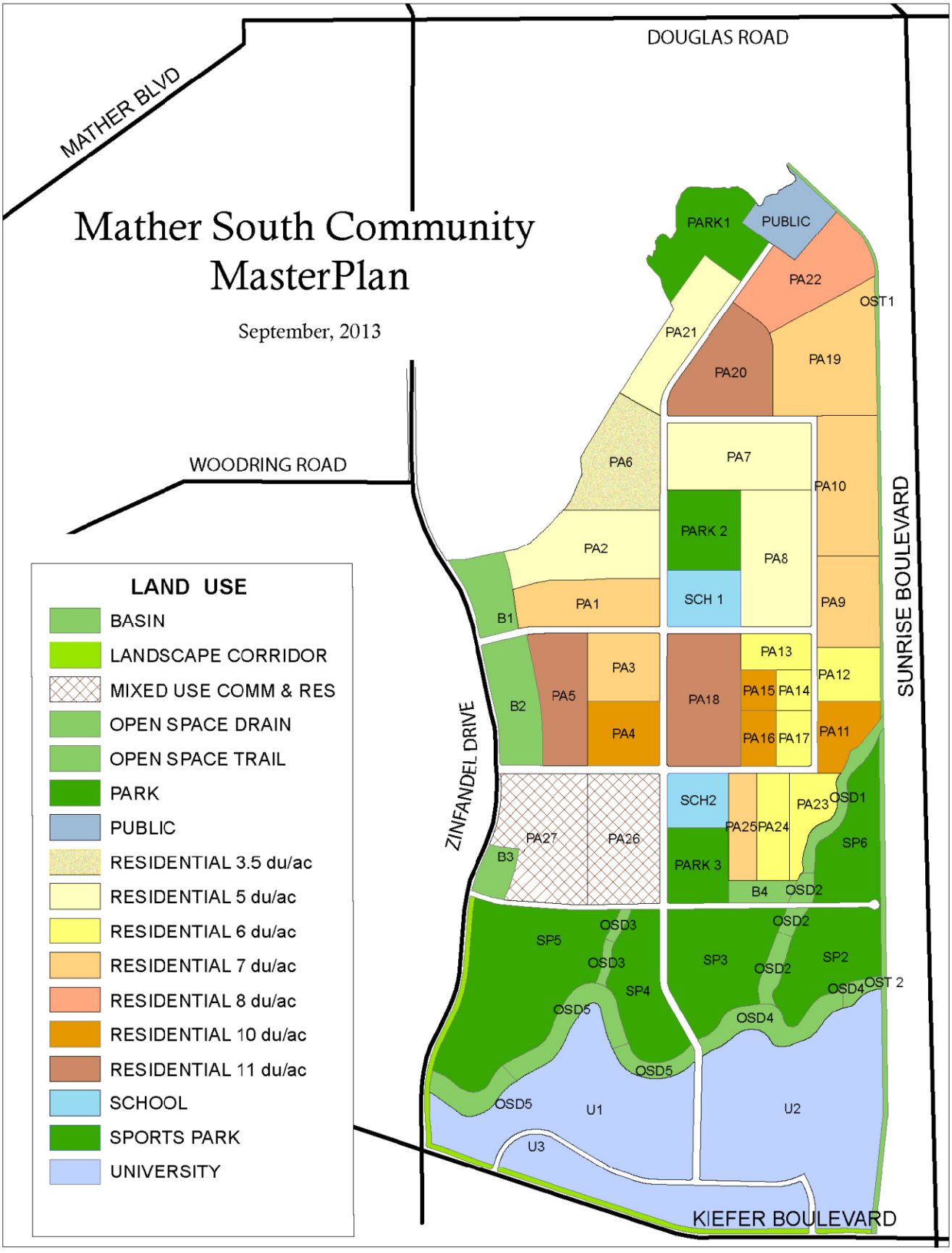
After Mather AFB was recommended for closure, Sacramento County began the planning process to adopt a specific plan for the area. From 1989 to 1991, the Sacramento Commission on Mather Conversion (SACOMC) analyzed numerous use alternatives for consideration by the County Board of Supervisors and recommended retention of the airport, reuse of other base facilities, and redevelopment of other portions of the base. Upon receiving the recommendations, the Board of Supervisors established the Mather Internal Study Team (MIST). MIST's goals were to refine and further evaluate SACOMC's recommendations and examine aviation and non-aviation reuse options. MIST recommended a reuse plan which also featured retention of the airport and mixed-use development surrounding the airport. In the fall of 1991, the Board of Supervisors endorsed the MIST plan and forwarded it to the Air Force Base Conversion Agency for consideration in its preparation of the EIS and ROD for the disposal of the base.

A specific plan (entitled the Mather Field Specific Plan) was adopted by the Sacramento County Board of Supervisors in May 1997. The planning document describes the envisioned transition of the former Mather AFB from military to civilian activities. Mather AFB is the historic name of the area; per the Specific Plan, the area is now referred to as Mather Field Specific Plan area.

MATHER FIELD PROJECT

In 2013, both the Mather South Project and the Mather Field Project (Control Number PLNP2013-00044) were initiated as subsequent development plans to the Mather Field Specific Plan described above. The Mather Field Project consisted of requests to change General Plan land use designations and text to amend the General Plan Transportation Diagram for a proposed realignment of Zinfandel Drive within the Mather Field Specific Plan Area. The Mather Field Project also included amendments to update the Mather Field Specific Plan and Special Planning Area to allow new land use designations and districts and to remove portions from the Mather South Plan Area that are now located within the City of Rancho Cordova. This included the creation of the Mather Preserve and the establishment of an Urban Development Area designation for the Mather South Plan Area.

The Notice of Preparation (NOP) for the Mather Field Project was issued in June 2014. Although the Mather South Project is a separate project from the Mather Field Project, it is geographically contained within the Mather Field Project area. Therefore, a planning level of analysis for what is proposed for the Mather South Plan Area was assumed in the Mather Field Project (refer to Plate PD-8).The conceptual plan for the Mather South Plan Area included in the NOP consisted of development on approximately 885 acres with approximately 3,545 residential dwelling units, a 47-acre mixed use area consisting of ten acres of commercial uses integrated with 37 acres of multiple family uses at up to RD-30 densities (approximately 1,068 units of the project's 3,545 residential units), 43 acres of neighborhood parks and trails, a 126-acre Sports Complex, and a 152-acre site for a university.



Source: County of Sacramento

X15010101 08 034

Plate PD-8: Conceptual Mather South Plan (2015)

MATHER FIELD STAKEHOLDER GROUP

The Board of Supervisors conducted a public hearing on the Mather Field Project on September 16, 2015. Members of the public provided public testimony related to the Mather Field Project and addressed concerns with the Mather South Plan Area conceptual plan as proposed in June 2014. Based on the feedback from the public, the Board chose not to take action on the project at that time and directed staff to engage in a collaborative process with key stakeholders, to work through technical issues and define a concept plan that focused on the concerns that were raised during the hearing. These concerns included: traffic impacts associated with the regional sports park and university, noise, lighting, and the potential for the proposed Zinfandel Drive alignment and sewer infrastructure to adversely affect important wetland resources.

Through several stakeholder meetings, various modifications to the Mather Field Project and Mather South Projects have occurred that address the concerns of the community and allow for additional preservation of wetland resources. The main revisions resulting from the stakeholder process to the Mather South Plan Area conceptual plan include the elimination of the original university concept and replacement with a smaller Environmental Education Campus, the elimination of the sports complex, and inclusion of additional wetland preserve area with associated open space corridors within the Plan Area. The Mather Wetland Preserve was also expanded to the east to protect known biological resources. Zinfandel Drive was also redesigned to run along the eastern border of the expanded Wetland Preserve area. Refer to Plate PD-9 below.

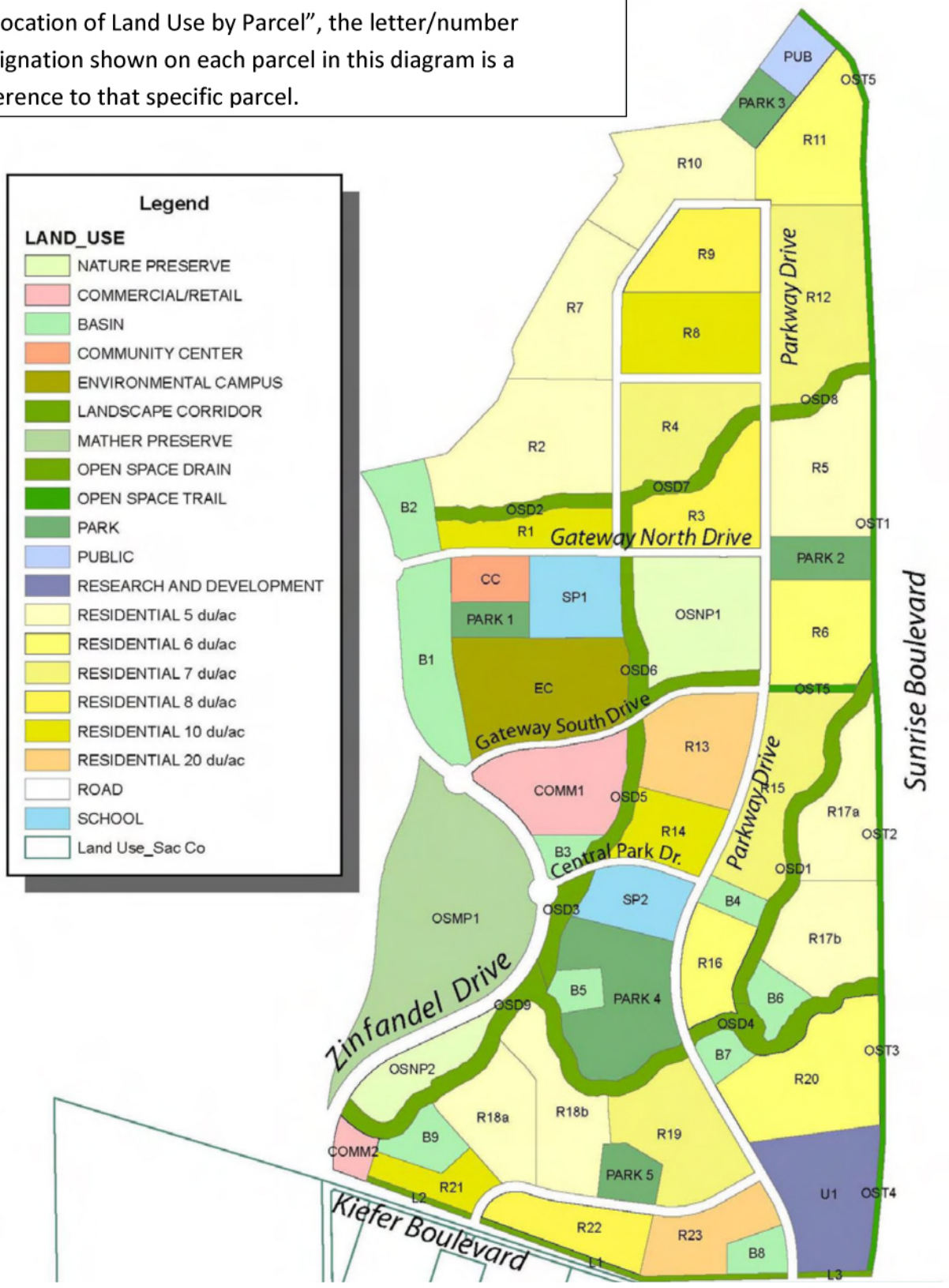
The Board of Supervisors approved the Mather Field Project's General Plan Amendments on July 26, 2016 and the Specific Plan and Special Planning Area Amendments on September 13, 2016. The Mather Field Project Final Environmental Impact Report (EIR) (SCH #2013072073) was also certified on September 13, 2016 and is hereby incorporated by reference. These actions established the current Mather Field Project and Mather South Plan Area land use designations and alignment for Zinfandel Drive south of Douglas Road.

The current Mather South Project, subject of this EIR, is a continuation of previous planning efforts and provides specificity at the project level. A revised NOP for the Mather South Project was issued on January 5, 2017, which is included as Appendix PD-2 of this EIR.

PLANNED DEVELOPMENT

The Mather South Project is one of four major planning applications currently in process for future urban growth areas located along the Jackson Road corridor, which are collectively referred to as the Jackson Highway Master Plans. The other three plans include the West Jackson Highway Master Plan, the NewBridge Specific Plan, and the Jackson Township Specific Plan.

NOTE: Throughout this Master Plan, and in Appendix B "Allocation of Land Use by Parcel", the letter/number designation shown on each parcel in this diagram is a reference to that specific parcel.



Source:

X15010101 08 035

Plate PD-9: Mather South Project Community Master Plan Land Use Diagram

In total, the four master plans cover approximately 9,247 acres and, based on the most recent NOPs prepared for each as of May 2018, would provide for the development of more than 27,000 new housing units of varying densities, nearly 6.8 million square feet of commercial space, employment-generating uses, mixed use land uses, 12 schools, and approximately 322 acres of developed parkland. The master plans were initiated at the request of each of the project applicants in response to long-term growth projections for the region, and if approved, are anticipated to build out over several decades.

The West Jackson Highway Master Plan area is located southwest of the Mather South Plan Area and includes approximately 5,913 acres on both the north and south sides of Jackson Highway. The New Bridge Specific Plan area is located just south of the Mather South Plan Area and includes approximately 1,095 acres north of Jackson Highway. The Jackson Township Specific Plan area is located southwest of the Mather South Plan area and includes approximately 1,391 acres north of Jackson Highway. Refer to Plate PD-2.

Each of the proposed master plans has been considered in the cumulative context and infrastructure planning for the Mather South Project. However, as of the writing of this EIR, applications for each of the Jackson Road corridor plans have been submitted to the County and are in various stages of processing. At this time, it is unknown if or when any of the master plans will be presented at hearing to the Board of Supervisors for consideration.

PROJECT PROPOSAL

The Mather South Project represents the second step in a two-step planning process for the Mather Field Specific Plan Area. The first, the Mather Field Project as discussed above, modified land uses and was completed in September 2016. The second, evaluation and consideration of specific project-level land uses and environmental impacts of the Mather South Project, is the subject of this EIR. If approved, the Mather South Project would result in amendments to the General Plan, the Mather Field Specific Plan, and the Mather Field Special Planning Area Ordinance, as described below in “Requested Entitlements.”

The Mather South Project in its current iteration includes an 848-acre master plan community with up to 3,522 residential dwelling units of various densities (multi-family, detached, and attached single-family), a 28-acre environmental education campus including 200 multi-family dwelling units, a 21-acre research and development park, two elementary schools, a 6-acre community center, 21 acres of commercial-retail with up to 225,000 square feet of retail space, 44 acres of parkland including 26 acres of neighborhood parks and a 17-acre community park, and 210 acres of open space areas that include a 53-acre portion of the Mather Preserve west of Zinfandel Drive, as well as other natural preserves and drainage corridors, stormwater quality and detention basins, landscape buffers, and public utility corridors all connected by multi-use pedestrian and bicycle trails. Refer to Plate PD-9 above and Table PD-2.

The proposed Mather South Community Master Plan (Community Master Plan) for the project provides goals and policies to guide development within the Plan Area. It also establishes design guidelines, development standards, permitted land uses, densities, maximum number of residential units, required public facilities, phasing and implementation mechanisms, and demonstrates compliance with applicable County policies. The proposed Community Master Plan is included in Appendix PD-1.

Table PD-2: Mather South Proposed Land Uses

Land Use	Residential Units	Commercial Sq. Ft.	Subtotal Acres	Total Acres
Open Space				**210.50**
Natural Preserve & Creek/Drainage			141.73	
Water Quality/Detention Basin			50.44	
Utility/Trail Corridors			13.48	
Landscape Buffers			4.85	
Parks & Recreation				**44.03**
Neighborhood			21.55	
Community			22.48	
Environmental Education Campus				**27.90**
Commercial-Office		275,000	22.90	
Residential Rd-20 (20 Du/Ac)	200		5.00	
Research and Development Park				**21.35**
Commercial-Office		325,000	21.35	
Commercial				26.86
Retail		185,000	21.06	
Community Center		15,000	5.80	
Public Facilities				**90.43**
School			22.19	
Utilities			5.27	
Roadways			62.97	
Residential				**427.24**
RD-5 (5 du/ac)	849		154.66	
RD-6 (6 du/ac)	476		71.38	
RD-7 (7 du/ac)	628		84.89	
RD-8 (8 du/ac)	338		42.30	
RD-10 (10 du/ac)	449		44.94	
RD-20 (20 du/ac)	581		29.07	
Totals	**3,522**	**800,000**	**848.31**	**848.31**

REQUESTED ENTITLEMENTS

The Mather South Project would modify the Sacramento County General Plan, the Mather Field Specific Plan and the Mather Field Special Planning Area Ordinance to reflect a level of detail applicable to a master planning and specific plan effort for an 848-acre portion of the more than 5,200 acre Mather Field Specific Plan Area. The following entitlements would result from approval of the project:

1. A **General Plan Amendment** to amend the Land Use Diagram from Urban Development Area (795 acres) to Low Density Residential (622 acres), Medium Density Residential (17 acres), Natural Preserve (86 acres) Commercial and Offices (42 acres), and Public/Quasi-Public (28 acres). Refer to Plate PD-10.

2. A **General Plan Amendment** to change the Transportation Plan to reflect proposed roadway alignments and transit systems. Refer to Plate PD-11.

3. A **General Plan Amendment** to change the Bicycle Master Plan to add internal and external bicycle facilities within and through the project area as shown in the Bicycle Master Plan Amendment Diagram. Refer to Plate PD-12.

4. A **Specific Plan Amendment** to change the Mather Field Specific Plan, specifically a portion of the South Base Area (795 acres) from Urban Development Area (795 acres) to Mather South Community Master Plan (795 acres). Refer to Plate PD-13.

5. Adoption of the **Mather South Community Master Plan** as an amendment to the Mather Field Specific Plan including text, a master plan land use diagram, design guidelines and development standards.

6. A **Zoning Ordinance Amendment** of the Mather Field Special Planning Area Ordinance (SZC 97-0021, Section 603) to incorporate the Mather South Community Master Plan, design guidelines, and development standards.

7. Acceptance of an Affordable Housing Strategy for the Mather South Community Master Plan consisting of on-site dedication of land for construction of affordable units.

~~7~~8. Adoption of a **Development Agreement** for the Mather South Community Master Plan by and between the County of Sacramento and Applicants.

~~8~~9. Amendment of the Mather Field **Public Facilities Financing Plan**.

10. Adoption of the Mather South Urban Services Plan.

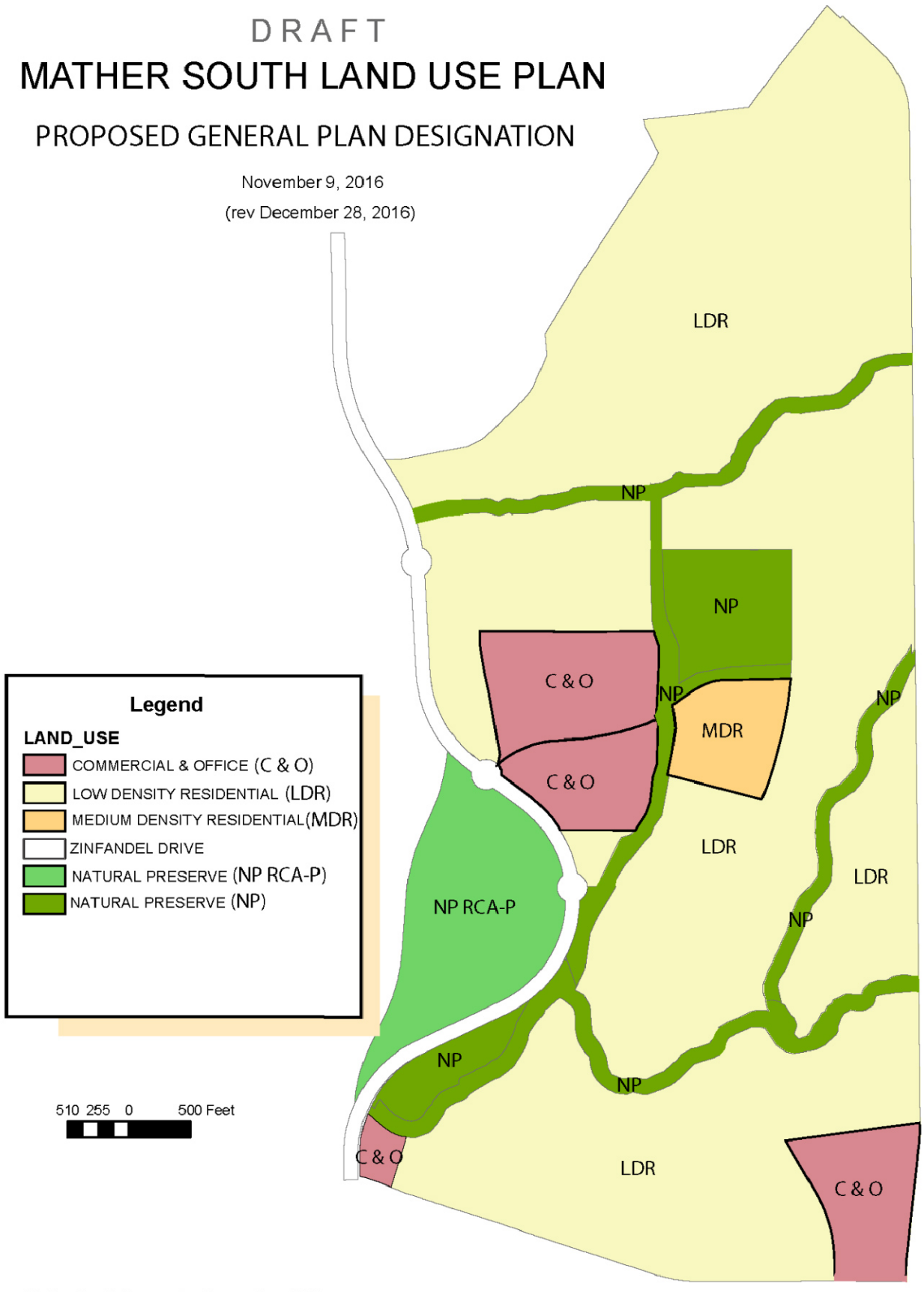
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MATHER SOUTH LAND USE PLAN

PROPOSED GENERAL PLAN DESIGNATION

November 9, 2016

(rev December 28, 2016)

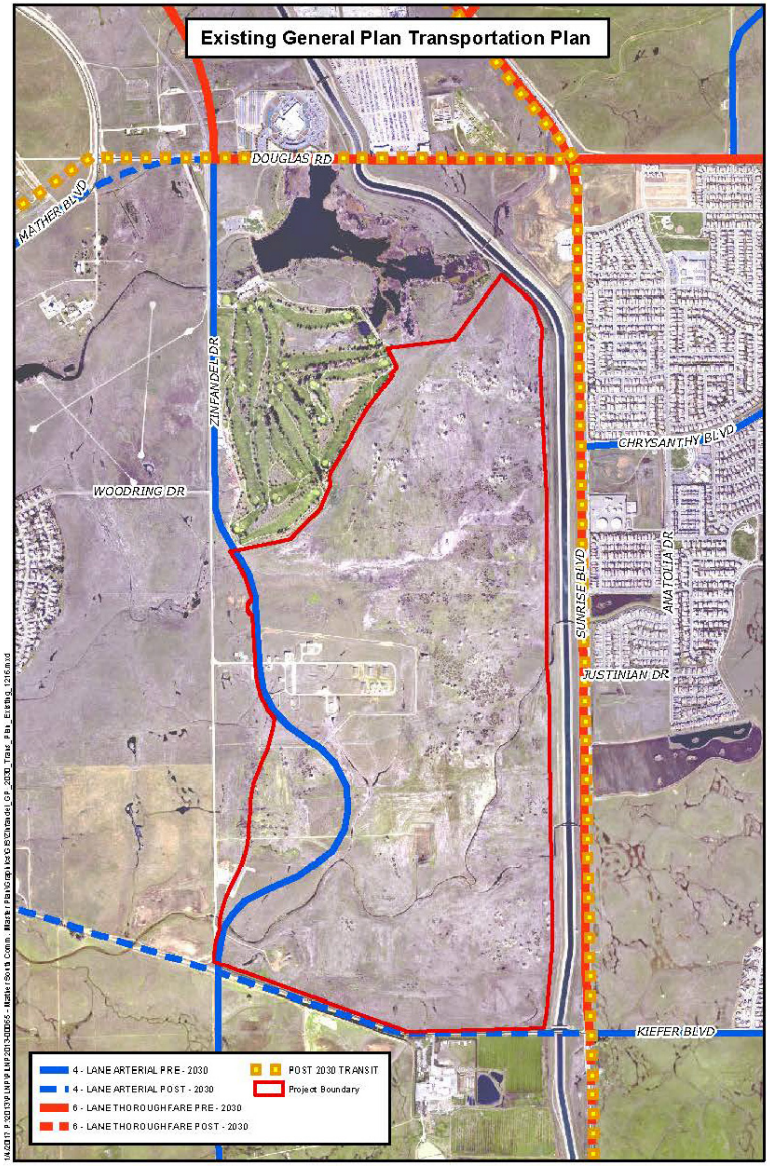


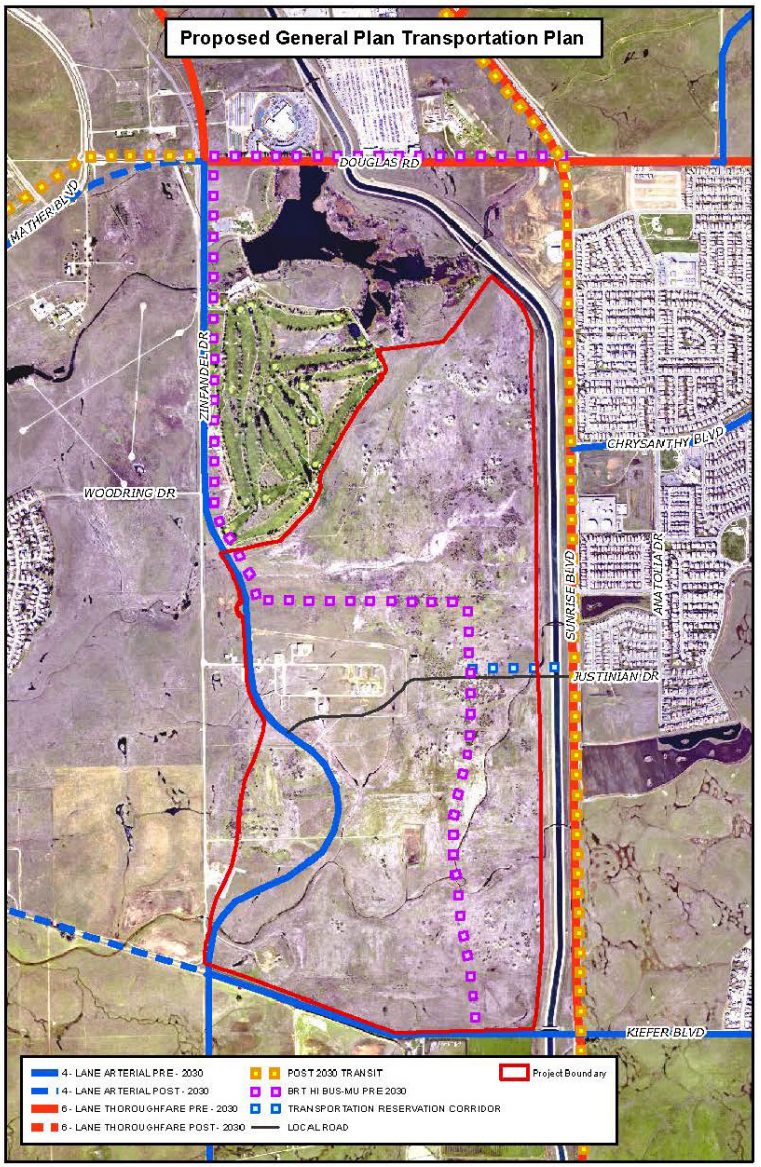
Source: Mather South Community Master Plan 2018

X15010101 08 036

Plate PD-10: Proposed General Plan Designations

ASCENT ENVIRONMENTAL





Source: Mather South Community Master Plan 2018

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Plate PD-11: Existing and Proposed General Plan Transportation Plan

ASCENT ENVIRONMENTAL

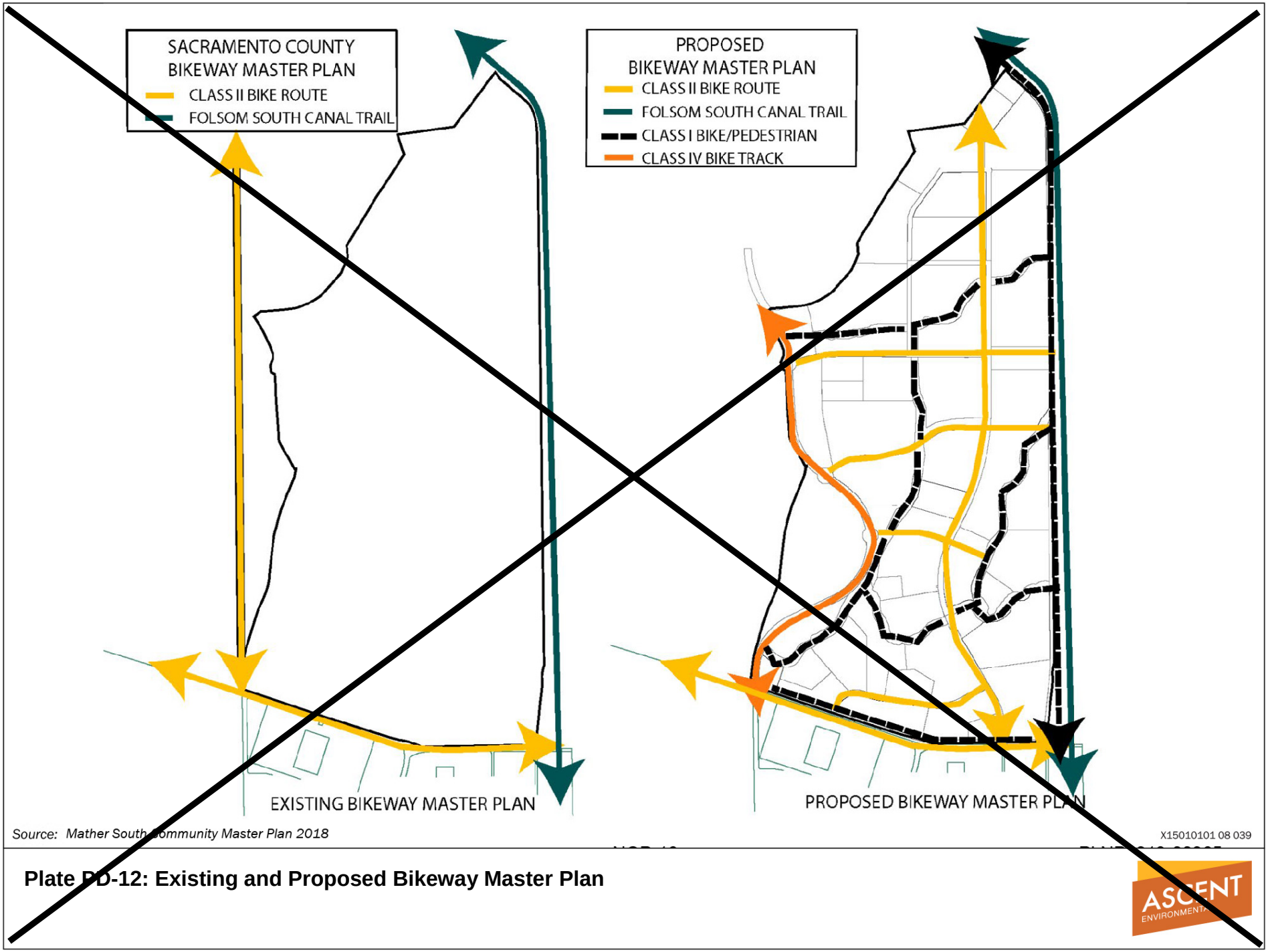
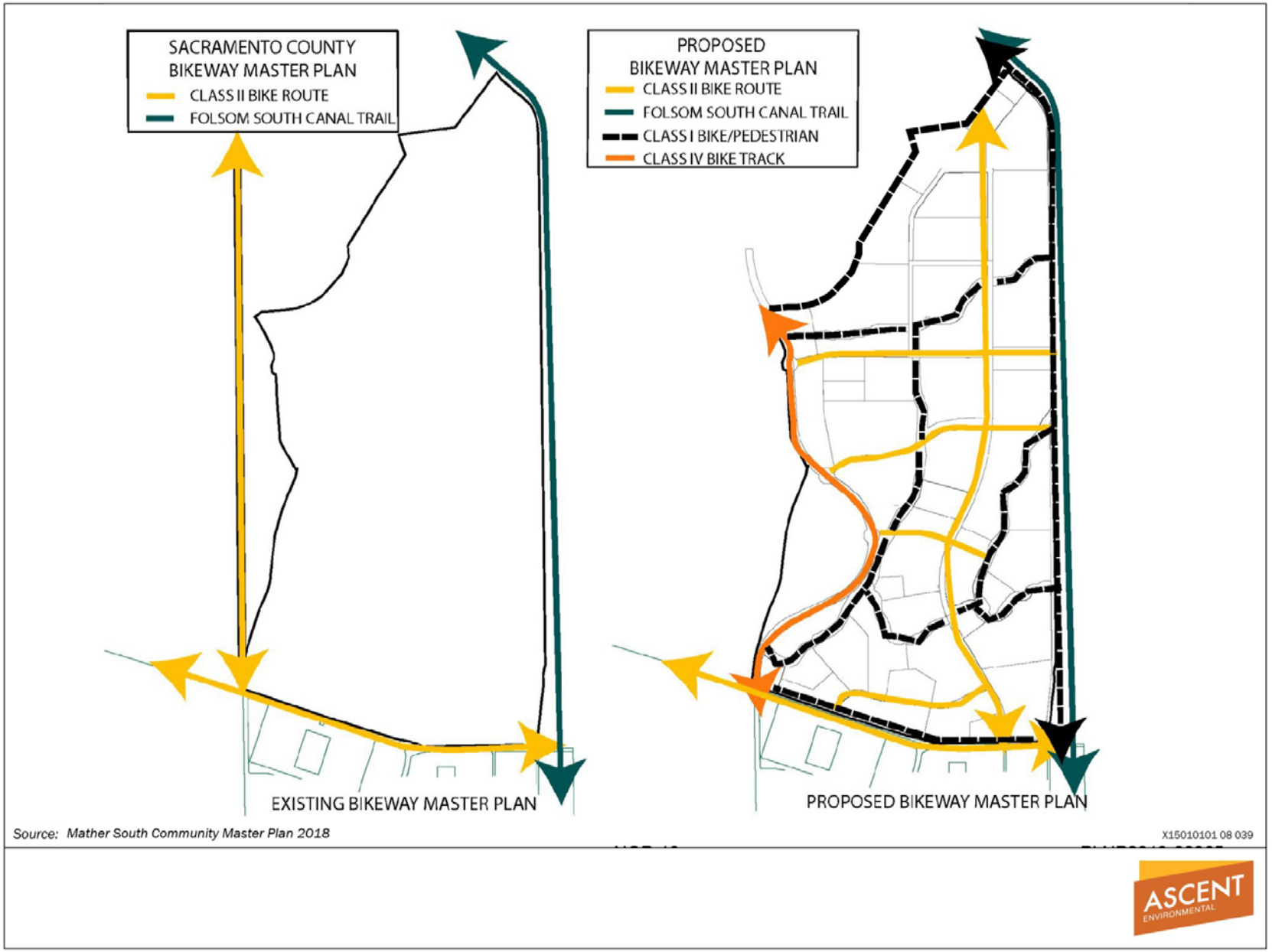
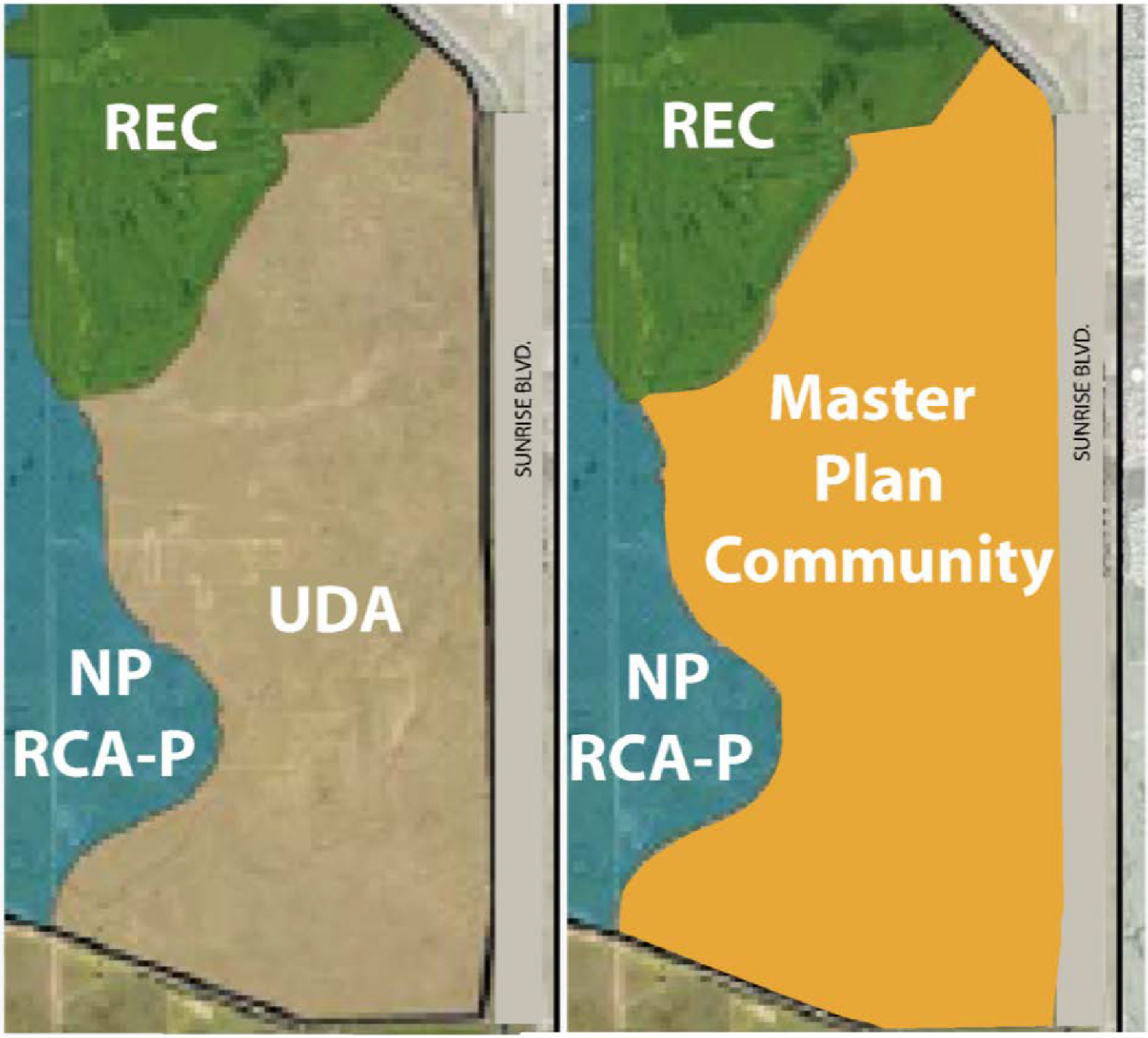


Plate PD-12: Existing and Proposed Bikeway Master Plan

Plate PD-12: Existing and Proposed Bikeway Master Plan





Existing Specific Plan
Land Use Designation

Proposed Specific Plan
Land Use Designation

Source: Mather South Community Master Plan 2018

X15010101 08 040

Plate PD-13: Existing and Proposed Mather Field Specific Plan and Mather Field Special Planning Area Land Use Designations

ASCENT ENVIRONMENTAL

PROPOSED LAND USES

As shown in Plate PD-9 and listed by type in Table PD-2 above, the Plan Area is divided into 69 large-lot parcels, also referred to as builder parcels. Each of these builder parcels is assigned a land use. The intent is that a builder would purchase one or more large-lot parcels and subdivide, if necessary, and develop the land consistent with the designated land use. In addition to the specific large-lot parcels, the Community Master Plan describes two key activity hubs, the Environmental Education Hub and the Mixed-Use Village Center. The Environmental Education Hub includes the environmental education campus, a wetland preserve area, a neighborhood school, a park, a community center, a segment of the major internal open space drainage/trail network, and a large multi-use stormwater basin. The Mixed-Use Village Center includes a commercial center, multi-family residential, a segment of the major internal open space drainage/trail network, and a smaller multi-use stormwater basin.

The following sections describe the primary land uses by type below.

RESIDENTIAL LAND USE

The Mather South Project includes residential land uses on approximately 427 acres, or 50 percent of the Plan Area. The residential uses are dispersed among 25 distinct builder parcels and include a mix of housing types and densities in the range of five to 20 dwelling units per acre. They are labeled PA 1 through PA 22 on Plate PD-9.

Single-family housing would be located throughout the Plan Area at a range of densities from five to 10 dwelling units per acre (5 to 10 du/acre), which could accommodate both detached and attached homes.

Multi-family residential uses would accommodate apartments, townhouses, and condominiums at a density of 10 to 20 du/acre. Multi-family residential units would be adjacent to the large commercial site and across Parkway Drive from the Research and Development Park site. The multi-family site adjacent to the commercial center abuts an open space corridor and bike trail. The multi-family site adjacent to the Research and Development Park overlooks a stormwater management basin. Up to 200 additional multi-family housing units could be developed in the environmental education campus area.

COMMERCIAL LAND USE

The Mather South Project includes two commercial sites, labeled COMM1 and COMM2 on Plate PD-9 and Table PD-2. The Commercial Center (COMM1) is an 18-acre site at the South Gateway Drive entry from Zinfandel Drive. This site would be suitable for neighborhood retail with a large anchor store, office uses, and service commercial uses. The commercial use may incorporate a public gathering space, such as a plaza that could host special events. The adjacent open space corridor provides an opportunity to create outdoor dining, a promenade, or other marketable public space along the corridor.

The Convenience Commercial Center (COMM2) is approximately 3 acres in size and in the southwest corner of the Plan Area at the intersection of Zinfandel Drive and Kiefer Boulevard. This site would be suitable for small commercial services, such as a fuel

station, food services, retail, or office uses. This parcel also has the benefit of access from the corridor trail system.

Environmental Education Campus

The Mather South Project would include an environmental education campus at the center of the Plan Area that is approximately 28 acres in size, which is labeled as EC in Plate PD-9 and Table PD-2. The campus would host the environmental community and educational institutions, such as non-profit environmental organizations, community colleges, local school districts, satellite universities, community groups, and others with a common mission of advancing environmental education at the community level. The campus would include uses such as up to 275,000 square feet of office space, indoor and outdoor classrooms, laboratories, and support facilities such as administration offices, common restrooms, food service facilities, and other education-oriented facilities. The campus may also include up to 200 multi-family residential dwelling units.

Research and Development Campus

The Mather South Project would include a 21.4-acre research and development park in the southeast corner of the Plan Area, which is labeled as U1 in Plate PD-9 and Table PD-2. The site is prominently located at the southern entry to the Plan Area along Kiefer Boulevard. Parkway Drive serves as a primary entry to the park and to the residential neighborhoods to the north. This site could be developed with up to 325,000 square feet of commercial-office space. This site is suitable for office, research and development, light assembly, or some combination of these. The proximity to the campus also suggests that business enterprises associated with environmental research may find a synergy with the campus to the benefit of both areas.

Community Center

A community center is proposed near the campus and adjacent to the park and elementary school that are adjacent to the campus. It is labeled at CC in Plate PD-9 and Table PD-2. The community center is planned on approximately 6 acres as a 15,000 square-foot, private recreation and social facility open only to the residents of the Plan Area. Its central location, near the campus, may create a natural gathering place for the community. Pedestrian and bicycle access from nearby trails, as well as neighborhood electric vehicle (NEV) access from Gateway North Drive, provide easy access for all members of the community.

Schools

The Mather South Project is located in the Elk Grove Unified School District. As disclosed in the Community Master Plan, the project would generate a projected student enrollment of 1,272 elementary school students, 356 middle school students, and 663 high school students. Middle and high school students would attend area schools as described in Chapter 15, Public Services.

The project includes two elementary school sites totaling approximately 22 acres, which are labeled as SP1 and SP2 in Plate PD-9 and Table PD-2. These sites are connected

to proposed bike and pedestrian trails and adjacent to neighborhood parks to enhance opportunities for recreation. School Site 1 fronts on Gateway North Drive and a local street along the west side of the school would provide secondary access. School Site 2 would front on Parkway Drive and Central Park Drive.

Parks

The Mather South Project includes four neighborhood parks ranging in size from approximately 4.5 acres to 7.25 acres, which total 21.55 acres, and one 22.48-acre community park. The neighborhood parks are labeled as PARK1, 2, 3, and 5 in Plate PD-9 and Table PD-2, while the community park is labeled as PARK4. The neighborhood parks are dispersed throughout the Plan Area, while the community park is on the southern end of the Plan Area adjacent to one of the school sites. The community park is planned to provide active recreational areas such as fields for soccer, lacrosse or rugby, and baseball and softball fields, as well as open play areas, picnic tables, and gathering areas. Neighborhood parks would include open play areas, picnic and barbecue facilities, and children's playgrounds. Parks will be designed consistent with Cordova Recreation & Park District Inventory & Assessment Plan 2012 park standards.

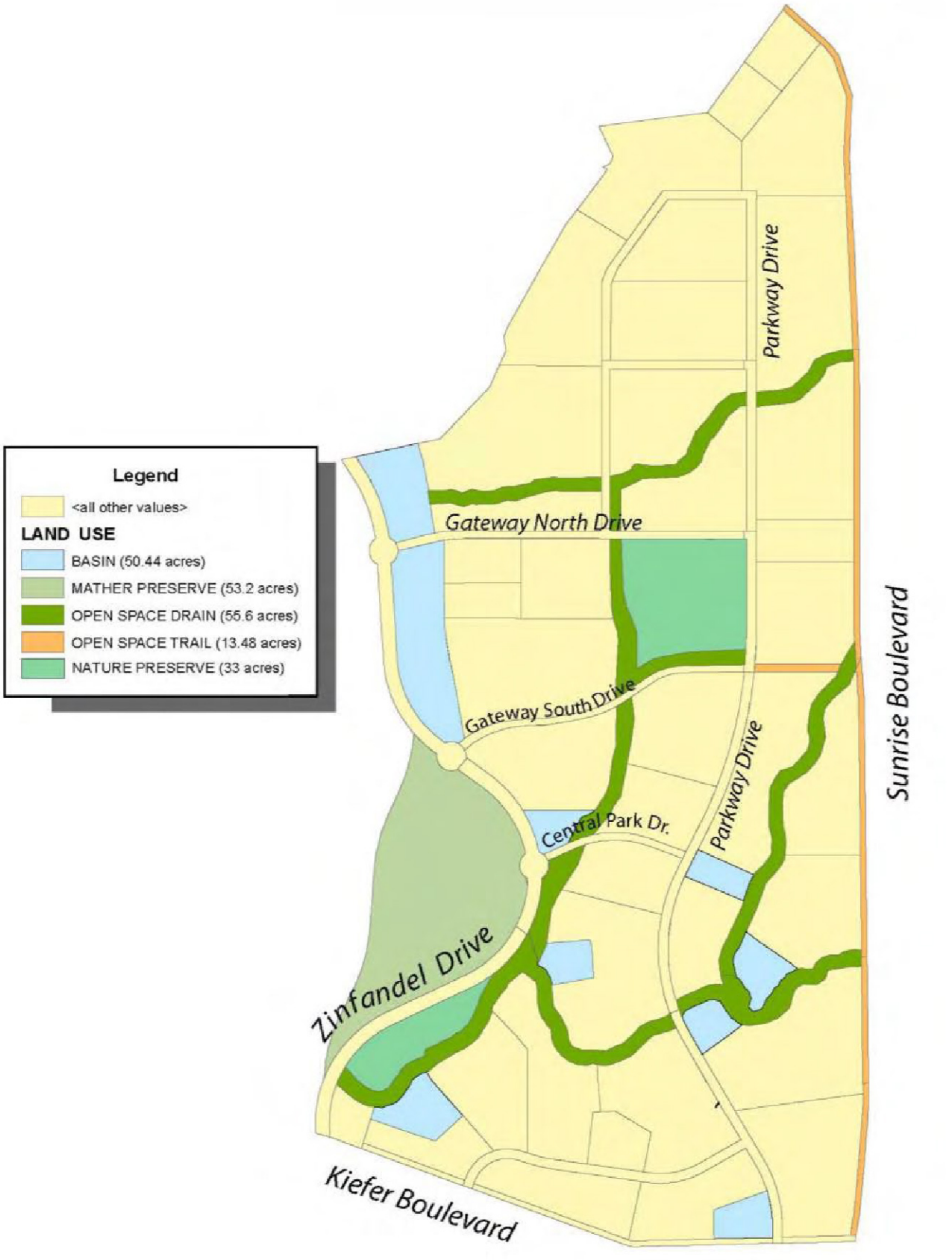
Open Space Trails and Basins

The Mather South Project includes multiple open space features including 53.2 acres of open space land in the Mather Preserve (on the west side of Zinfandel Drive), 33 acres of nature preserve (east of Zinfandel Drive), 55.6 acres of open space drainages, and 13.5 acres of open space trails (shown as OST on Plate PD-9 and Table PD-2) with pedestrian and bike trails. Refer to Plate PD-14 for an overview of open space areas proposed in the Plan Area.

There are ten proposed stormwater quality management basins (50.44 acres) that are located throughout the Plan Area that connect to major drainage open space corridors. The corridors convey stormwater to the basins, but also serve as a visual greenway and pedestrian/bike route linking all parts of the community. The basins would serve multiple purposes as they would provide a visual amenity and an informal recreation resource for the surrounding neighborhood. Portions of the basins may be configured for informal recreation use in the dry season. The basins would be "naturalized" with trees and native plant materials, and with contoured grading such that they blend with the surrounding terrain and the drainage corridors that feed them. On-site drainage is described in more detail below in "Infrastructure and Utilities/Public Services."

Fire Station

A new fire station is proposed within the Plan Area along Gateway Drive North near Zinfandel Drive within a residential parcel (R1; Plate PD-20). The fire station would be owned and operated by the Sacramento Metropolitan Fire District (Metro Fire). According to Metro Fire, a fire station must be approximately 3 acres of level, usable land, and have a minimum of approximately 400 feet of street frontage and be 300 feet deep. The site must also be at least 500 feet from a signal-controlled intersection at a major thoroughfare. The fire station would conform to the standards for such facilities established by Metro Fire.



Source: *Mather South Community Master Plan 2018*

X15010101 08 041

Plate PD-14: Proposed Open Space Areas

ASCENT ENVIRONMENTAL

CIRCULATION

The Community Master Plan includes a Transportation Plan (Chapter 4.4), which addresses both local transportation needs of the Mather South Project and the connections to the regional transportation network. The Transportation Plan establishes goals and policies that aim to develop a cohesive circulation system within the Plan Area. Some of the goals and policies of the Transportation Plan include the following:

- "Complete streets" will accommodate multiple modes of travel, including pedestrians, bicyclists, and automobiles.
- Use traffic calming roadway design techniques in residential streets and intersections, near schools, and parks to provide safe pedestrian access across roadways and in parking areas.
- All modes of transportation will be coordinated with the land use plan to enable safe, convenient, and effective movement of people, goods, and services throughout the Master Plan, without necessarily relying on private automobiles.
- Not less than 5 percent of all parking shall be electric vehicle charging stations at each commercial center, the Community Center, the research and development campus, and the Environmental Education Campus.

The Community Master Plan acknowledges that the project would be developed amidst the emergence of new technologies in transportation and communications, which could alter the development of the Mather South Project. Therefore, the Community Master Plan is planned to accommodate conventional automobiles while incorporating flexibility to transition to alternative travel modes, including autonomous vehicles, active transportation (bicycles), and variations on conventional cars, such as NEVs.

PROPOSED ROADWAY NETWORK

Currently, access to the north from Douglas Road is blocked by the Mather Golf Course, which extends along the entire north border of the Plan Area. Access to the east from Sunrise Boulevard is also blocked by the Folsom South Canal. Due to this limited access to the north and east, the internal road network in the Plan Area tends to focus the major collector streets with access to Zinfandel Drive and Kiefer Boulevard. The proposed roadway network includes arterial roads and collector roads that are oriented in a north-south/east-west grid pattern.

Zinfandel Drive is currently a two-lane road on the western side of the site that would become a four-lane arterial. It would include a Class IV bikeway on both sides of the road. Collector roads would be two-lane streets and would include a median on the primary entry roads (Gateway South Drive and Gateway North Drive). Collector streets would not allow on-street parking, but would provide a combined NEV and bicycle lane. Local roads would typically have two lanes with sidewalks, landscaping, pedestrian-scale lighting, shade trees, and other features that encourage walking. These would be low speed streets, with speed limits not exceeding 25 miles per hour, and traffic volumes of less than

5,000 average daily trips. Sidewalks would be either attached or detached, and parking would typically be provided on both sides of the roadway.

The proposed Transportation Plan has identified a route that would provide a future connection to Sunrise Boulevard over the canal from the Plan Area; however, the physical link including a road extension and bridge over the Folsom South Canal is not included as part of the Mather South Project.

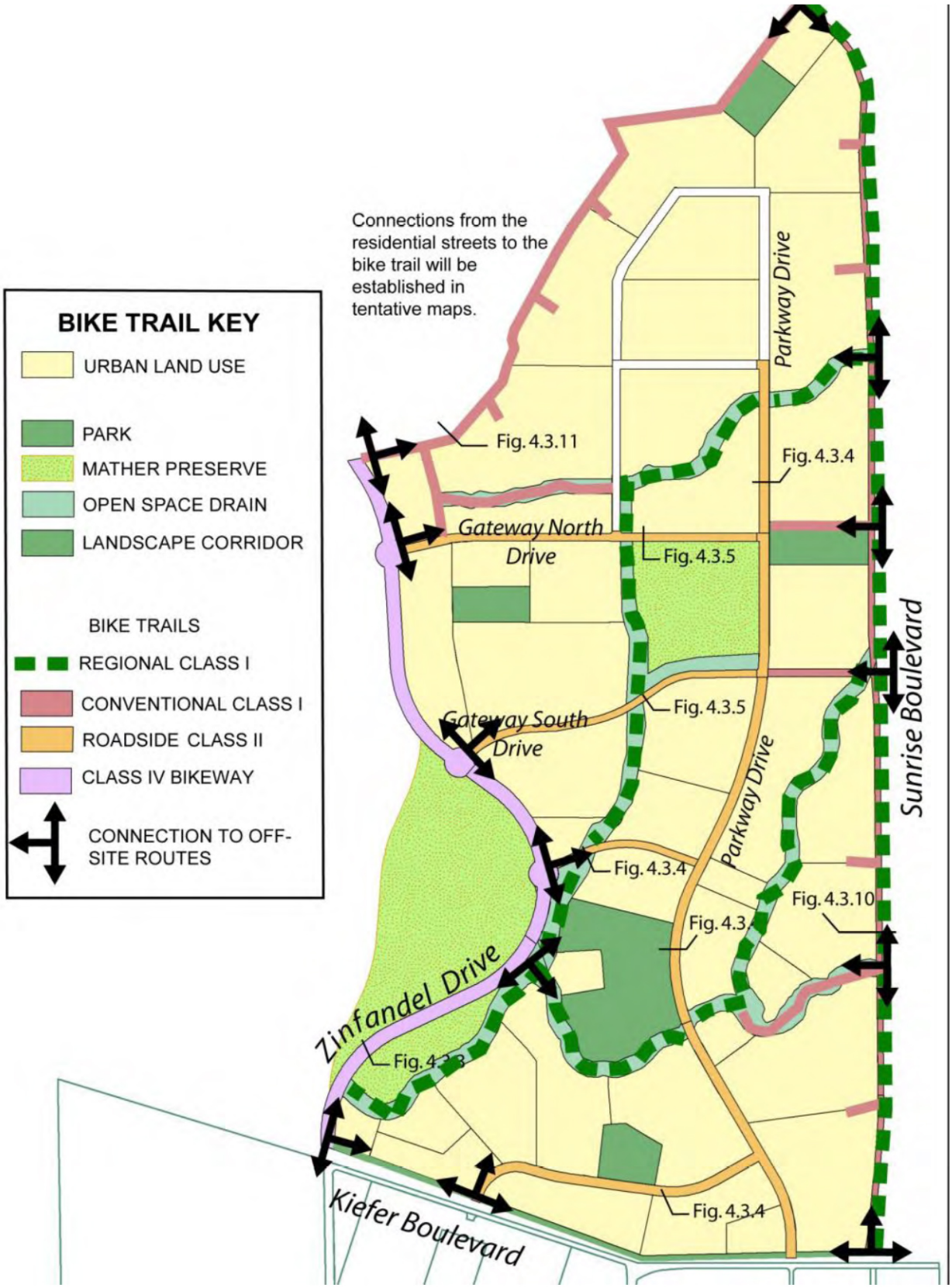
Bike and pedestrian network

Active transportation, including bicycles and pedestrian paths, is identified in the Community Master Plan as an important part of the project's transportation network. The project has been designed to provide a comfortable, safe, and interconnected pedestrian system that encourages walking and bicycling as a significant means of movement throughout the community. Multi-use trails in open space and sidewalks within the public rights-of-way of roadways are planned to connect residential neighborhoods to open space, parks, schools, the environmental education campus, the community center, the research and development park, and the commercial center. The bikeway system includes both off-street and on-street trails.

The bikeway system includes four distinct classes of bikeways:

- *Class I bicycle paths*. The proposed off-street trail system provides approximately 11 miles of Class I bicycle and pedestrian trails, parallel with Folsom South Canal and along both sides of the drainage corridors within the project. This multi-use trail system also connects to the regional trail and pedestrian system, recreational trails, open space, and commercial centers.
- *Class II bike lanes*. Class II bike lanes would be integrated with the collector street network and would be buffered from travel lanes by a minimum 4-foot wide painted striped marker pattern. Street signs would indicate the location of these bicycle lanes and major destination points. Class II bike lanes would connect with streets in the planned development communities south of Kiefer Boulevard and to the west through internal bike trails in those communities.
- *Class III bike lanes*. Class III bike lanes are signed bicycle routes (not striped bike lanes) and would be located on all residential streets.
- *Class IV bikeway (Cycle Track)*. These are bike lanes that are separated from the adjacent vehicle traffic lane through a solid vertical barrier or pavement markings. A class IV bikeway is planned along Zinfandel Drive.

The entire bikeway system would be built in phases conforming to the phased development of the Mather South Project. A map of proposed bicycle and pedestrian infrastructure is provided on Plate PD-15.



Source: Mather South Community Master Plan 2018

X15010101 08 042

Plate PD-15: Backbone Bike and Pedestrian Trail Network

ASCENT ENVIRONMENTAL

Transit Plan

The Mather South Project is located within Sacramento Regional Transit District's (RT) service area. RT provides light rail and fixed-route bus services in Sacramento County. The County's General Plan Transportation Plan and RT's Transit Action Plan identify Jackson Road and Sunrise Boulevard as Bus Rapid Transit/Hi-Bus routes. At this time, RT does not provide high-frequency transit service proximate to the Plan Area. As the Mather South Project is developed over time, RT or an independent provider, or a combination of both could provide transit service. The closest RT bus stop is currently located at Mather Boulevard and Bleckley Street, which is approximately 2.5 miles from the Plan Area.

The Mather South Project would provide an internal transit service for residents of the community. The conceptual transit route would run along roads adjacent to the commercial center, the environmental education campus, the elementary schools, the community center, parks, medium density residential, and the research and development park (refer to Plate PD-16). Approximately 90 percent of the Plan Area would be within a one-half mile walk of this route. Transit service from the Plan Area could connect to the larger RT transit system of existing bus stops and light rail stations such as Mather/Mills, Zinfandel, Cordova Town Center, or Sunrise to the north of the Plan Area.

The transit service operations would be phased over time. At buildout, this transit service would operate with 15-minute headways during weekday peak hours and 30-minute headways during weekday non-peak hours. As indicated in Policy 4.4-35 of the Community Master Plan, the Mather South Financing Plan would include a funding source to provide this transit service. Refer to Chapter 17 Transportation and Circulation for additional information regarding this project amenity.

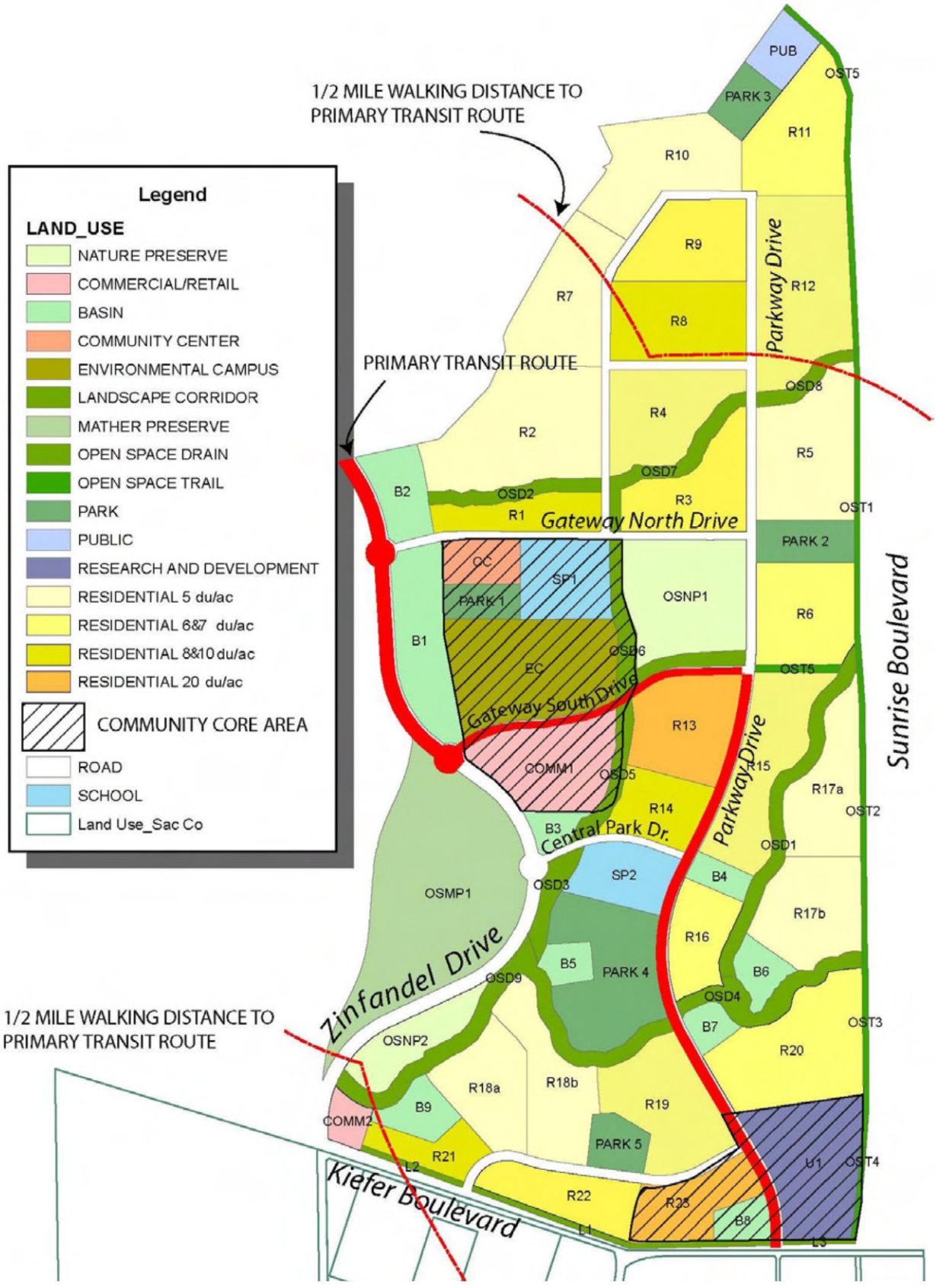
Infrastructure and Utilities/Public Services

The Mather South Project would require extensions of public infrastructure (sewer, water, drainage, and dry utilities) and expansion of public services. Public services include fire and police protection, public schools, library, animal protection services, and park and recreation services. For details related to provision of services and infrastructure, refer to Chapter 5 Public Facilities and Services of the Community Master Plan. Information on the proposed schools and fire station is provided above under "Proposed Land Uses." Additionally, the project's Public Facilities Financing Plan is included as Appendix PD-3 and the Urban Services Plan is included as Appendix PD-4.

Sewer Services

The Mather South Project would receive sewer service from the Sacramento Area Sewer District for intermediary trunk and collector systems and the Sacramento Regional County Sanitation District for regional interceptor pipes. As part of the Mather Field Project, a sewer line expansion along Zinfandel Drive was approved. The Mather South Project would connect to the newly expanded sewer line within Zinfandel Drive once it has been completed. The backbone collection system in the Plan Area would be

constructed within proposed street rights-of-way. Wastewater would flow by gravity west through the Plan Area, then north along Zinfandel Drive. Refer to Plate PD-17.



Source: Mather South Community Master Plan 2018

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Plate PD-16: Primary Transit Route Concept

ASCENT ENVIRONMENTAL



Source: Mather South Community Master Plan 2018

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Plate PD-17: Proposed Sewer Collection System

ASCENT ENVIRONMENTAL

WATER SUPPLY

The Mather South Project would receive water supplies from the Sacramento County Water Agency (SCWA) as the Plan Area is located within SCWA's Zone 40 North Service Area (NSA). The potable water transmission system would supply surface and groundwater deliveries to the NSA and would meet 100 percent of the build-out demand in the Plan Area. The Vineyard Surface Water Treatment Plant (WTP) NSA Pipeline Phase A would deliver potable water from the Vineyard Surface WTP to the Douglas Road Tanks located just north of the Plan Area. A one-million-gallon water tank to serve the Plan Area as well as the greater NSA of Zone 40 would be located in the northeast corner of the Plan Area, which would connect to an internal water supply delivery system as shown in Plate PD-18.

Initial service to the Plan Area would be from the Vineyard Surface WTP and from the North Vineyard Well Field and WTP. These supplies would be transported through an existing 30-inch diameter NSA Pipeline Phase A to the Anatolia Groundwater Treatment Plant located approximately 1.5 miles north of Kiefer Boulevard along Sunrise Boulevard. SCWA would install additional NSA transmission and storage facilities when regional water demands within the NSA warrant it. A grid of 8-inch to 12-inch mains will extend from the existing 30-inch diameter NSA Pipeline Phase A water main transmission main in Kiefer, the existing 16-inch diameter water line in Zinfandel Drive (south of Douglas Road) and the existing 16-inch diameter water line in Sunrise Boulevard to serve local developments within the Plan Area.

DRAINAGE

Pursuant to stormwater and water quality requirements, on-site basins would capture and control the release runoff within the Plan Area. As a result, stream flows where drainage exits from the site would not exceed historic levels for both the 10-year and 100-year storms. Basins would also accomplish flow duration control to avoid downstream creek bed erosion mitigating for the hydro modification impacts of the Mather South Project. The Storm Water Drain Master Plan (Mather South Community Master Plan-Technical Appendix A) provides data on the flows and capacities of the drainage subareas within and contributing to the Plan Area, and the differences between natural and improved areas. Plate PD-19 illustrates the location of the 10 basins in the Plan Area. Three are located adjacent to and parallel with the relocated Zinfandel Drive along the west edge of the site. Seven other basins are distributed along the southerly stream. A residual benefit of the basins along Zinfandel Drive would be the creation of an open space corridor and buffer along this street.

The primary purpose of the basins is stormwater management and water quality control. However, the location of the basins along the natural drainage corridors and their proximity to parks creates the possibility of providing multi-purpose basins, such as environmental education opportunities, pedestrian and bike trail routes, and informal recreation areas.

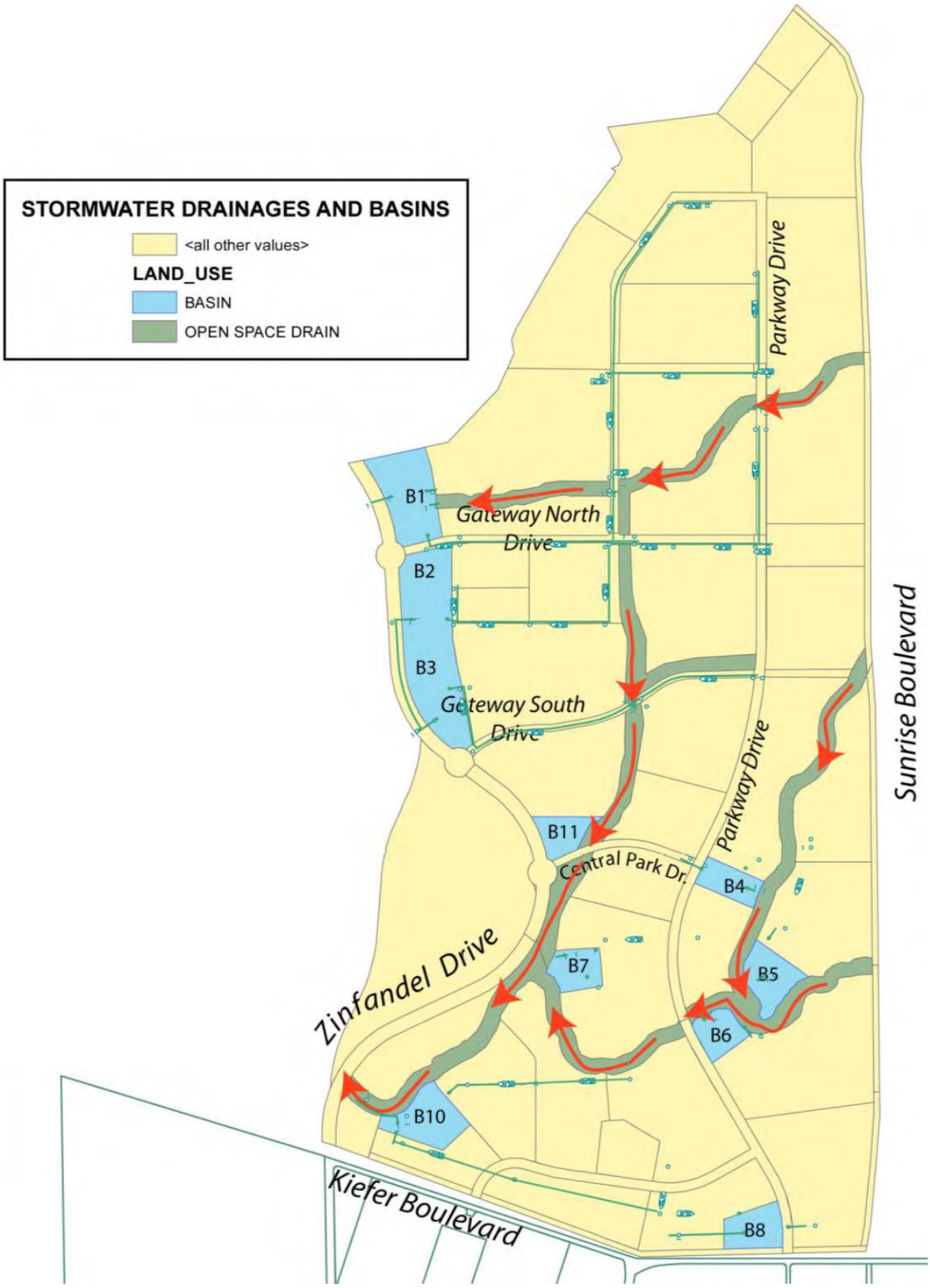


Source: Mather South Community Master Plan 2018

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Plate PD-18: Proposed Trunk Domestic Water Delivery System Diagram

ASCENT ENVIRONMENTAL



Source: Mather South Community Master Plan 2018

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Plate PD-19: Proposed Stormwater Drainages and Basins

ASCENT ENVIRONMENTAL

Electrical Services

The Mather South Project is within the service territory of the Sacramento Municipal Utility District (SMUD). SMUD owns and maintains power lines within the Plan Area and would be the provider of electrical service. SMUD has indicated that a distribution substation is needed within the Plan Area. Two potential locations for the facility have been identified. The distribution substation would receive electricity from the Jackson Bulk Substation along a 69-kV overhead subtransmission line that runs along the east side of Zinfandel Drive, or alternatively, along the east side of the Regional Bike Trail on the west side of the Folsom South Canal

Location A: The distribution substation would be located in the center of the Plan Area within COMM1 and receive the subtransmission line along the east side of Zinfandel Drive.

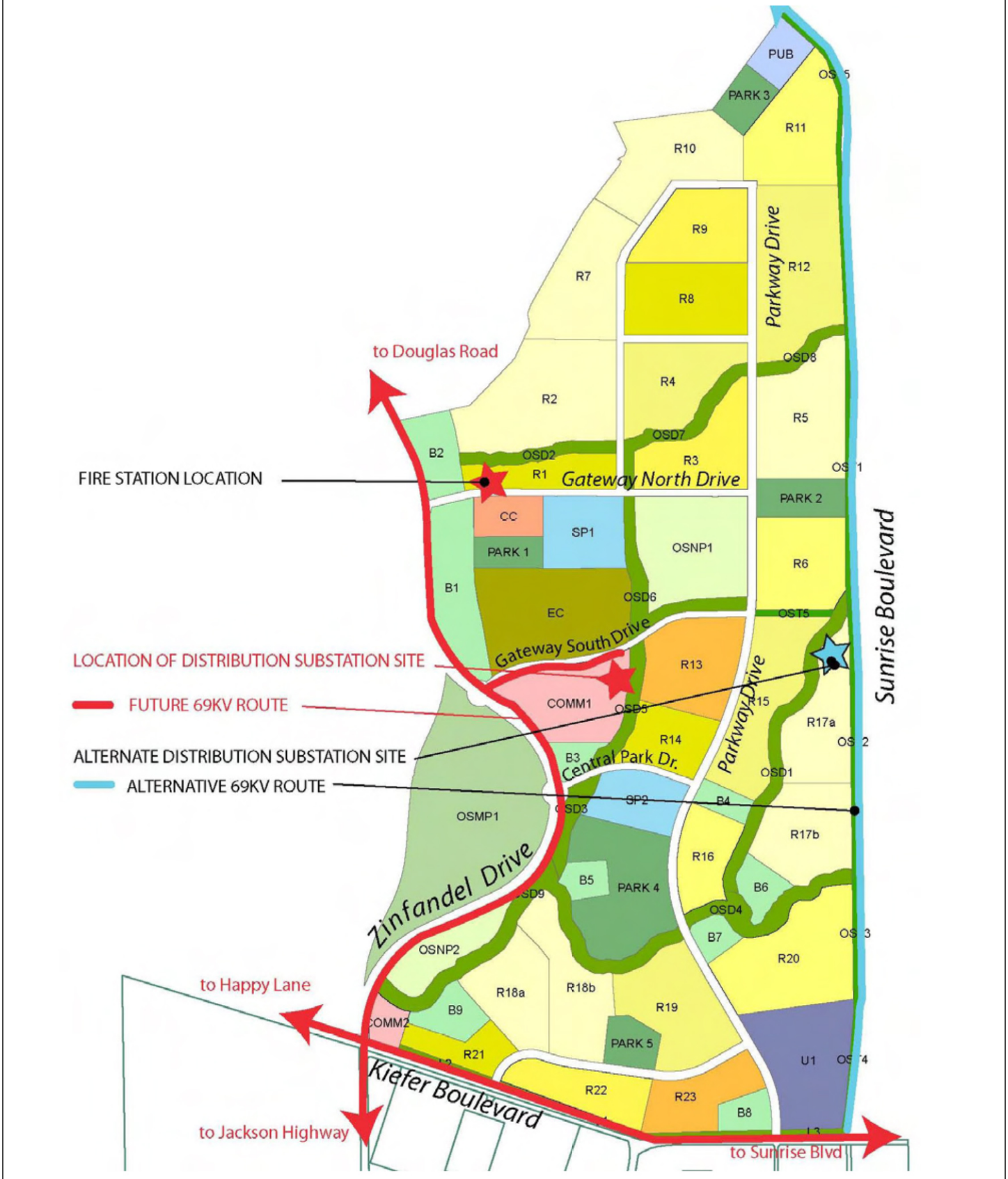
Location B: The distribution substation would be located on the eastern side of the Plan Area within R17a and receive the subtransmission line along the east side of the Regional Bike Trail on the west side of the Folsom South Canal.

Refer to Plate PD-20 for the locations of the proposed electrical infrastructure. A detailed description and evaluation of the Jackson Bulk Substation and distribution substation within the Mather South Project is located in Chapter 20 Summary of Impacts and Their Disposition. Environmental impacts associated with the construction of the distribution substation are analyzed within applicable resource areas especially related to ground disturbance (i.e., aesthetics, air quality, biological resources, cultural resources, etc.) of this EIR.

West Coast Gas will provide natural gas service within the Plan Area through existing gas line facilities external to the Plan Area. Gas facilities will be extended from Douglas Road south to Kiefer Boulevard.

Design Guidelines and Principles

The Community Master Plan includes Design Guidelines, Chapter 6, and Development Standards, Chapter 7, for the Plan Area. There are seven general principles and 61 design guidelines to implement the vision for development of the land uses in the community. The development standards provide physical standards for each major land use category, which include the permitted uses, residential type, minimum lot standards and setbacks, and specific conditions of the Plan Area. The County General Plan, Design Guidelines, and Zoning Code form the basis of the design criteria for the Plan Area; however, the Design Guidelines and Development Standards provide specific guidance on special conditions in the Plan Area and would result in the implementation of community character.



Source: Mather South Community Master Plan 2018

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Plate PD-20: SMUD Substation Locations

ASCENT ENVIRONMENTAL

PROJECT PHASING

The Mather South Project phasing plan is intended to provide for the logical, timely, and efficient provision of the infrastructure needed to support the planned development. The phasing plan includes four phases and would begin at the intersection of Zinfandel Drive and Gateway South Drive. Plate PD-21 illustrates the construction sequence for required improvements to support the phased development. Table PD-3 below summarizes the land use by phase. Following the certification of this EIR and adoption of the General Plan Amendment and the Community Master Plan by the County of Sacramento, the phased development of the Plan Area would commence in a manner designed to address the following objectives:

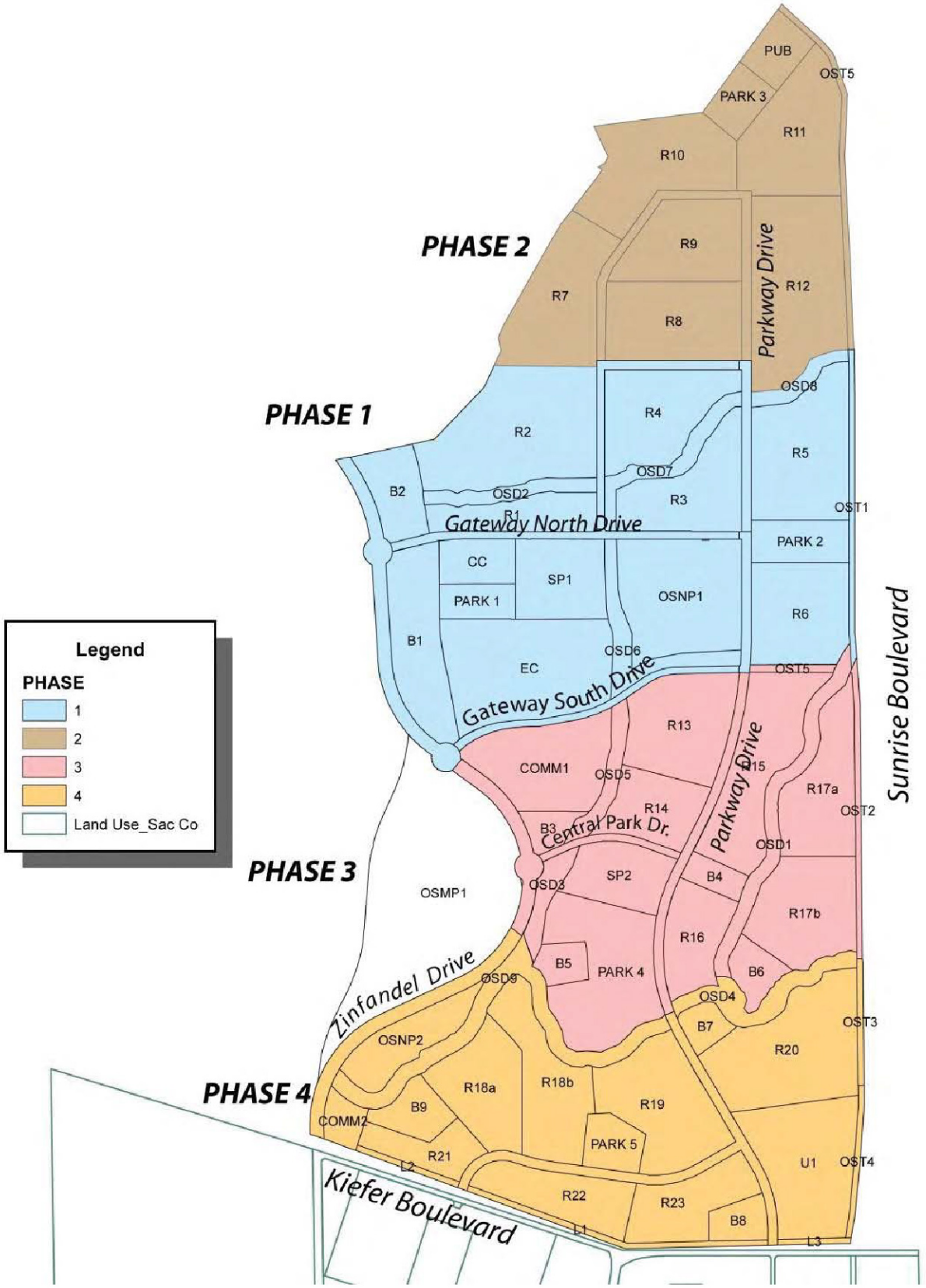
- orderly build-out of the community based upon market and economic conditions;
- implementation of financing mechanisms without creating a financial or administrative burden on the County of Sacramento;
- provision of adequate infrastructure and public facilities concurrent with development of each phase; and
- protection of public health, safety, and welfare.

Table PD-3: Land Use by Phase

Land Use	Phase				Totals
	One	***Two***	***Three***	***Four***	
Park Acres	11.6	5	22.5	5	**44.1**
School Acres	12.2	0	10	0	**22.2**
Commercial Acres	0	0	18	3.1	**21.1**
Environmental Education Campus Acres	27.9	0	0	0	**27.9**
Research and Development Acres	0	0	0	21.4	**21.4**
Open Space Acres	68.1	6.7	87.4	48.4	**210.6**
Residential Acres	115.1	120.7	90.5	105.9	**432.2**
Dwellings Units	943	853	846	879	**3,522**
Total Acres	262.5	144.4	241.2	200.2	**848.2**

Infrastructure requirements for each phase of development include all on-site backbone infrastructure and off-site facilities necessary for each phase to proceed. Among those facilities required are roadways, sanitary sewers, water transmission and storage, storm drainage retention/detention/treatment facilities, dry utilities, parks, recreation, school and other civic facilities needed to meet County standards.

This EIR addresses all known infrastructure needs based on information provided by the County and other service providers; any additional assumptions or analysis would be too speculative to evaluate at this time, and are therefore not required to be addressed at this time (California Environmental Quality Act Guidelines Section 15145).



Source: *Mather South Community Master Plan 2018*

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Plate PD-21: Phasing Map

ASCENT ENVIRONMENTAL

PROJECT OBJECTIVES

The primary objectives for the project are as follows:

1. By way of a mutually beneficial public/private partnership, accomplish the reuse of a portion of the former Mather A~~R~~**F**B as a mixed-use, master planned, residential community.

2. Improve the balance between the projected number of jobs and housing units within the air force base reuse plan.

3. Improve the financial means to support the infrastructure, both physical and biological, of the ~~a~~**A**ir ~~f~~**F**orce ~~b~~**B**ase reuse plan.

4. Provide the opportunity for the development of an environmental education campus to provide environmental education and research proximate to the Mather Preserve and create employment opportunities and generate economic activity to fulfill the goals of the reuse of the former Mather AFB.

5. Provide the opportunity for the development of a technological research and development campus to create employment opportunities and generate economic activity to fulfill the goals of the reuse of the former Mather AFB.

6. Develop a mixed-use, master planned community guided by state, regional, and county principles of feasibility and sustainability.

INTENDED USES OF THE EIR

The Sacramento County Planning Commission and the Board of Supervisors will use the information contained in this EIR to evaluate the Mather South Project and render a decision to approve or deny the requested entitlements. Responsible agencies may also use the EIR for their own planning/permitting purposes. Based on the potential effects known at this time, responsible agencies may include (but may not be limited to) U.S. Army Corps of Engineers, U.S. Fish & Wildlife Service, California Department of Fish & Wildlife, the California Regional Water Quality Control Board, West Coast Gas Company, SMUD, SCWA, Cordova Recreation and Park District, and the Elk Grove Unified School District.

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2 ALTERNATIVES

INTRODUCTION

This chapter evaluates potential alternatives to the Mather South Project. The identified alternative projects would avoid or substantially reduce significant effects of the project, consistent with Section 15126.6(f) of the State California Environmental Quality Act (CEQA) Guidelines. As detailed in Chapters 3 through 18 and summarized in Chapter 19, the project would result in potentially significant impacts that could be avoided with the implementation of identified mitigation measures in airport compatibility, climate change, cultural resources, geology and soils, hazards, hydrology and water quality, and land use. Impacts were determined to be significant and unavoidable in aesthetics, air quality, biological resources, noise and traffic and circulation. A full description of environmental impacts and mitigation measures is included in the Executive Summary of this EIR.

The original Notice of Preparation for this project was issued in June 2014 which proposed a similar mixed-use master planned community containing residential, commercial, civic, and educational uses. The Sacramento County Board of Supervisors (Board) conducted a public hearing on the Mather Field Project on September 16, 2015 during which public testimony against the project was received. The Board chose to not take action on the project and directed County staff to engage in a collaborative process with key stakeholders, to work through technical issues and define a concept plan that focused on the concerns that were raised during the hearing.

The Mather South Project evaluated in this EIR is the result of the collaboration among the Mather Stakeholder Group, County staff, and the project applicant and addresses concerns previously raised. The main revisions are the elimination of the original university concept and replacement with a smaller Environmental Education Campus, the elimination of the sports complex, and inclusion of additional preserve area with associated open space corridors. The Mather Preserve was expanded to the east to protect known biological resources; approximately 53.2 acres of the Mather South Project area is now included in the Mather Preserve. Zinfandel Drive was also realigned to run along the eastern border of the expanded preserve area.

PROJECT OBJECTIVES

The primary objectives for the project are as follows:

1. By way of a mutually beneficial public/private partnership, accomplish the reuse of a portion of the former Mather Air Force Base (AFB) as a mixed-use, master planned, residential community.

2. Improve the balance between the projected number of jobs and housing units within the air force base reuse plan.

3. Improve the financial means to support the infrastructure, both physical and biological, of the air force base reuse plan.

4. Provide the opportunity for the development of an environmental education campus to provide environmental education and research proximate to the Mather Preserve and create employment opportunities and generate economic activity to fulfill the goals of the reuse of the former Mather AFB.

5. Provide the opportunity for the development of a technological research and development campus to create employment opportunities and generate economic activity to fulfill the goals of the reuse of the former Mather AFB.

6. Develop a mixed-use, master planned community guided by state, regional, and county principles of feasibility and sustainability.

RANGE OF ALTERNATIVES

Potential project alternatives carried forward for analysis were selected based on their ability to meet some or most of the project's stated objectives while reducing the significant effects of the project.

CALIFORNIA ENVIRONMENTAL QUALITY ACT REQUIREMENTS

The State CEQA Guidelines require analysis of a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the project's basic objectives and avoid or substantially lessen any of the significant effects of the project (Section 15126.6[a]). The range of potentially feasible alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice. The State CEQA Guidelines further require that the alternatives be compared to the project's environmental impacts and that the "no project" alternative is considered (Section 15126.6[d] [e]).

In determining what alternatives should be considered in the EIR, it is important to acknowledge the objectives of the project, the project's significant effects, and unique project considerations. These factors are crucial to the development of alternatives that meet the criteria specified in Section 15126.6(a). Only feasible alternatives need be considered. "Feasibility" of alternatives is described in the State CEQA Guidelines (Section 15364) as "capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, legal, social, and technological factors." The ultimate determination as to whether an alternative is feasible or infeasible is made by the lead agency's decision-making body (see PRC Section 21081[a] [3].)

ALTERNATIVES DISMISSED FROM DETAILED EVALUATION

Consistent with State CEQA Guidelines Section 15126.6(c), a brief discussion of those alternatives considered but rejected follows below. Among the factors that may be used to eliminate alternatives from detailed consideration in an EIR are:(i) failure to meet most of the basic project objectives, (ii) infeasibility, or (iii) inability to avoid significant environmental impacts.

OFFSITE ALTERNATIVE

Under an offsite alternative, the project would be developed on a separate site within the unincorporated County. An alternative site would need to be of a similar size as the Plan Area (848 acres) and would need to be able to be acquired by the applicant. Further, the alternative site would need to be located a similar distance from downtown Sacramento to provide the similar benefits to residents including short commute times, and future transit access. There are no similar sites available within the UPA that have readily available infrastructure.

The Mather South Project is proposed to be developed within the southeast portion of the Mather Field Specific Plan Area. The Mather Field Specific Plan Area is in eastern Sacramento County and is the former site of the Mather AFB which began operations in 1918. After the base was recommended for closure in 1990, the Board began to plan for the adoption of a Specific Plan to redevelop the area. In 1995, 4,012 acres of the former Mather AFB were designated as a redevelopment area by the Board. The Mather Field Specific Plan was adopted by Sacramento County in 1997. The Mather South Project is consistent with the primary project objective to redevelop a portion of the Mather Field Specific Plan area, and the project's design and location are consistent with the development plans for the Mather Field Specific Plan Area. Even if an offsite alternative were available, it would not meet the primary project objective for the redevelopment of Mather Field. Therefore, an offsite alternative cannot be considered a potentially feasible project alternative.

GENERAL PLAN CONSISTENT ALTERNATIVE

The General Plan Consistent alternative would result in the development of the Plan Area consistent with the current land use designations for the site which is Urban Development Area (UDA). The UDA designation was adopted because of the approval of the Mather Field Project in 2016. The UDA designation indicates where the County will conduct studies leading to the appropriate configuration of urban land uses for the area or will accept applications to prepare a master plan (such as a specific plan) for the area. The UDA-designated areas are lands that would be converted to urban uses to accommodate the growth that is projected to occur during the 25-year planning period. Urban development and/or rezones cannot occur in these areas until a master plan has been approved and the UDA designation has been removed. Therefore, the UDA designation is a "holding" designation that does not assign allowable densities. The project has been designed to meet the intent of the UDA designation and to further the planning for Plan Area to accommodate future growth. A project that is designed only for a UDA designation would not allow the appropriate level of planning and evaluation

to occur to allow for future growth. For this reason, this alternative has been rejected from further evaluation.

STAFF RECOMMENDED LAND USE ALTERNATIVE

The Staff Recommended Land Use alternative would result in the development of a similar mix of land uses as the Mather South Project; however, the alternative would also include an additional 534 high-density residential units within the 21-acre Research and Development Campus at the southern portion of the Plan Area. This alternative was considered during the application process and included in the Notice of Preparation and evaluated quantitively in Transportation Impact Report (November 2018). The County's goal in considering this alternative was to meet the County's General Plan Housing Element requirements outlined in Policy LU-120. This policy requires master and specific plans to meet a minimum of greater than or equal to 90 percent of Sacramento County's Regional Housing Needs Allocation obligation for lands designated for 20 dwelling units or greater per net acre (RD-20). This would result in providing 4,056 housing units at the site. To meet this requirement an alternative that had a minimum of an additional 534 units would need to be considered.

The Staff Recommended Land Use alternative would meet the requirements of Policy LU-120 by providing an additional 534 high-density residential units, within the land area used for the 21-acre Research and Development Campus. The proposed increased residential development in this alternative would increase the intensity of development in the Plan Area. While the overall footprint of development would not change, as described in the traffic analysis, this alternative would result in increased traffic impacts because of additional vehicle trips associated with the residential units. Additionally, impacts related to air quality, greenhouse gas emissions, and noise would also increase related to increased vehicle trips. Because this alternative would result in an overall increase environmental impacts for several resource areas and would not reduce any of the project's significant impacts, this alternative has been rejected from further evaluation.

DESCRIPTION OF ALTERNATIVES

ALTERNATIVE 1: NO PROJECT

State CEQA Guidelines Section 15126.6 (e)(1) requires that the no project alternative be described and analyzed "to allow decision makers to compare the impacts of approving the project with the impacts of not approving the project." The no project analysis is required to discuss "the existing conditions at the time the notice of preparation is published…as well as what would be reasonably expected to occur in the foreseeable future if the project were not approved, based on current plans and consistent with available infrastructure and community services."

Under the No Project Alternative, the project would not be built on the site and the site would remain in its current undeveloped state. No physical environmental changes to the site would occur. However, as with the project, there would be potential for development proposals in the future subject to environmental review and approval by

the Board. Nonetheless, for purposes of this analysis, it is assumed that the site would be unchanged from existing conditions.

ALTERNATIVE 2: BIOLOGICAL RESOURCES AVOIDANCE ALTERNATIVE

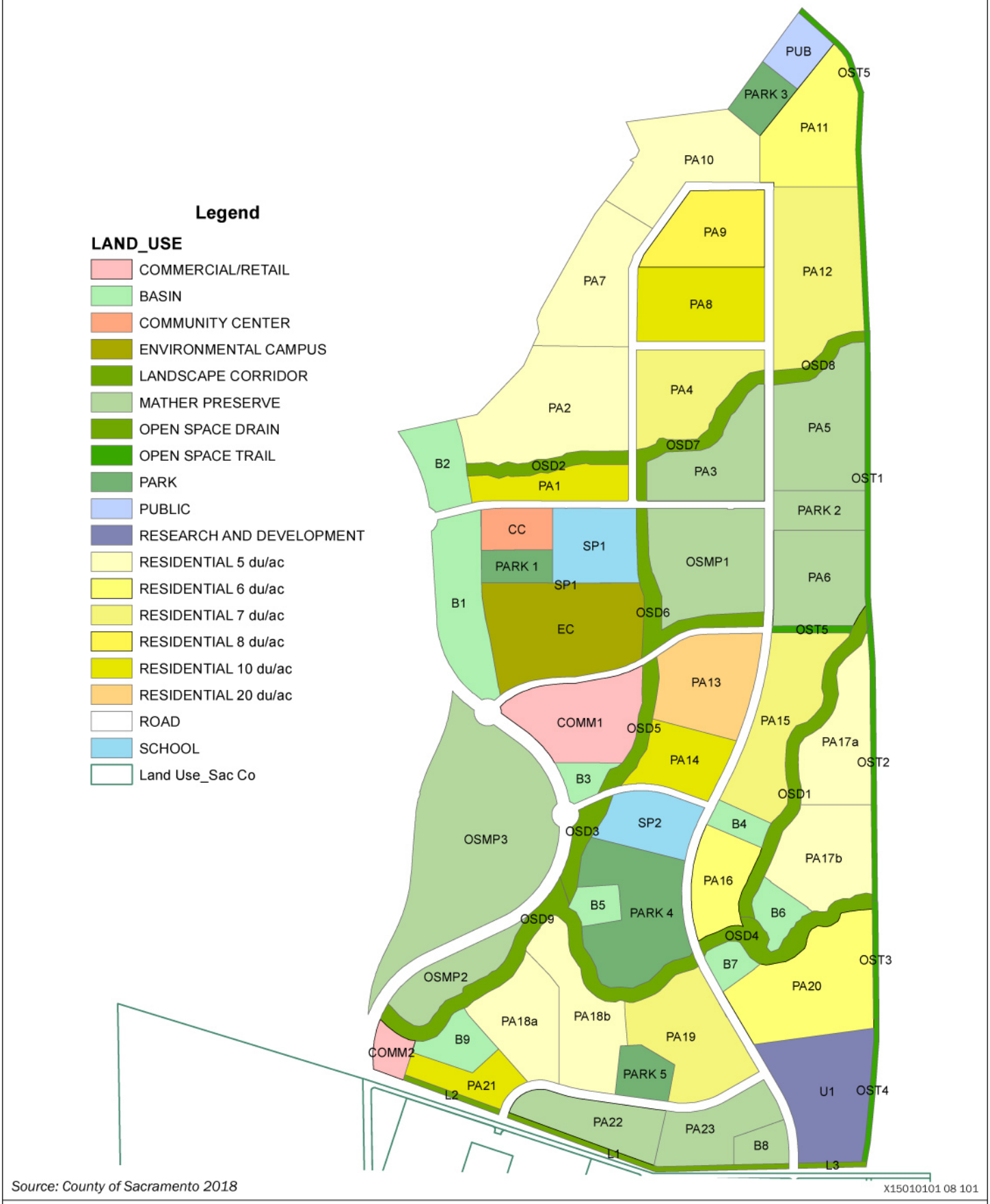
This alternative considers the preservation of additional sensitive biological resources and areas within the land use plan. This alternative would provide additional buffers around sensitive vernal pools along Kiefer Boulevard in the southern portion of the project and around the critter pool in the center of the Plan Area. This alternative would result in a reduced project development footprint (by 88.3 acres or approximately 10 percent). The northern parcels R3, R5, R6 and PARK 2 totaling 61 acres and adjacent roadways totaling 6.3 acres located north and east of the critter pool would be retained as an open space/preserve area by expanding the proposed open space/preserve area identified as OSMP1. The alternative would also retain southern residential parcels R22, R23, and the adjacent drainage/detention basin B8 totaling 27.3 acres as open space/preserve. Under this alternative, the Plan Area would develop 2,827 residential units, a reduction of 695 units. The proposed development of commercial uses, the research and development campus, the environmental education campus, and other parks and schools would remain the same as the original project. Plate Alt-1 shows the potential development concept for this alternative.

ALTERNATIVE 3: INTENSITY SHIFT ALTERNATIVE

The Intensity Shift Alternative would result in a reconfiguration of the land use map within the Plan Area, such that all commercial uses are shifted to the south along Kiefer Boulevard, and the residential uses are shifted to the north. This would result in the development of the same number of allowable residential dwelling units and commercial and retail, civic and open space areas as the project (refer to Table PD-2). In this scenario, the alternative would displace the density assigned to residential uses in parcels R20, R22, and R23, and reallocate across the Plan Area. Similarly, this alternative would result in the commercial and retail uses currently assigned to parcels CC and Comm being moved south and reoriented to be developed in the parcels previously occupied by R20, R22, and R23. The environmental education campus and school sites would remain in their current central location. The 21-acre research and development campus would remain in the southeastern portion of the property. Plate Alt-2 shows the potential development concept for this alternative.

ALTERNATIVE 4: REDUCED SCALE ALTERNATIVE

This Reduced Scale Alternative would result in a decrease in the scale of the project to 2,102 dwelling units (compared to 3,522 dwelling units or 40 percent decrease) and 480,000 square feet of commercial and retail uses (compared to 800,000 square feet or 40 percent decrease) within the same project footprint. This alternative would result in a shift from higher density parcels and multi-family units (up to 20 dwelling units/acre) to redistribute residential units such that all units would be low-density and single-family units (up to 5 dwelling units/acre). The higher density residential uses in the Plan Area within parcels R1, R3, R4, R5, R9, R13, R14, R15, R16, R19, R21, R22, R23, and R24 would remain residential, but would result in a maximum of 5 dwelling units per acre with an RD-5

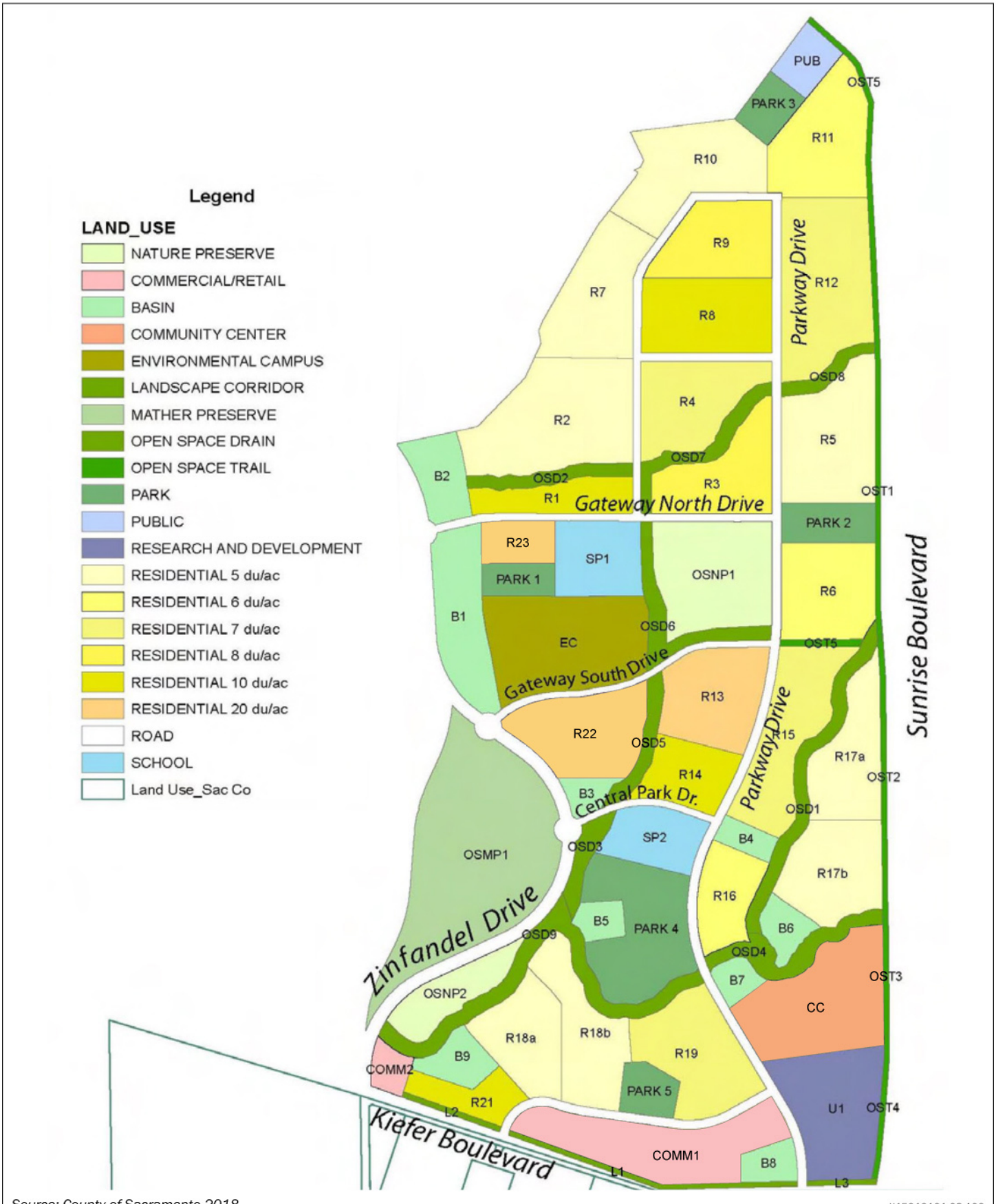


Source: County of Sacramento 2018

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Plate Alt-1: Mather South Biological Resources Avoidance Alternative

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Source: County of Sacramento 2018

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Plate Alt-2: Mather South Land Use Plan Intensity Shift Alternative

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land use. This alternative would change the proposed 29-acre environmental education campus parcel (formerly designated EC; now R25) to low-density residential land use and eliminate the 375,000 square foot educational portion of the parcel which would have included classrooms, office space, satellite labs and other research supportive facilities. This alternative would also change the proposed 21-acre research and development campus (formerly designated U1; now R24) in the southeastern portion of the Plan Area to low-density residential land use. Under this alternative, the 15,000 square foot civic use would remain in the central portion of the Plan Area. Plate Alt-3 shows the potential development concept for this alternative.

COMPARATIVE EVALUATION OF ALTERNATIVES

The following discussion evaluates the three project alternatives identified above. Table ALT-1 summarizes which project objectives are met by the identified alternatives. Table ALT-2 summarizes the effects of the alternatives relative to the project.

Table ALT-1: Comparison of Alternatives and Project Objectives Met

Project Objectives	Objective Met?			
	No Project Alternative 1	Biological Resources Avoidance Alternative 2	Intensity Shift Alternative 3	Reduced Scale Alternative 4
By way of a mutually beneficial public/private partnership, accomplish the reuse of a portion of the former Mather AFB as a mixed-use, master planned, residential community.	No	Yes	Yes	Yes
Improve the balance between the projected number of jobs and housing units within the air force base reuse plan.	No	Yes	Yes	Yes
Improve the financial means to support the infrastructure, both physical and biological, of the air force base reuse plan.	No	Yes	Yes	Yes
Provide the opportunity for the development of an environmental education campus to provide environmental education and research proximate to the Mather Preserve and create employment opportunities and generate economic activity to fulfill the goals of the reuse of the former Mather AFB.	No	Yes	Yes	No
Provide the opportunity for the development of a technological research and development campus to create employment opportunities and generate economic activity to fulfill the goals of the reuse of the former Mather AFB.	No	No	Yes	No
Develop a mixed-use, master planned community guided by state, regional, and county principles of feasibility and sustainability.	No	Yes	Yes	Yes

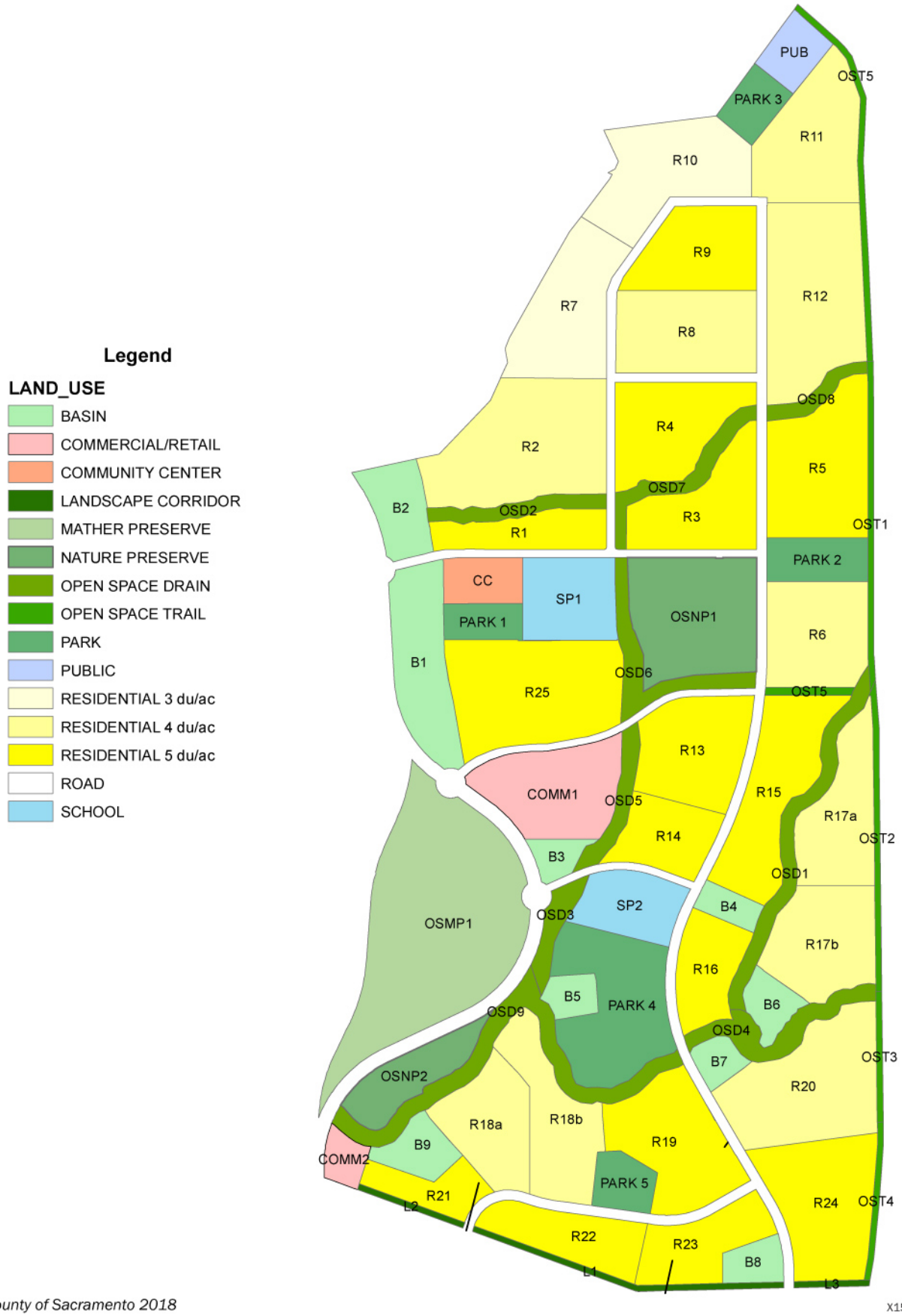


Plate Alt-3: Mather South Low-Density Alternative Land Use Plan

Table ALT-2
Comparison of the Environmental Impacts of the Alternatives in Relation to the Proposed Project

Environmental Topic	Proposed Project	No Project Alternative 1	Biological Resources Avoidance Alternative 2	Intensity Shift Alternative 3	Reduced Scale Alternative 4
Aesthetics	SU	Less	Similar, slightly less	Similar. slightly more	Similar
Air Quality	SU	Less	Less	Similar, slightly more	Similar
Airport Compatibility	LTSM	Less	Similar	Similar	Similar
Biological Resources	SU	Less	Less	Similar	Similar
Climate Change/Greenhouse Gas Emissions	LTSM	Less	Less	Similar, slightly more	Similar
Cultural Resources	LTSM	Less	Similar, slightly less	Similar	Similar
Energy	LTS	Less	Less	Similar	Similar
Geology and Soils	LTSM	Less	Similar, slightly less	Similar	Similar
Hazardous Materials	LTSM	Less	Similar, slightly less	Similar	Similar
Hydrology and Water Quality	LTSM	Less	Similar, slightly less	Similar	Similar
Land Use	LTSM	Less	Less	Less	More
Noise	SU	Less	Less	Similar. slightly more	Less
Public Services	LTS	Less	Less	Similar	Similar
Public Utilities	LTS	Less	Less	Similar	Similar
Traffic and Circulation	SU	Less	Less	Similar	Less
Water Supply	LTS	Less	Less	Similar	Similar

Notes: LTS = Less Than Significant Impact, LTSM = LTS with Mitigation, SU = Significant and Unavoidable
Source: Compiled by Ascent Environmental in 2018

ALTERNATIVE 1: NO PROJECT

CEQA requires consideration of the No Project Alternative, which addresses the impacts associated with not moving forward with the project. The purpose of analyzing the No Project Alternative is to allow decision-makers to compare the impacts of the project versus no project. With the implementation of the No Project Alternative, there would be no development or physical changes to the Plan Area. The Plan Area would remain undeveloped, and consist primarily of grasslands, with seasonal wetlands, vernal pools, and scattered remnants of previously used military infrastructure from historic Mather AFB.

EVALUATION OF ENVIRONMENTAL EFFECTS

AESTHETICS

Under the No Project Alternative, the undeveloped nature of the Plan Area would not change. No buildings, roadways, or infrastructure would be improved. Unlike the project, there would be no significant and unavoidable impacts to visual quality, and mitigation would not be required to reduce light and glare impacts. Overall, impacts would be less under this alternative.

AIR QUALITY

The No Project Alternative would not generate any air pollutants form construction or operational activities. Unlike the project, this alternative would not result in significant and unavoidable long-term operational emissions and would not require mitigation to reduce construction-related criteria air pollutants, reduce odor impacts, and reduce air emission impacts on sensitive receptors. Air quality impacts would be less under this alternative.

AIRPORT COMPATIBILITY

The No Project Alternative would not result in the construction and development of buildings or infrastructure and would not bring new sensitive receptors to the Plan Area. This alternative would not require mitigation to reduce airport safety hazards and airport noise like the project. Even though the project would result in less than significant impacts related to building heights and bird hazards, and no impacts related to air traffic patterns, this alternative would result in less impacts. Overall, this alternative would result in less impacts than the project.

BIOLOGICAL RESOURCES

The No Project Alternative would not result in potential impacts to special-status species or sensitive habitats as no development or construction-related disturbance would occur. This alternative would not result in significant and unavoidable impacts to Swainson's hawk and habitat, or to offsite areas of sensitive biological resources because of roadway improvements. This alternative would not require mitigation to reduce impacts to vernal pool species, special-status plants, western spadefoot habitat, valley elderberry longhorn beetle habitat, western pond turtle, tricolored blackbird,

burrowing owl, American badger, wetlands, wildlife movement, or the tree ordinance. Overall, impacts would be less compared to the project.

CLIMATE CHANGE

The No Project Alternative would not result in the production of greenhouse gas (GHG) emissions related to construction or operation activities. This alternative, unlike the project, would not require mitigation to reduce project emissions to less than significant. GHG emissions under this alternative would be less than the project.

CULTURAL RESOURCES

Implementation of the No Project Alternative would not disturb any known or unknow cultural resource, archaeological resource, or human remains because no development would occur. The No Project Alternative would not result in disturbance to tribal cultural resources. The No Project Alternative would not require mitigation to reduce potentially significant impacts to less than significant like the project. Overall, cultural and tribal cultural resources impacts would be less under this alternative.

ENERGY

Under the No Project Alternative, the Plan Area would remain undeveloped or in its existing rural state. Therefore, no energy would be used for construction or operational activities. Even though the project would not result in significant energy impacts, impacts to energy under this alternative would be less.

GEOLOGY AND SOILS

Under the No Project Alternative, no changes to site geology or soils would occur. No structures or roadway infrastructure would be developed, and no risk would occur related to seismicity or unstable soils. While the project would not result in significant impacts related to seismicity, soil erosion, expansive soils, minerals or agricultural soils, under this alternative, impacts would be less. This alternative would not require mitigation to reduce impacts to paleontological resources to less than significant like the project. Overall, impacts would be less under this alternative.

HAZARDS AND HAZARDOUS MATERIALS

Under the No Project Alternative, no changes to the soils within the Plan Area, or disturbance would occur which could expose nearby residents or workers. Unlike the project, there would be no need for mitigation to reduce impacts related to hazardous materials upset, proximity to schools, or issues related to portions of the site having been listed on the Cortese List. No changes would occur related to the nature of emergency response plans or wildfires. Overall, impacts would be less under the alternative as compared to the project.

HYDROLOGY AND WATER QUALITY

Implementation of the No Project Alternative would result in no changes to the existing hydrology or water quality of the site and in the vicinity. No changes related to flooding or downstream contributions would occur nor would mitigation be required, as under the project. No hydromodification would occur to the site, resulting in the need for mitigation

as under the project. No project construction activities would occur that would disturb soils, even as the project would result in less than significant water quality issues. No changes would occur that would result in greater risk related to dam failure. Impacts would be less under this alternative.

LAND USE AND PLANNING

Under the No Project Alternative, no development would occur. Therefore, like the project there would be no impacts related to dividing an existing community. There would be less potential for conflicts with land use policies enacted to reduce environmental impacts, even though the project would not result in significant impacts in this category. Under this alternative there would be no development of residential uses near Kiefer Boulevard, and therefore, no potential for adjacency issues related to the existing rendering plant. Overall, impacts would be less under this alternative.

NOISE

Under the No Project Alternative, there would be no development of commercial, education, or residential facilities. Therefore, noise and vibration related to construction activities would not occur, and mitigation would not be necessary. Traffic noise would not increase above the existing ambient noise present currently, so ambient noise increases would not occur under this alternative. Stationary noise sources would not be developed under this alternative, so significant and unavoidable noise related to stationary sources under the project would not occur. Impacts would be less.

PUBLIC SERVICES

Under the No Project Alternative, no residential, commercial or educational uses would be developed. Therefore, new demand for fire protection, law enforcement, schools, parks, and libraries would remain the same as it is now in the undeveloped state. While the project does not result in significant impacts because of the payment of required fees and building a new fire station, demand for services would be less under the No Project Alternative.

PUBLIC UTILITIES

Under the No Project Alternative, the demand for wastewater and solid waste services would remain low because of the undeveloped nature of the Plan Area. Even as the project would result in less than significant impacts, demand for these services and capacity would rise in the developed state. Impacts would be less compared to the project for this alternative.

TRAFFIC AND CIRCULATION

Under the No Project Alternative, the Plan Area would not be developed with land uses that will require new and improved roadway infrastructure. Significant and unavoidable impacts related to roadway segments and freeway operations would not occur under this alternative, as would under the project. Intersections operations, bicycle and pedestrian infrastructure, and rural roadway functionality would not require mitigation under this alternative as with the project. Transit facilities and emergency access would not change nor would demand increase for these features under this alternative, even

as these topics are less than significant under the project. Impacts would be less under this alternative.

WATER SUPPLY

Under the No Project Alternative, no development would occur that would require new water supplies to be utilized within the Plan Area. Even though the project would result in less than significant impacts related to capacity, entitlements, groundwater availability and recharge, impacts would be less under this alternative because no new demand would occur.

SUMMARY

Overall, the No Project Alternative would reduce impacts in all resource areas compared to the project, however, it would not meet any of the project objectives.

ALTERNATIVE 2: BIOLOGICAL RESOURCES AVOIDANCE ALTERNATIVE

The Biological Resources Avoidance Alternative assumes that development of the Plan Area would be limited to approximately 760 acres of the Plan Area, (a reduction of 10% from the project) see Plate Alt-1. Under this alternative, additional buffers would be provided around sensitive vernal pools along Kiefer Boulevard in the southern portion of the project and around the critter pool in the center of the Plan Area. Development under this Alternative would be similar to the project because it would include a mix of residential, commercial, retail and civic uses, but residential development would be reduced by 695 units. Specifically, the alternative would result in an elimination of development in northern parcels R3, R5, R6, and PARK 2 and southern residential parcels R22, R23, adjacent to detention basin B8. By reducing the footprint of proposed development in the center and south portions of the Plan Area, the overall development footprint would result in less grading and soil disturbance. Overall, less roads, housing units, and infrastructure improvements would be constructed. The alternative would still require a General Plan Amendment to change the land use diagram to accommodate the mix of uses, reflect roadway alignments, and include bicycle facilities. The alternative would also require a specific plan amendment and zoning ordinance amendment to adopt the Mather South Community Master Plan into the Mather Field Specific Plan.

EVALUATION OF ENVIRONMENTAL EFFECTS

AESTHETICS

The Biological Resources Avoidance Alternative would result in development of a mix of uses across most of the Plan Area. Improvements would include buildings, roadways, and infrastructure and the aesthetics and visual character of the Plan Area would be largely changed from its currently undeveloped nature. Like the project, the alternative would result in permanent changes to the Plan Area that while slightly reduced compared to the project, would result in significant and unavoidable impacts to visual character. Also, although reduced because of the reduced project scale, this alternative would result in increased skyglow and potential impacts from the introduction of suburban lighting to a currently undeveloped area. Mitigation would be required to

reduce impacts like the project. Overall, this alternative would result in similar, but slightly reduced impacts compared to the project.

AIR QUALITY

The Biological Resources Avoidance Alternative, like the project would generate air pollutants from construction or operational activities associated with the development of mixed uses within the Plan Area. Like the project, this alternative would also result in significant and unavoidable long-term operational emissions related to mobile and stationary sources of emissions that would be associated with the new mix of land uses. Also like the project, the alternative would require mitigation to reduce construction-related criteria air pollutants, reduce odor impacts, and reduce air emission impacts on sensitive receptors. Nonetheless, air quality impacts while still significant, would be less under this alternative because of its reduced scale.

AIRPORT COMPATIBILITY

The Biological Resources Avoidance Alternative would result in the construction and development of new buildings, roadways, and other accessory infrastructure and would result in bringing new sensitive receptors to the Plan Area, albeit at a reduced scale compared to the project. This alternative would also require mitigation to reduce airport safety hazards and airport noise like the project. Like the project, this alternative would result in less than significant impacts related to building heights and bird hazards, and no impacts related to air traffic patterns. Overall, this alternative would result in similar, though reduced impacts than the project because of its reduced scale.

BIOLOGICAL RESOURCES

The Biological Resources Avoidance Alternative would result in the development of a mix of uses like the project within a reduced footprint. Therefore, less overall grading would be required within the Plan Area, and the project footprint associated with this alternative would leave additional naturally occurring biological features in place. As a result, the project's significant direct impacts to onsite vernal pools, vernal swales, seasonal wetlands, coyote brush scrub, elderberry shrub, and cottonwood would be reduced compared to the project. However, given the close proximity of developing mixed uses and because sensitive resources are located in multiple locations across the Plan Area some of which would be developed, these resources would still be at risk of being disturbed because of project activities including construction, hydromodification, introduction of humans and domestic animals to the area. Barriers, educational signage, and berms could reduce the potential for these outcomes to occur.

This alternative, like the project, would result in significant and unavoidable impacts to Swainson's hawk and habitat, and to offsite areas of sensitive biological resources because of roadway improvements. This alternative, like the project, would also require mitigation to reduce impacts to vernal pool species, special-status plants, western spadefoot habitat, valley elderberry longhorn beetle habitat, western pond turtle, tricolored blackbird, burrowing owl, American badger, wetlands, wildlife movement, or the tree ordinance. Overall, this alternative would result in significant biological impacts,

but these impacts would be substantially reduced compared to the project because of the reduce project footprint.

CLIMATE CHANGE

The Biological Resources Avoidance Alternative would result in the production of GHG emissions related to construction and operation activities, albeit at a reduced level compared to the project. This alternative, like the project, would result in the development of a mix of uses including residential, commercial, retail, and civic albeit at a reduced scale. Fewer residential dwelling units would be constructed compared to the project, and the research and development campus would not be developed. This would result in a significant reduction in GHG emissions; however, it is likely that this alternative would still require mitigation to reduce project emissions to less than significant. Overall, GHG emissions under this alternative would be less than the project, because of the reduced scale of development.

CULTURAL RESOURCES

The Biological Resources Avoidance Alternative would result in a smaller project footprint that would result in less grading on the site compared to the project. However, the potential to disturb previously unknown tribal cultural resources, archaeological resources, or human remains still exists, albeit at a reduced level. Like the project, this alternative would require mitigation to reduce the potential for significant impacts resulting from the development of mixed uses under this alternative. Overall, cultural and tribal cultural resources impacts would be similar, or slightly less under this alternative because of the reduced project footprint.

ENERGY

The Biological Resources Avoidance Alternative would result in the development of a mix of uses including residential, commercial, retail and civic and would require the consumption of energy during construction and operational activities. This alternative would result in a reduced scale project, but like the project, energy would be consumed under this alternative. However, like the project, energy would not be wasted and would available for use in the development of the project. This EIR assumes that the SMUD infrastructure, that is described in Chapter 9, “Energy,” would still be required under this reduced project alternative because of its substantial size and other cumulative development that is being considered. Therefore, energy impacts would be less under this alternative as compared to the project.

GEOLOGY AND SOILS

The Biological Resources Avoidance Alternative would result in the development of a mix of uses including residential, commercial, retail, and civic uses at a reduced scale. This alternative would result in a reduced amount of grading and ground disturbance within the Plan Area, which would reduce the potential for soil erosion as compared to the project. Like the project, this alternative would also require mitigation to reduce the potential for disturbance to paleontological resources. Like the project, impacts related to seismicity, expansive soils, and agricultural soils impacts would remain nonexistent or

less than significant. Overall, impacts under this alternative would be similar or slightly less than the project.

HAZARDS AND HAZARDOUS MATERIALS

The Biological Resources Avoidance Alternative would result in the development of a similar project reduced in scale and project footprint compared to the project. A reduced project footprint would result in less grading and ground disturbance which would slightly reduce the potential for exposure of residents and workers to contaminated soils in the Plan Area. Like the project, this alternative would require mitigation to reduce impacts related to hazardous materials upset, proximity to schools, and the potential for issues related to portions of the site having been listed on the Cortese List. Like the project, this alternative would result in no change to conflicts with emergency response plans or wildfires because the alternative would be required to coordinate with Sac Metro Fire like the project. Overall, impacts under this alternative would be similar or slightly less than the project.

HYDROLOGY AND WATER QUALITY

The Biological Resources Avoidance Alternative would result in the development of a reduced scale project with a smaller project footprint which would have less ground disturbing activities resulting in the potential for soil erosion and impacts to water quality. Similarly, the reduced project footprint under this alternative would result in a smaller portion of the Plan Area becoming developed with impervious surfaces, which would reduce the potential for downstream flood impacts. However, hydromodification would still occur across most of the Plan Area, which would require this alternative, like the project, to implement mitigation. The magnitude and scale of Impacts would, however, be reduced for these issue areas compared to the project. No changes would occur that would result in this alternative being at risk for dam failure compared to the project. Overall, impacts under this alternative would be similar or slightly less than the project.

LAND USE AND PLANNING

The Biological Resources Avoidance Alternative would result in the development of a mixed use, albeit smaller scale project than the proposed project. Like the project, this alternative would not result in divisions to an existing community because the Plan Area is vacant and surrounded by undeveloped land. Though the project would result in less-than-significant impacts related to conflicts with policies enacted to reduce environmental impacts, this alternative would reduce the potential for impacts because of the smaller footprint and additional biological resources protections. Unlike the project, this alternative would result in fewer adjacency impacts resulting from the placement of residential uses near the rendering plant south of Kiefer Boulevard those residential uses have been redistributed throughout the site at locations that are further from the rendering plant such that this impact would be eliminated. Overall, impacts would be less under this alternative.

NOISE

The Biological Resources Avoidance Alternative would result in the development of a mixed-use project that includes residential, commercial, retail and civic uses. The project footprint and scale would be reduced under this alternative, which would result in a reduction in residential dwelling units and the elimination of the research and development campus. Under this alternative, noise and vibration related to construction activities would still occur albeit at a reduced level, and mitigation would be necessary. Traffic noise would also increase above the existing ambient noise under this alternative, albeit less than compared to the project, and impacts to offsite sensitive receptors would still occur under this alternative. Stationary noise sources would also be developed under this alternative, so significant and unavoidable noise related to stationary sources under this alternative would still occur, albeit to a lesser extent compared to the project. Overall, impacts would be less under this alternative but still significant.

PUBLIC SERVICES

The Biological Resources Avoidance Alternative would result in the development of mixed uses at a reduced scale compared to the project. Therefore, this alternative would increase demand for public services including fire protection, law enforcement, schools, parks, and libraries above the existing undeveloped condition, but below the demand that would occur under the project because the scale of development under this alternative would be reduced. Effects on services would remain less than significant like the project under this alternative because the project applicant would be required to pay fees as mitigation and build a fire station and parks. Overall, impacts would be less under this alternative.

PUBLIC UTILITIES

The Biological Resources Avoidance Alternative would result in the development of a reduced scale project that would reduce demand for wastewater and solid waste services by approximately 10 percent. As described in the EIR, impacts would be less than significant. Therefore, while demand for utilities would be higher than the undeveloped existing condition of the Plan Area, it would be less than for the proposed project and impacts would be less than significant. Overall, impacts would be less under this alternative.

TRAFFIC AND CIRCULATION

The Biological Resources Avoidance Alternative would result in the development of a mix of land uses that would require the implementation of a new internal circulation network and improvements to the existing roadway network. Under this alternative, while the project footprint would be reduced and dwelling units and the research and development campus eliminated, it is likely that significant and unavoidable impacts related to roadway segments and freeway operations would still occur under this alternative because of the substantial change in land uses that would still occur. Under this alternative intersections operations, bicycle and pedestrian infrastructure, and rural roadway functionality would likely still require mitigation similar to that recommended for the project. Transit facilities and emergency access would still be required as demand

for transit would increase under this alternative, and the project would be required to coordinate emergency access. Even with implementation of mitigation recommended for the project, it is likely that some significant and unavoidable impacts would remain. Nonetheless, impacts would be less under this alternative.

WATER SUPPLY

The Biological Resources Avoidance Alternative would result in the development of a mix of land uses that would increase the demand for water supplies in the Plan Area above the current undeveloped condition. Even though the project would result in less than significant impacts related to capacity, entitlements, groundwater availability and recharge, impacts would be slightly reduced under this alternative because of the reduction in scale of the alternative compared to the project, which would result in less demand for water. Overall, impacts would be less under this alternative.

SUMMARY

Overall, the Biological Resources Avoidance Alternative would reduce environmental impacts compared to the project for most resource areas and would meet most of the project objectives.

ALTERNATIVE 3: INTENSITY SHIFT ALTERNATIVE

Under the Intensity Shift Alternative, the same number of dwelling units (3,522) would be constructed as the project but the land use map would be reconfigured to shift the most intense land uses of the project to the southern portion of the Plan Area. Specifically, the commercial center parcel would be relocated from the central western portion of the Plan Area, to the southeastern portion of the Plan Area, adjacent to the research and development campus, refer to Plate Alt-2. This would result in the least intense uses being clustered in the northern half of the Plan Area, which would include single-family and low-density residential uses with parks, schools, and the environmental education campus. The most intense uses would be clustered in the southern portion of the Plan Area along Kiefer Boulevard, with commercial, research and development and higher density residential uses. The Intensity Shift Alternative would be consistent with existing land uses in the north as the development pattern of residential uses and open space would be consistent with the existing Mather Golf Course, Mather Lake and Independence at Mather residential community. The overall proposed intensity of development would be consistent with the Mather Field Specific Plan.

EVALUATION OF ENVIRONMENTAL EFFECTS

AESTHETICS

The Intensity Shift Alternative would result in development of a mix of uses throughout the Plan Area with the greatest intensity of uses being clustered along Kiefer Boulevard in the southernmost portion. Improvements would include buildings, roadways, and infrastructure and the aesthetics and visual character of the Plan Area would be largely changed from its currently undeveloped nature. Like the project, the alternative would result in permanent changes to the Plan Area that under this alternative may be increased depending upon the viewer's vantage point compared to the project. The

clustering of higher density residential uses, commercial and retail, and the research and development campus would result in a taller and more concentrated hub of activity-generating uses in the southern portion of the Plan Are. Like the project, this alternative would result in significant and unavoidable permanent impacts to visual character. Also like the project, the alternative would result in increased skyglow and potential impacts from the introduction of suburban lighting to a currently undeveloped area. This impact could be exacerbated by clustering all commercial land uses into a smaller more concentrated portion of the plan. Mitigation would be required to reduce impacts like the project. Overall, this alternative would result in similar visual impacts.

AIR QUALITY

The Intensity Shift Alternative like the project, would generate air pollutants from construction or operational activities associated with the development of the same mix of uses within the Plan Area within the same footprint. Like the project, this alternative would result in significant and unavoidable long-term operational emissions related to mobile and stationary sources of emissions that would be associated with the new mix of land uses. Also like the project, the alternative would require mitigation, to reduce construction-related criteria air pollutants, reduce odor impacts, and reduce air emission impacts on sensitive receptors. Nonetheless, air quality impacts would still be significant, and would be similar to the project.

AIRPORT COMPATIBILITY

The Intensity Shift Alternative would result in the construction and development of new buildings, roadways, and other accessory infrastructure and would result in bringing new sensitive receptors to the Plan Area, like the project. This alternative, though reconfigured to cluster the most intense uses in the southern portion of the Plan Area, would also require mitigation to reduce airport safety hazards and airport noise like the project. As proposed, this alternative would result in less-than-significant impacts related to building heights and bird hazards, and no impacts related to air traffic patterns because the alternative would be required to comply with the airport comprehensive land use plan (ACLUP). Overall, this alternative would result in similar impacts to the project.

BIOLOGICAL RESOURCES

The Intensity Shift Alternative would result in the development of a mix of uses in a slightly different configuration. However, the overall grading footprint and ground disturbance would be similar to the project. As a result, this alternative's significant direct impacts to onsite vernal pools, vernal swales, seasonal wetlands, coyote brush scrub, elderberry shrub, and cottonwood would be the same as compared to the project. This alternative, like the project, would result in significant and unavoidable impacts to Swainson's hawk and habitat, and to offsite areas of sensitive biological resources because of roadway improvements. This alternative would also require the same mitigation as the project to reduce impacts to vernal pool species, special-status plants, western spadefoot habitat, valley elderberry longhorn beetle habitat, western pond turtle, tricolored blackbird, burrowing owl, American badger, wetlands, wildlife

movement, or the tree ordinance. Overall, this alternative would result in similar biological impacts.

CLIMATE CHANGE

The Intensity Shift Alternative, like the project, would result in the development of a mix of uses including residential, commercial, retail, and civic. Overall densities and development intensity would be similar to the project, resulting in the same level of construction-related GHG emissions. Because building types, densities, and overall development area would be the same as the project, building-related operational GHG emissions would also be the same as the project. However, this alternative would concentrate commercial uses in the southern portion of the Plan Area, which may decrease the walkability and bikeability of the Plan Area as a whole because of increased distance from most residences to services. This could result in a slightly higher vehicle-miles-traveled (VMT) rate internally because more people would drive to access those commercial services. VMT is directly linked to mobile-source GHG emissions and, therefore, an increase in internal VMT would result in a slight increase in mobile-source GHG emissions, as compared to the project. This alternative would require at least the same amount of mitigation or more related to project emissions as the proposed project. Overall, GHG emissions under this alternative would be slightly more than the project, because of the shift in development intensity and associated increased VMT.

CULTURAL RESOURCES

The Intensity Shift Alternative would result in a similar project footprint that would result in approximately the same amount of grading on site. Therefore, the potential to disturb previously unknown tribal cultural resource, archaeological resource, or human remains would be the same as the project. Like the project, this alternative would require mitigation to reduce the potential for significant impacts resulting from the development of mixed uses under this alternative. Overall, cultural and tribal cultural resources impacts would be similar under this alternative.

ENERGY

The Intensity Shift Alternative would result in the development of a mix of uses including residential, commercial, retail and civic and would require the consumption of energy during construction and operational activities. This alternative would develop a similarly scaled development as the proposed project within which energy would be consumed. Like the project, energy would not be wasted and is available for use in the development of the project. Therefore, energy impacts would be similar under this alternative.

GEOLOGY AND SOILS

The Intensity Shift Alternative would result in the development of a mix of uses including residential, commercial, retail and civic at a similar scale as the project. Therefore, this alternative would result in a similar amount of grading and ground disturbance within the Plan Area; therefore, a similar potential for soil erosion would exist. Like the project, this alternative would also require mitigation to reduce the potential for disturbance to

paleontological resources. Further, impacts related to seismicity, expansive soils, and agricultural soils impacts would remain nonexistent or less than significant because the Plan Area is does not exhibit seismic sensitivity, the development would be required to perform a geotechnical report and soils testing prior to grading, and there are no important agricultural soils on the site. Overall, impacts under this alternative would be similar to the project.

HAZARDS AND HAZARDOUS MATERIALS

The Intensity Shift Alternative would result in the development of a similar project footprint that would result in approximately the same amount of grading and ground disturbance and a similar potential for exposure of residents and workers to contaminated soils in the Plan Area. Like the project, this alternative would require mitigation to reduce impacts related to hazardous materials upset, proximity to schools, and the potential for issues related to portions of the site having been listed on the Cortese List because this alternative would develop the same types of uses as the project. Similarly, this alternative would result in no change to conflicts with emergency response plans or wildfires because the alternative would be required to coordinate with Sac Metro Fire. Overall, impacts under this alternative would be similar to the project.

HYDROLOGY AND WATER QUALITY

The Intensity Shift Alternative would result in the development of a similarly-scaled project over a similar project footprint which would have the same amount of ground disturbing activities. This would result in a similar potential for soil erosion and impacts to water quality during construction. Similarly, this alternative would result in the same potential for downstream flood impacts and hydromodification. This alternative, like the project, would be required to implement mitigation to reduce the potential for flooding. No changes would occur that would result in this alternative being at increased risk for dam failure compared to the project. Overall, impacts under this alternative would be similar to the project.

LAND USE AND PLANNING

The Intensity Shift Alternative would result in the development of a mix of uses, similar to the project, albeit reconfigured to include the most intense uses in the southern portion of the Plan Area. Like the project, this alternative would not result in divisions to an existing community because the Plan Area is vacant and surrounded by undeveloped land. Like the project, this alternative would result in less-than-significant impacts related to conflicts with policies enacted to reduce environmental impacts. Unlike the project, this alternative would result in fewer adjacency impacts resulting from the placement of residential uses near the rendering plant south of Kiefer Boulevard because these residential land uses would be located a greater distance from these operations. Under this alternative, the residential density in parcels R22 and R23 which are the closest to the rendering plant, would shift to the north and be replaced by commercial uses. Overall, impacts would be less under this alternative compared to the project.

NOISE

The Intensity Shift Alternative would result in the development of a mixed-use project that includes residential, commercial, retail and civic uses. The project footprint and scale would be similar to the project under this alternative; however, the most intense land uses (i.e., high-density residential, commercial, and retail) would be concentrated in the southern portion of the Plan Area along Kiefer Boulevard. Under this alternative, noise and vibration related to construction activities would occur at a similar level as the project, and like the project, mitigation would be necessary. Traffic noise would also increase above the existing ambient noise under this alternative, and like the project, impacts to offsite sensitive receptors would occur under this alternative, at a potentially increased level because congestion may increase closer to the offsite receptors. Offsite noise impacts to existing sensitive receptors along the south side of Kiefer Boulevard could increase because of the proximity of new commercial uses clustered in the southern portion of the Plan Area. However, shifting the commercial intensity from the center of the Plan Area could reduce internal noise-related impacts from developing residential uses near commercial uses (e.g., loading docks, commercial HVAC, vehicle traffic noise), so internal sensitive receptor impacts compared to the project may be reduced. Overall, impacts would be similar to the project but may shift where the greatest noise conflicts would occur increase for offsite receptors.

PUBLIC SERVICES

The Intensity Shift Alternative would result in the development of mixed uses at the same scale as the project; therefore, this alternative would result in the same demand for public services including fire protection, law enforcement, schools, parks, and library services because like the project, this alternative would result in the payment of mitigation, construction of a new fire station, and development of parks. Like the project, impacts on services would be less than significant. Therefore, impacts would be the same with implementation of this alternative.

PUBLIC UTILITIES

The Intensity Shift Alternative would result in the development of a similarly-scaled project as the project and as a result, demand for wastewater and solid waste services would be the similar to the project. Therefore, under this alternative, demand for utilities would be the same as the proposed project. Like the project, impacts would be less than significant. Overall, impacts would be similar under this alternative.

TRAFFIC AND CIRCULATION

The Intensity Shift Alternative would result in the development of a mix of land uses that would require the implementation of a new internal circulation network and improvements to the existing roadway network. The clustering of commercial and employment uses in the southern portion of the Plan Area would be consistent with the four-lane arterial classification for Kiefer Boulevard and the access provided by the regional network in the area. However, traffic and circulation patterns would change compared to the project, with largely local and residential traffic prevailing in the northern portion of the Plan Area, and largely regional and commercial and employment traffic prevailing along Kiefer Boulevard. Additional impacts could occur under this

alternative because commercial uses would be concentrated in the southern portion of the Plan Area, which may decrease the walkability and bikeability of the Plan Area as a whole because of increased distance from most residences to services. This could result in a slightly higher VMT rate internally because more people would drive to access those commercial services. Under this alternative, it is likely that significant and unavoidable impacts related to roadway segments and freeway operations would still occur, though impacts may be redistributed among the proposed roadway network.

Also, because the alternative would concentrate commercial uses in the southern portion of the Plan Area, it may decrease the walkability and bikeability of the Plan Area as a whole because of increased distance from most residences to services. This could result in a slightly higher VMT rate internally because more people would drive to access those commercial services. Under this alternative, intersections operations, bicycle and pedestrian infrastructure, and rural roadway functionality would likely still require mitigation under this alternative, as with the project because the overall intensity of this alternative is similar to the project. Transit facilities and emergency access would still be required as demand for transit would still occur under this alternative, and the project would still be required to coordinate emergency access. Overall, impacts would be similar under this alternative as compared to the project.

WATER SUPPLY

The Intensity Shift Alternative would result in the development of a mix of land uses that would result in the same demand for water supplies in the Plan Area as the project. The project would result in less than significant impacts related to capacity, entitlements, groundwater availability and recharge, and impacts under this alternative would be similar. Overall, impacts would be similar under this alternative.

SUMMARY

Overall, the Intensity Shift Alternative would result in similar impacts to the project, and would increase aesthetics, air quality, climate change, and noise. This alternative would reduce land use impacts. It would meet all project objectives.

ALTERNATIVE 4: REDUCED SCALE ALTERNATIVE

Under the Reduced Scale Alternative, a reduced number of residential dwelling units (2,102) would be constructed but the higher density residential parcels would be redistributed to decrease density overall staying within the same project footprint as the project. The environmental education campus and research and development campus would be eliminated and would instead support low-density residential uses. Like the project, the commercial and retail parcel and community center parcels in the center of the Plan Area would be developed under this alternative. This alternative would result in a less intense project, because all residential parcels would be low density and single family. Commercial uses would be central to most of the residential uses and many services could be accommodated within the 480,000 square feet dedicated to this land use type. However, the research and development and environmental education campus would not be developed, so the Plan Area would not provide regional employment opportunities, and residents would be required to look for offsite

employment. The Reduced Scale Alternative would be consistent with existing land uses in the north and general development pattern in eastern Sacramento County. Refer to Plate Alt-3 for an illustration of this alternative.

AESTHETICS

The Reduced Scale Alternative would result in the development of predominantly low-density residential uses across most of the Plan Area, albeit at a reduced level, with a central parcel devoted to commercial and retail uses. Improvements would include buildings, roadways, and infrastructure and the aesthetics and visual character of the Plan Area would be largely changed from its currently undeveloped nature. Like the project, the alternative would result in permanent changes to the Plan Area that while slightly reduced compared to the project because of the development of lower profile residential types, fewer dwelling units, and the elimination of the environmental education campus and research and development campus, would result in significant and unavoidable impacts to visual character because of the change from its undeveloped nature. Also, although reduced because of the reduced project scale, this alternative would result in increased skyglow and potential impacts from the introduction of suburban lighting to a currently undeveloped area, albeit at a reduced level compared to the project. Therefore, mitigation would be required to reduce impacts like the project. Overall, this alternative would result in similar impacts compared to the project.

AIR QUALITY

The Reduced Scale Alternative, like the project, would generate air pollutants from construction or operational activities associated with the development of residential, commercial, civic, and park uses, as well as roads and utility infrastructure within the Plan Area, albeit at a reduced scale. However, under this alternative, the scale of development would be reduced through a decrease in residential development by 40 percent, and a 40 percent reduction in commercial uses, including elimination of the environmental education campus and research and development campus. While this reduction in development may reduce construction-related air quality emissions, this would result in residents driving further to work because of a loss of onsite employment options, and it is likely that mobile source emissions related to driving would offset any gains. Therefore, like the project, this alternative would result in significant and unavoidable long-term operational emissions related to mobile and stationary sources of emissions that would be associated with the new development. Also like the project, the alternative would require mitigation to reduce construction-related criteria air pollutants, reduce odor impacts, and reduce air emission impacts on sensitive receptors. Therefore, impacts to air quality would be similar to the project and ultimately still significant.

AIRPORT COMPATIBILITY

The Reduced Scale Alternative would result in the construction and development of new buildings, roadways, and other accessory infrastructure. Under this alternative, buildings would be reduced in height because of the elimination of multi-family housing and both campuses. Low-density residential uses would be developed in the parcels that formerly contained the research and development and environmental education campus, and

overall the number of dwelling units would be reduced by 40 percent, compared to the project. However, these changes would have little effect on airport compatibility because like the project, development under this alternative would be required to be compatible with the ACLUP. This alternative would also require mitigation to reduce airport safety hazards and airport noise like the project. Like the project, this alternative would result in less than significant impacts related to building heights and bird hazards, and no impacts related to air traffic patterns because of compliance with the ACLUP. Overall, this alternative would result in similar impacts to the project because of its reduced scale.

BIOLOGICAL RESOURCES

The Reduced Scale Alternative would result in the development of residential, commercial, park and civic uses, albeit at a reduced scale compared to the project. However, the overall grading footprint and ground disturbance would be similar to the project. As a result, this alternative's significant direct impacts to onsite vernal pools, vernal swales, seasonal wetlands, coyote brush scrub, elderberry shrub, and cottonwood would be the same as compared to the project. This alternative, like the project, would result in significant and unavoidable impacts to Swainson's hawk and habitat. Additionally, it is likely that the same amount of roadway improvements would be made, which would could impact offsite areas of sensitive biological resources. This alternative would also require the same mitigation as the project to reduce impacts to vernal pool species, special-status plants, western spadefoot habitat, valley elderberry longhorn beetle habitat, western pond turtle, tricolored blackbird, burrowing owl, American badger, wetlands, wildlife movement, or the tree ordinance because of the similar project footprint. Overall, this alternative would result in similar biological impacts.

CLIMATE CHANGE

The Reduced Scale Alternative would result in the production of GHG emissions related to construction and operation activities, albeit at a reduced level compared to the project. This alternative, like the project, would result in the development of residential, commercial, civic, and parkland uses, along with roadways and utility infrastructure. However, this alternative would eliminate development of multi-family residential uses (40 percent density reduction overall), and the research and development campus and environmental education campus. While this would result in a significant reduction in GHG emissions because of decreased construction activities, and fewer residents and employees driving to and from the Plan Area, the future residents that do live in the Plan Area will be forced to find offsite employment which will increase the amount of distance traveled to and from work. This would result in an increase in VMT, which would likely offset the amount of GHG emissions otherwise reduced through the smaller project. This alternative would still require mitigation to reduce project emissions to less than significant. Overall, GHG emissions under this alternative would be similar to the project, even at the reduced scale of development.

CULTURAL RESOURCES

The Reduced Scale Alternative would result in a similar project footprint as the project and would result in approximately the same amount of grading on site. Therefore, the potential to disturb previously unknown tribal cultural resource, archaeological resource, or human remains would be the same as the project. Like the project, this alternative would require mitigation to reduce the potential for significant impacts resulting from the development of the Plan Area under this alternative. Overall, cultural and tribal cultural resources impacts would be similar under this alternative.

ENERGY

The Reduced Scale Alternative would result in the development of residential, commercial, civic, and park uses in the Plan Area that would require the consumption of energy during construction and operational activities. This alternative would result in a reduced scale project, but like the project, energy would be consumed under this alternative. However, like the project, energy would not be wasted and would available for use in the development of the project. While the scale of the project would be reduced under this alternative by decreasing residential density and commercial uses by 40 percent, including the replacement of employment uses with low density residential uses, the difference in energy usage would be nominal as compared to the project because there would be more individual buildings consuming energy. This EIR assumes that the SMUD infrastructure that is described in Chapter 9 Energy would still be required under this reduced project alternative because of its substantial size and other cumulative development that is being considered. Therefore, energy impacts would be similar under this alternative as compared to the project.

GEOLOGY AND SOILS

The Reduced Scale Alternative would result in the development of residential, commercial, civic and park space at a reduced scale as the project but within the same footprint. Therefore, this alternative would result in a similar amount of grading and ground disturbance within the Plan Area. This would result in similar potential for soil erosion would exist. Like the project, this alternative would also require mitigation to reduce the potential for disturbance to paleontological resources. Further, impacts related to seismicity, expansive soils, and agricultural soils impacts would remain nonexistent or less than significant because the Plan Area does not exhibit seismic sensitivity, the development would be required to perform a geotechnical report and soils testing prior to grading, and there are no important agricultural soils on the site. Overall, impacts under this alternative would be similar to the project.

HAZARDOUS MATERIALS

The Reduced Scale Alternative would result in the development of a similar project footprint that would result in approximately the same amount of grading and ground disturbance and a similar potential for exposure of residents and workers to contaminated soils in the Plan Area. Like the project, this alternative would require mitigation to reduce impacts related to hazardous materials upset, proximity to schools, and the potential for issues related to portions of the site having been listed on the Cortese List because this alternative would develop the same types of uses as the

project, albeit at a reduced scale. Similarly, this alternative would result in no change to conflicts with emergency response plans or wildfires because the alternative would be required to coordinate with Sac Metro Fire. Overall, impacts under this alternative would be similar to the project.

HYDROLOGY AND WATER QUALITY

The Reduced Scale Alternative would result in the development of a reduced scale project over a similar project footprint which would have the same potential ground disturbing activities. While the larger environmental education campus and research and development campus with associated parking surfaces would be replaced with single family and low-density residential structures, this would not significantly reduce the overall impervious nature of the post development conditions within the Plan Area because it would likely be similar in surface area. Therefore, this would result in a similar potential for downstream flood impacts and hydromodification. This alternative, like the project, would be required to implement mitigation to reduce the potential for flooding. Since grading would be similar, the potential for soil erosion impacts to water quality during construction would be similar. No changes would occur that would result in this alternative being at increased risk for dam failure compared to the project. Overall, impacts under this alternative would be similar to the project.

LAND USE

The Reduced Scale Alternative would result in the development of a mix of uses, similar to the project, albeit at a reduced scale, and eliminating the employment uses. Like the project, this alternative would not result in divisions to an existing community because the Plan Area is vacant and surrounded by undeveloped land. Like the project, this alternative would result in less-than-significant impacts related to conflicts with policies enacted to reduce environmental impacts. However, unlike the project, this alternative may increase the potential for adjacency impacts resulting from the placement of new residential uses in parcel R24 (formerly designated as U1, the research and development campus) near the rendering plant south of Kiefer Boulevard because these residential land uses may be close enough to experience odors or noise related to the operation of the plant. Additionally, this alternative does not meet as many of the policy objectives in the Mather Field Specific Plan related to the development of economic and employment uses as a result of eliminating the environmental education campus and the research and development campus. Under this alternative, the reduction in multi-family housing would also conflict with the State's housing affordability targets consistent with the Regional Housing Needs Assessment because low-density and single-family homes do not qualify. Overall, impacts would be greater under this alternative compared to the project.

NOISE

The Reduced Scale Alternative would result in the development of a mixed-use project that includes residential, commercial, and civic uses. The project footprint would be similar to the project under this alternative; however, the most intense land uses (i.e., environmental education campus and research and development campus) would be eliminated. Under this alternative, noise and vibration related to construction activities

would occur at a similar level as the project, and like the project, mitigation would be necessary. Traffic noise would also increase above the existing ambient noise under this alternative, but unlike the project, impacts to offsite sensitive receptors may be reduced under this alternative, because of the reduction in employment uses which would reduce the number of non-residents traveling to the Plan Area. Offsite noise impacts to existing sensitive receptors along the south side of Kiefer Boulevard could decrease because of the elimination of the research and development campus. Additionally, reducing the employment uses could reduce some of the internal noise-related impacts from developing residential uses near commercial uses (e.g., loading docks, commercial HVAC, vehicle traffic noise) however this alternative would still develop the central commercial parcel. Overall, impacts would be reduced under this alternative compared to the project.

PUBLIC SERVICES

The Reduced Scale Alternative would result in the development of mixed uses at a reduced scale compared to the project. Therefore, this alternative would increase demand for public services including fire protection, law enforcement, schools, parks, and libraries above the existing undeveloped condition, but below the demand that would occur under the project because the scale of development under this alternative would be reduced. Effects on services would remain less than significant like the project under this alternative because the project applicant would be required to pay fees as mitigation and build a fire station and parks. Overall, impacts would be less under this alternative.

TRAFFIC AND CIRCULATION

The Reduced Scale Alternative would result in the development of a mix of land uses that would require the implementation of a new internal circulation network and improvements to the existing roadway network. Under this alternative, while the number of dwelling units would be reduced by 40 percent and the environmental education campus and research and development campus eliminated, it is still possible that significant and unavoidable impacts related to roadway segments and freeway operations would still occur under this alternative because of the substantial change from undeveloped rural land to developed land uses. Under this alternative intersections operations, bicycle and pedestrian infrastructure, and rural roadway functionality would likely still require mitigation similar to that recommended for the project because the project would result in a significant increase in new trips to and from the Plan Area. Transit facilities and emergency access would still be required as demand for transit would increase under this alternative, and the project would be required to coordinate emergency access. Even with implementation of mitigation recommended for the project, it is likely that some significant and unavoidable impacts would remain. Nonetheless, impacts would be reduced under this alternative.

WATER SUPPLY

The Reduced Scale Alternative would result in the development of a mix of land uses that would result in a reduced demand for water supplies in the Plan Area as the project, because residential density would be reduced by 40 percent and employment

uses would be eliminated. Therefore, like the project, this alternative would result in less than significant impacts related to capacity, entitlements, groundwater availability and recharge. Overall, impacts would be similar under this alternative.

SUMMARY

Overall, the Reduced Scale Alternative would result in similar environmental impacts compared to the project for most resource areas, with the exception of increased land use impacts, and reduced traffic and noise impacts. This alternative would meet most of the project objectives.

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

The No Project Alternative would avoid all significant environmental effects of the project and would be environmentally superior to the project. However, this alternative would not meet any of the project's objectives because a mixed-use residential community would not be constructed. State CEQA Guidelines Section 15126.6(e)(2) states that when the no project alternative is identified as the environmentally superior alternative, the EIR must also identify an environmentally superior alternative from among the other alternatives.

The Biological Resources Avoidance Alternative would be environmentally superior to the project and to all other alternatives as it would reduce the project's significant direct impacts to onsite vernal pools, vernal swales, seasonal wetlands, coyote brush scrub, elderberry shrub, and cottonwood. Additional impacts would be reduced related to construction and operations activities (e.g., air, cultural, GHG, and traffic) because of the reduced footprint and reduced number of units that would be developed. This alternative would meet most of the project's objectives; however, it may not be economically viable because of the substantially reduced number of units and the required backbone infrastructure needs.

Based on this information and the comparison of environmental impacts in Table ALT-2, the Biological Resources Avoidance Alternative is the environmentally superior alternative.

3 AESTHETICS

INTRODUCTION

The Mather Field Project EIR (2016) evaluated the Mather South Plan Area at the plan-level and that analysis is hereby incorporated by reference in this document and summarized as appropriate below. This chapter describes the regulatory and environmental setting for aesthetics and visual resources in the vicinity of the Plan Area, identifies and analyzes impacts related to aesthetics and visual resources from implementation of the Mather South Project at a project-level, and if necessary, recommends mitigation measures to reduce or eliminate significant impacts.

During the Notice of Preparation (NOP) scoping process, commenters raised concerns related to the design of parks and accessory buildings to parks. A copy of the NOP and comment letters received in response to the NOP are included in Appendix PD-2 of this Mather South Project Draft EIR.

ENVIRONMENTAL SETTING

VISUAL CHARACTER OF THE REGION

Sacramento County lies near the center of California's Central Valley, at the southern end of the Sacramento Valley. The regional character of Sacramento County is distinguished by three general regions: Sierra Nevada foothills (east), Lower Sacramento Valley (west, south, and north), and Sacramento-San Joaquin River Delta (south and west). The valley region is divided by numerous rivers and creeks, including three major waterways, the Sacramento, American and Cosumnes Rivers. The Sacramento River forms the western border of the county flowing north to south, while the American and Cosumnes flow through the central portion of the county from east to west.

Much of the county is flat alluvial plains until the eastern edge where the foothills of the Sierra Nevada Mountains begin to emerge. Because of the flat nature of the county, the Sierra Nevada and their foothills are visible to the east on clear days, as is the Coastal Range on the western horizon.

The Mather South Plan Area is within the eastern portion of Sacramento County in a relatively undeveloped area. Vast agriculture lands occupy much of this portion of the county and dominate the visual landscape. Open space views within this undeveloped area is generally characterized by broad sweeping panoramas of flat agricultural lands and open space dotted with trees, and concentrations of vegetation surrounding water ways.

VISUAL CHARACTER OF THE MATHER SOUTH PLAN AREA

The Mather South Plan Area is similar in character to the overall eastern portion of the county, and is covered by grasslands and scattered trees across a relatively flat topography. The Plan Area elevations range from 128 feet above sea level to 174 feet above sea level, with a gradual increase in elevation occurring from southwest to northeast. Two tributaries of Todd Creek and other drainage swales, as well as wetlands are found throughout the property and heavier vegetation is concentrated along the eastern side of the project boundary.

The Plan Area has been vacant since the closure of the Mather Air Force Base (AFB); however, a few small bunkers that were used for ordnance storage and related military uses remain on the site. The bunkers are located in the center of the Plan Area and are not generally visible from perimeter roadways, with the exception of Zinfandel Drive. These buildings would be demolished as part of pre-construction activities.

The project site is bound along the west side by Zinfandel Drive, along the north by the Mather Golf Course and Mather Regional Park, along the east by Folsom South Canal and Sunrise Boulevard, and along the south by Kiefer Boulevard and the Sacramento Rendering Company (SRC) an animal rendering plant, which is located along the south side of Kiefer Boulevard.

VIEWS OF THE MATHER SOUTH PLAN AREA

Existing public views of the Plan Area are generally limited to Zinfandel Drive, Kiefer Boulevard, Excelsior Road, and Woodring Drive. Views of the Plan Area are unobscured from Zinfandel Drive and Kiefer Boulevard which border the project boundary along the west and south respectively. Open space characterized by grasslands and wetlands is the predominant view, with some development visible in the distance. Small overhead electrical transmission lines and post and cable fencing lines are also intermittently visible. Views from Jackson Road, which is approximately 1.3 miles south of the Plan Area, include electrical transmission lines, cattle fencing, open grazing lands, trees, rural housing, and the SRC facility. Elevations increase approximately 20 feet over this distance, but because of the flat nature of the area the Plan Area is barely visible, but does contribute to extensive views of open space. Views from Excelsior Road and Woodring Drive are distant, but available in some areas. The Independence at Mather housing development is located in this area.

The existing views of the Plan Area from the north and east are limited because of various land features. Views from the north are obstructed because of the presence of Mather Regional Park, Mather Lake, and Mather Golf Course. The Golf Course includes many trees, which dominate the views from Mather Regional Park; therefore, only patrons of the Golf Course can easily view the Plan Area and see expansive open grassland. Views from the east are limited by Folsom South Canal, which includes slightly elevated berms on either side. Sunrise Boulevard is on the eastern side of Folsom South Canal, and when looking at the plan area from Sunrise Boulevard or the

adjacent subdivisions, such as Anatolia, views are dominated by the canal edges and the trees that line the eastern edge of the Plan Area.

Views from within the Plan Area to the west are predominantly of grassland with homes in the distance. Views to the north are predominantly of Mather Golf Course. Views to the east are predominantly of the Folsom South Canal's elevated berms. In the far distance to the east, the Sierra Nevada Mountains can be seen on clear days from higher areas. Southern views from within the project site are of undeveloped land beyond Kiefer Boulevard and tall evergreen trees which screen the SRC facility.

An aerial photo depicting viewpoint locations surrounding the Plan Area is available in Plate AE-1, and a series of visual context photos for the Plan Area can be found below in Plates AE-2 through AE-21.

Scenic Vistas and Scenic Resources

The Mather South Plan Area is located approximately 25 miles west from the foothills of the Sierra Nevada Mountain Range (Google Maps 2018). As described above, the general topography surrounding the Plan Area is flat with existing land uses and trees obscuring mountain views to the east and west with the exception of very clear days. Additionally, there are no scenic highways in the vicinity of the Plan Area. The *Sacramento County General Plan EIR* does not identify any scenic viewpoints or vistas in the project vicinity, and the project site is not designated as an important public viewpoint (Sacramento County 2017). Therefore, scenic vistas and scenic resources are not available near or within the Plan Area.

Light and Glare Sources

The immediate vicinity of the Mather South Plan Area is rural and agricultural. The existing rural land uses do not generate substantial amounts of glare, lighting, or illumination, and the ambient nighttime lighting and illumination levels are very low. Suburban areas of the county typically exhibit sources of daytime glare and nighttime illumination. Sources of daytime glare include sunlight and reflections from windows, architectural coatings, glass and other shiny reflective surfaces. Nighttime illumination can include structure illumination, decorative landscape lighting, parking lot safety lighting, vehicles, and aircraft.

Major lighting sources surrounding the Plan Area are limited and there is no existing lighting within the Plan Area. The most significant source of light in the surrounding area is Mather Airport and the urban development just beyond, which is visible from the Plan Area to the east in the distance. Housing developments to the west (Independence at Mather) and east (Anatolia) provide nighttime skyglow. Nighttime views to the south are darker because of the lack of urban development to the south and limited nighttime lights of the SRC facility. Nighttime views to the north are also darker because of limited nighttime light associated with the golf course.

Plate AE-1: Plan Area Viewpoints on Aerial Photo

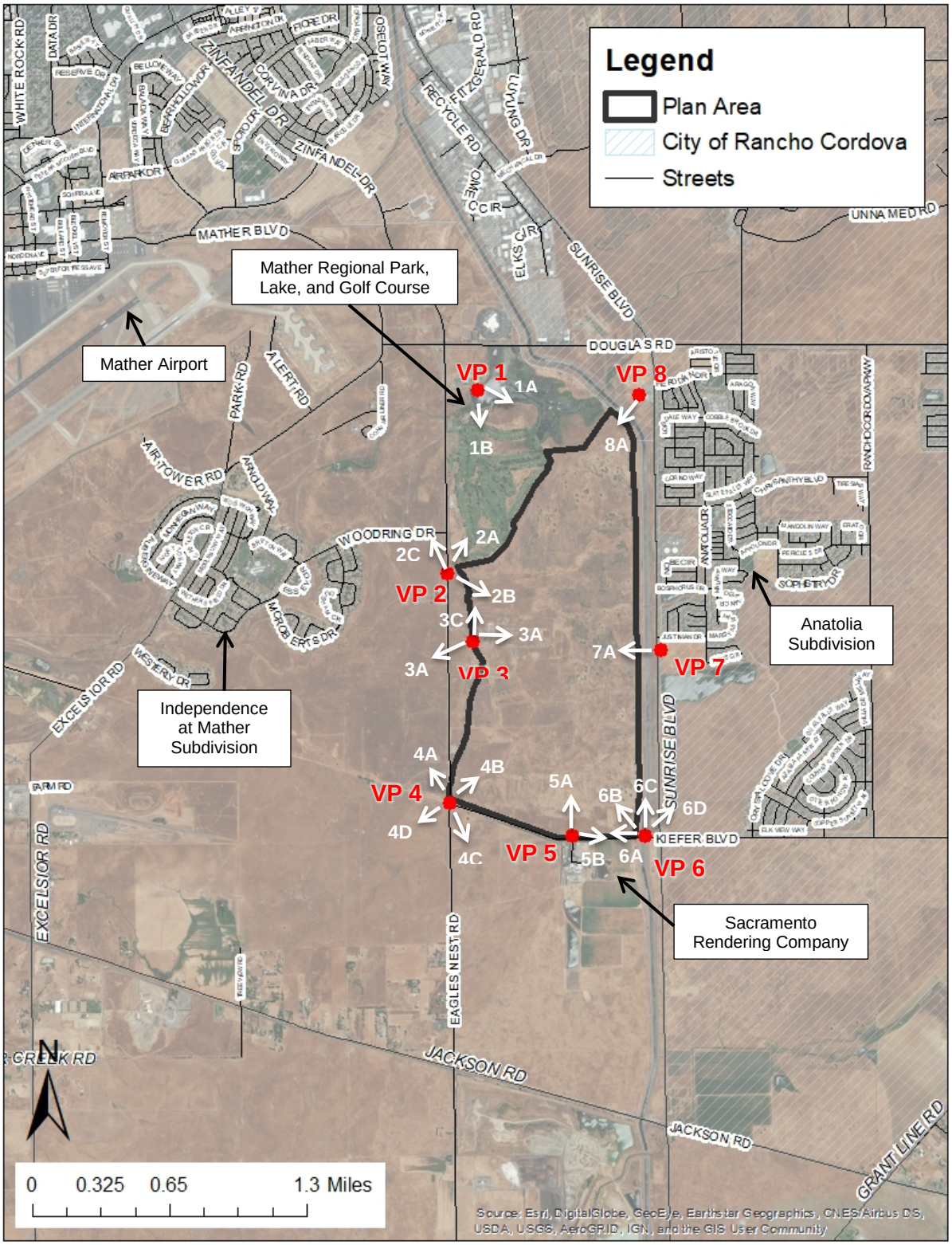


Plate AE-2: Viewpoint 1, Photo 1A



Viewpoint 1. View southeast from Mather Lake. Views of Mather Golf Course and of the commercial development off of Douglas Road and Sunrise Boulevard in the distance.

Plate AE-3: Viewpoint 1, Photo 2A



Viewpoint 1. View south from Mather Lake. Views of Mather Golf Course.

Plate AE-4: Viewpoint 2, Photo 2A



Viewpoint 2. View northeast from northwest corner of Plan Area on Zinfandel Drive. Views of Zinfandel Drive and Mather Golf Course with 12-kilovolt (kV) electrical transmission lines visible along Zinfandel Drive.

Plate AE-5: Viewpoint 2, Photo 2B



Viewpoint 2. View southeast from northwest corner of Plan Area on Zinfandel Drive. Views of Zinfandel Drive and the northern portion of the Plan Area with 12-kV electrical transmission lines visible along Zinfandel Drive.

Plate AE-6: Viewpoint 2, Photo 2C



Viewpoint 2. View northwest from northwest corner of Plan Area on Zinfandel Drive. Views of Mather Preserve and the Independence at Mather and a water tank in the distance.

Plate AE-7: Viewpoint 3, Photo 3A



Viewpoint 3. View east just east of Zinfandel Drive. Views of Plan Area and vacant military outbuildings.

Plate AE-8: Viewpoint 3, Photo 3b



Viewpoint 3. View southwest just east of Zinfandel Drive. Views of Mather Preserve and 12-kV electrical transmission lines.

Plate AE-9: Viewpoint 3, Photo 3C



Viewpoint 3. View north just east of Zinfandel Drive. Views of road to the military outbuildings within Plan Area and Mather Gold Course in the distance.

Plate AE-10: Viewpoint 4, Photo 4A



Viewpoint 4. View northwest at Zinfandel Drive and Kiefer Boulevard intersection. Views of Mather Preserve and Independence at Mather in the distance.

Plate AE-11: Viewpoint 4, Photo 4B



Viewpoint 4. View northeast at Zinfandel Drive and Kiefer Boulevard intersection. Views of the Plan Area with Sierra Nevada Mountains in the far distance.

Plate AE-12: Viewpoint 4, Photo 4C



Viewpoint 4. View southeast at Zinfandel Drive and Kiefer Boulevard intersection. Views of open space, trees that screen the Sacramento Rendering Company facility, and 230-kV electrical transmission lines.

Plate AE-13: Viewpoint 4, Photo 4D



Viewpoint 4. View southwest at Zinfandel Drive and Kiefer Boulevard intersection. Views of grazing land and 230-kV electrical transmission lines in the distance.

Plate AE-14: Viewpoint 5, Photo 5A



Viewpoint 5. View north from entrance of the Sacramento Rendering Company facility on Kiefer Boulevard. Views of Plan Area depicting the generally flat nature of the Plan Area.

Plate AE-15: Viewpoint 5, Photo 5B



Viewpoint 5. View from Kiefer Boulevard looking southeast toward the Sacramento Rendering Company facility. Views of evergreen trees that screen views of the Sacramento Rendering Company facility.

Plate AE-16: Viewpoint 6, Photo 6A



Viewpoint 5. Looking west at intersection of Kiefer Boulevard and Sunrise Boulevard toward the Sacramento Rendering Company facility. Views of Plan Area, the Sacramento Rendering Company facility's screen trees, and 69-kV electrical transmission lines.

Plate AE-17: Viewpoint 6, Photo 6B



Viewpoint 5. Looking northwest on the bridge crossing the Folsom South Canal just west of the intersection of Kiefer Boulevard and Sunrise Boulevard.

Plate AE-18: Viewpoint 6, Photo 6C



Viewpoint 5. Looking north on the bridge crossing the Folsom South Canal just west of the intersection of Kiefer Boulevard and Sunrise Boulevard. Views of Folsom South Canal with the Anatolia housing development in the distance.

Plate AE-19: Viewpoint 6, Photo 6D



Viewpoint 5. Looking northeast at the intersection of Kiefer Boulevard and Sunrise Boulevard. Views of undeveloped land with 230-kV electrical transmission lines visible and Sierra Nevada Mountains in the far distance.

Plate AE-20: Viewpoint 7, Photo 7A



Viewpoint 7. Looking west at the intersection of Justinian Drive and Sunrise Boulevard toward the Plan Area. Views of Folsom South Canal with open space in the distance.

Plate AE-21: Viewpoint 8, Photo 8A



Viewpoint 8. Looking southwest in the commercial development southwest of the intersection of Douglas Road and Sunrise Boulevard. Views of Folsom South Canal.

REGULATORY SETTING

CALIFORNIA SCENIC HIGHWAY PROGRAM

The California Scenic Highway Program was enacted in 1962 to protect and enhance California's scenic beauty by identifying and conserving those portions of the State highway system that would diminish aesthetic values of surrounding lands if changed. A highway may be eligible for designation as "scenic" based on landscape seen by travelers on that highway, quality of the landscape seen, and the extent development would intrude on enjoyment of the landscape. Before official designation of a highway as scenic, a city or county must nominate the highway for designation and adopt ordinances that protect its scenic quality. The city or county then applies to the California Department of Transportation for scenic highway approval. A list of State scenic highways is identified in Section 263 of the Streets and Highway Code.

TITLE 24 OUTDOOR LIGHTING

The 2016 Building Efficiency Standards of Title 24 include regulations for outdoor lighting characteristics such as maximum power and brightness, shielding, and sensor controls to turn lighting on and off. Different lighting standards are set by classifying areas by lighting zone, which are zones LZ1 through LZ4. The ambient illumination for LZ1 is "dark," for LZ2 is "low," for LZ3 is "medium," and for LZ4 is "high" (see Table 10-114-A of the 2016 Building Efficiency Standards). Lighting regulations for areas of lower ambient lighting are stricter – providing lower wattage allowances – to protect those areas from new sources of light pollution and light trespass. According to the 2010 US Census map for the Sacramento region, the plan area is located the area designated as Rural. Therefore, the Plan Area is located within lighting zone LZ2.

SACRAMENTO COUNTY GENERAL PLAN

The following General Plan policies pertaining to aesthetics and lighting may be applicable to the Mather South Project:

LU-18. Encourage development that complements the aesthetic style and character of existing development nearby to help build a cohesive identity for the area.

LU-31. Strive to achieve a natural nighttime environment and an uncompromised public view of the night sky by reducing light pollution.

OS-13. Permit development clustering in urban areas where grouping of units at a higher density would facilitate on-site protection of woodlands, wetlands, steep slopes, urban stream corridors, scenic areas, or other appropriate natural features as open space, provided that:

- Urban infrastructure capacity is available for urban use.
- On-site resource protection is appropriate and consistent with other General Plan Policies.

- General Plan policies pertaining to floodplain fill or natural preserves would not preclude development of the proposed use in the area to be protected as open space.
- The architecture and scale of development is appropriate for the area.
- Development rights for open space areas are permanently dedicated via conservation easements and appropriate long-term management is provided for by either a public agency or other appropriate entity (Please also refer to the Conservation Element for related policies).

Cordova Community Plan

The Cordova Community Plan includes the following policies related to visual character and aesthetics.

UDNC-2. Encourage architecture and building design that promotes pedestrian and other multi-model forms of access.

UDNC-7. Encourage the formation of distinct but integrated commercial districts with appropriate focal points, core activity areas, and supporting amenities.

UDNC-8. Promote high quality architecture, landscape, and streetscape features that enhance the character and identity of activity areas.

UDNC-9. Promote pedestrian-friendly, human-scale urban environments that provide safe and pleasant places for people to live and work.

UDNC-10. Encourage infill development and redevelopment to strengthen and improve the character of existing development as a means to avoid sprawl in other areas, provide greater connectivity by means of circulation improvements, and to complement and complete existing neighborhoods.

UDNC-11. Ensure that potentially incompatible and unsafe land uses are separated from residential uses by appropriate transition areas.

UDNC-12. Encourage screening of visibly large or tall structures such as water tanks or cellular facilities, by either locating them in areas seen by few people or “hidden” such as with the placement on the roof of a building or integration into the building’s design and architecture.

UDNC-13. Promote the undergrounding of all electrical utilities.

Mather Field Specific Plan and Special Planning Area

The Mather Field Specific Plan and Special Planning Area contain policies and guidelines that are applicable to the project.

Design projects consistent with the Design Guidelines established for the Mather Field South Subarea.

603-15. Design Guidelines. Design Guidelines are established for Mather Field to ensure quality development given the conditions resulting from conversion of a former military air base to a variety of civilian uses. Applicants preparing an application for design review are encouraged to use the guidelines in the preparation of their plans. The design guidelines for Mather Field are contained in Section 603-20.5.

603-16. Design Review. Design review shall be conducted in order to ensure an orderly development pattern, facilitate good design practices and maintain a harmonious character to the design and appearance of property and structures at Mather Field.

603-17. Development Standards. Development Standards are identified for each of the Districts and Subareas of the Mather Field Special Planning Area and are found in Section 603-20.6. These standards address the unique environment that exists at the former military base and clarify the appropriate standards in areas with mixed zoning categories.

DEVELOPMENT STANDARDS

Chapter 5 (Development Standards) of the County's Zoning Code contains standards requiring that illumination of buildings, landscaping, signs, and parking and loading areas be shielded and directed so that no light trespasses onto adjacent properties. The Mather South Project includes its own set of Development Standards (Chapter 7 of the Mather South Master Community Plan) that are specific to the Plan Area and are based on Chapter 5 of the Zoning Code, with the general requirements that lighting is directed away from residential areas and public streets so that glare is not produced that could impact the general safety of vehicular traffic and the privacy and well-being of residents.

The proposed Development Standards also require that lighting is provided for safety along walkways and passageways and that spillover lighting is minimized to the greatest extent possible throughout the Plan Area.

DESIGN GUIDELINES AND DESIGN REVIEW

Like the proposed set of Development Standards, the Mather South Project includes its own set of Design Guidelines which are intended to ensure that the community attains an orderly and cohesive aesthetic. The Design Guidelines strive to create a sense of place and emphasize pedestrian orientation among distinct land use types. The Design Guidelines (Chapter 6 of the Mather South Community Master Plan) are similarly based on the Countywide Design Guidelines, but enable varied development and a distinctive character specific to the Mather South Project. Where the Mather South Design Guidelines are silent on a topic, the standard would default to the requirements of the Countywide Design Guidelines. All development within the Plan Area would be subject to Design Review by the Sacramento County Design Review Advisory Committee, which would ensure future development's compliance with the Mather South Project Design Guidelines and the Countywide Design Guidelines, if required.

SIGNIFICANCE CRITERIA

Based on Appendix G of the State CEQA Guidelines, the project was determined to result in a significant impact to aesthetics and visual resources if it would:

1. Substantially alter existing viewsheds such as scenic highways, scenic resources, or vistas;

2. Substantially degrade the existing visual character or quality of the site and its surroundings; and/or

3. Create a new source of substantial light, glare, or shadow that would result in safety hazards or adversely affect day or nighttime views in the area.

METHODOLOGY

The analysis of potential effects is based on the assumption that the project would be designed in accordance with the Mather South Community Master Plan and compliant with all other applicable County regulations. A visit to the project site in July 2017; review of aerial photographs of the project site and vicinity; and review of proposed land uses for the project, were used to inform the discussion.

The analysis focuses on views of the project site from offsite sensitive receptors and public viewpoints. In determining the extent and implications of the anticipated visual changes, consideration was given to:

- existing visual qualities of the affected environment and specific changes in the visual character and qualities of the affected environment;
- the visual context of the affected environment;
- the extent to which the affected environment contains places or features that provide unique visual experiences or that have been designated in plans and policies for protection or special consideration; and
- the sensitivity of viewers, access of viewers, their activities, and the extent to which these activities are related to the aesthetic qualities affected by the project-related changes.

ISSUES NOT DISCUSSED FURTHER

The Plan Area is not visible from a designated state scenic highway or county scenic corridor. Sacramento County only has one scenic highway and one scenic corridor, which are both located approximately 20 miles west. Therefore, the project would not result in damage to scenic resources within view of a state scenic highway or locally designated roadways. Impacts related to state scenic highways or county scenic roads would not occur and are not discussed further in this EIR.

A scenic vista is generally considered to be a location from which the public can experience unique and exemplary high-quality views—typically from elevated vantage points that offer panoramic views of great breadth and depth. The visual character of the Plan Area is that of undeveloped flat grasslands, with dilapidated remnants of military uses. However, the site's visual context is also greatly influenced by surrounding development which is primarily sparsely developed agricultural uses, marked by a rendering plant to the south, views of the canal to the east, and sparse residential development in distant views. Views of the Plan Area are not unique in the eastern portion of the county and do not constitute a scenic vista. Furthermore, as described in the Environmental Setting section, existing viewsheds surrounding the Plan Area are limited because of various land features that obscure views of the mountains, the lack of topographical changes, and the distance to nearby mountains. All of these factors prohibit the opportunity for scenic vistas. Impacts to scenic vistas are not discussed further in this EIR.

Impacts and Analysis

2016 Mather Field Project EIR Determination

The Mather Field Project EIR evaluated impacts related to aesthetics and visual resources from implementation of the Mather Field Project which consisted of a realignment of Zinfandel Drive and trunk sewer extension, creation of the Mather Preserve and the establishment of an Urban Development Area designation for the Mather South Plan Area.

The EIR concluded less than significant or no impacts related to scenic resources and vistas, degradation of visual quality, and light and glare. The discussion of impacts can be found on page CK-3 of the Mather Field Project EIR and is hereby incorporated by reference.

Mather South Project Impacts Determination

Impact: Degradation of Existing View and Visual Quality

Implementation of the Mather South Project would result in the development and urbanization of approximately 795 acres of the 848-acre Plan Area. Approximately 53 acres west of Zinfandel Drive is included as part of the Mather Preserve, which would retain its current undeveloped nature. The project also integrates an additional 157 acres of open space into the Plan Area, which includes 33 acres of nature preserve, 50 acres for detention basins, and 74 acres to be used for drainage/trail corridors and landscape buffers. These open space features are dispersed throughout the Plan Area. However, development of the Mather South Project would cause urbanization of the Plan Area, which would be visible from several adjacent roads. Development of the Plan Area would result in the construction of buildings, roadways, parks, and utility structures, along with landscaping, which would obscure distant views of the horizons in all directions.

The Plan Area currently consists of open grassland, interspersed with scattered wetlands and vernal pools and is typical of the larger rural agricultural setting of the area. The southern portion of the Plan Area would be developed with the highest intensity land uses including high density residential (up to 20 dwelling units/acre), the Research and Development Park, and commercial uses. These changes would substantially alter the existing visual character of the site from adjacent viewpoints (Plate AE-1).

Views would change from open space and grassland in an undeveloped setting to a relatively urban residential development. Drivers along Kiefer Boulevard would be the most sensitive to these changes in views. Views from Zinfandel Drive along the western portion of the project would similarly change as there are multiple parcels zoned for commercial uses along the east side of the roadway.

Distant views of the Plan Area from Independence of Mather would also be altered. Mather Preserve provides a buffer of approximately of 2,000 feet from the closest homes to the Plan Area; however, instead of extended views of open space, the Mather South Project would result in visible development beyond the preserved lands. Views of the Plan Area are limited from the north and east because of the Folsom South Canal and the Mather Golf course. Views from Sunrise Boulevard would not change substantially but could result in views of rooftops from various locations. Although public views of the Plan Area from the north would not noticeably change, patrons of Mather Golf course would have views of single-family homes instead of open space.

The project would result in the construction of single-family attached, detached, and multi-family apartments, townhomes, and condominiums of up to two-stories. The proposed housing would be designed to be consistent with the design aesthetic of the community to create a cohesive and unified presentation across the development. Because of the timing of buildout, specific designs have not been selected, but general guidance is provided in Chapter 6 of the Community Master Plan. The project is not located immediately adjacent to other existing housing developments; therefore, community designs and architecture styles can be more flexible because the project would not be required to conform to an existing community character.

Internal roadways would be landscaped, and trees would be planted throughout the site consistent with the Community Master Plan. The project would include drought tolerant, non-invasive species with a preference for native species, and this would be consistent throughout the development. Upon maturity, landscaping and trees would improve the visual character of the development by partially screening the development from surrounding viewpoints. There are no adjacent rural residences, so the change in visual context would be noticed by users of perimeter roadways and possibly by residents and visitors of the Independence at Mather South community.

The project would require new electrical infrastructure to be developed by SMUD to serve the project's demand. A new electrical distribution substation and subtransmission lines would be constructed to connect to the project to the Jackson Bulk Substation, the development of which is discussed in detail in Chapter 19, "Summary of Impacts and

Their Disposition." As discussed in Chapter 1, "Project Description," there are two on-site options for the location of the new distribution substation and overhead subtransmission lines:

Option A: The distribution substation would be located in the center of the Plan Area within COMM1, this would be connected to 69-kV overhead subtransmission lines that would run along the east side of Zinfandel Drive.

Option B: The distribution substation would be located on the eastern side of the Plan Area within R17a, with a 69-kV overhead line that would run along the east side of the Regional Bike Trail on the west side of the Folsom South Canal.

Under either option, the distribution substation would be required to meet the demand generated by the project and to distribute electricity throughout the Mather South Project. It would be located within the Plan Area and would be located such that no adjacency impacts with nearby land uses would occur (e.g., directly adjacent to residential uses). While exact design details are not available, the following summary is a good faith effort at describing the typical distribution substation characteristics

The facility would require approximately 1.5 acres and would be energized by connecting to 69-kV subtransmission lines that are supplied by the Jackson Bulk Substation. Bulk substations typically step-down transmission line voltage of 230 kV to distribution subtransmission voltage of 69 kV through power transformers. The distribution substations would in turn step down the electricity supply to 12 kV for delivery to residential neighborhoods. Each distribution substation would include up to two transformers, eight capacitor banks, two backup battery systems, two metal clad switchgears, and one or two poles with a disconnect switch. Substations will require an access road of at least 20-feet wide if the access roads are straight, and 24-foot wide if there are turns. SMUD's standard construction for sub-transmission lines is overhead construction with poles that if pole-mounted would be approximately 65-feet tall. The distribution substations would distribute electricity via underground and/or overhead 12-kV lines to neighborhoods. Permanent utility easements would be required. Construction of the distribution substations would occur over a one-year period.

Option A would result in siting overhead 69-kV subtransmission lines along the edge of Mather Preserve that would be approximately 65-feet tall. Although powerlines do not block views, they do represent an urbanizing element and would disrupt the visual context of the natural landscape. The project includes additional open space adjacent to the Mather Preserve that would help to maintain that visual quality, nonetheless, views of the preserve would be diminished from existing conditions. Therefore, placement of powerlines adjacent to Mather Preserve would add a feature that would substantially degrade the visual quality along Zinfandel Drive creating a potentially significant impact.

Option B would result in siting overhead 69-kV subtransmission lines along the west side of Folsom South Canal. These subtransmission lines could alter existing public

views from Sunrise Boulevard; however, they would be over 250 feet away. This distance reduces visual impacts from Sunrise Boulevard. Furthermore, Sunrise Boulevard supports high vehicle speeds with many existing overhead powerlines; therefore, views of distant powerlines would not substantially change views in the area. Impacts associated with siting new subtransmission lines along Folsom South Canal would not be significant.

Public views of the Plan Area would permanently change from views of flat, largely undeveloped land, to a more suburban and urban environment consisting of homes, roads, commercial buildings, landscaping, and other municipal infrastructure. In general, views of the Plan Area would exhibit more suburban tendencies, with rooflines and commercial buildings becoming predominant. As described in the Environmental Setting, the project would be required to comply with existing and proposed design standards, which provide requirements that would maintain order and continuity throughout the design of the project. The Community Master Plan includes design guidelines that would result in the development of a cohesive and orderly aesthetic. Nonetheless, because the area is currently undeveloped, the project would result in a permanent and substantial change to the visual character of the area.

The urbanization that would occur by the implementation and buildout of the Mather South Project would result in a permanent alteration of views and visual quality of the Plan Area and surrounding areas. Although, the project would alter the existing undeveloped state of the project site, the development would only be seen at a distance, would not dominate the views, and would be visible for a short period of time to travelers along nearby roadways. While the project includes adoption of a Community Master Plan with Design Guidelines and Development Standards, and would implement a cohesive landscaping program to ensure an attractive new development that would integrate the new uses with an adjacent preserve, the change in visual quality would be permanent and drastic, regardless of whether or not the new development community would be visually appealing or not. This would be a significant impact. Besides design guidelines and policies that would guide the visual characteristics of a development and which are already required for the project, no other feasible mitigation is available to reduce the magnitude of visual changes that would occur at the site. Therefore, this impact would be **significant and unavoidable**.

MITIGATION MEASURES

None available.

IMPACT: NEW SOURCES OF LIGHT OR GLARE

The Plan Area is currently undeveloped and does not contain existing lighting or sources of glare. However, residential development and roadways surrounding the project site currently produce a moderate amount of nighttime lighting. The Plan Area is designated as an LZ2 zone (semi-rural) (low levels of ambient nighttime light) under the County's Lighting Ordinance. With development of the project, sources of nighttime lighting would be added to the environment and would moderately increase nighttime lighting in the area with the type and intensity of lighting consistent with suburban

residential neighborhoods. The project would result in standard lighting systems with average light output, such as porch lights, parking lot lights, street lighting, and similar. When viewed from more distant areas, the lighting associated with the residential development could increase skyglow in the area because the existing project site is currently dark. Additionally, there could be some disruption for wildlife which use the habitats surrounding the site because sky glow would increase ambient lighting conditions in the area, even as direct light would be shielded from impacts to preserve areas. This would be a potentially significant impact.

Development on the Plan Area could also increase daytime glare because of an increase in the number of windows and use of certain types of building materials. The project would also result in thousands of new residential units that would be required to include rooftop photovoltaic (PV) solar panels per new California Energy Commission regulations adopted in May 2018. In some cases, concerns have been raised about the possibility of PV-induced glare causing conflicts with airline pilots. However, according to the US Department of Energy (DOE), it is a common misconception that PV panels inherently cause excessive glare that results in nuisances to neighbors and additional safety risks to pilots. The DOE points out that while PV panels can create some glare, their function is to absorb light, rather than reflect it. The DOE provides a fact sheet to provide additional information on potential issues associated with glare from PV panels and to dispel common misconceptions about PV panels. The fact sheet, prepared by Meister Consultants Group (DOE 2014), points out PV panels are usually built with dark-colored materials, which absorb light and are covered with anti-reflective coating that reflect less than 2 percent of incoming light. This is similar to the absorption rates of water, and less than soil and wood shingles. The fact sheet also points out that there is often confusion between the use of solar PV systems and concentrated solar power (CSP) systems, which use mirrors to reflect light to heat water, which can be significant sources of glare, but are used for other purposes and not for residential electricity-generation, as would be required by the regulations.

The proposed Development Standards of the Community Master Plan rely on the County Zoning Code (Section 3.6.6.C), which requires that all solar collectors (i.e., PV panels) are oriented on rooftops or other hardscape areas to avoid unreasonable glare from solar panels onto adjacent properties. This, combined with the light absorbing design of solar panels, as well as the distance from Mather Airport and topography of the site, would ensure that solar PV panels on buildings developed within the Plan Area would not result in conditions that would create major new sources of glare. Therefore, impacts associated with glare would be less than significant.

Impacts related to lighting would be a potentially significant impact, however, as a standard condition, the project would be required to comply with General Plan Policy LU-31, the County's Zoning Code (in accordance with specific lighting regulations by development type), and Section 5 of the County Improvement Standards. These requirements would ensure that light and glare created by the proposed development would be minimized through use of lighting fixtures that are directed away from adjacent areas to minimize light pollution and spillage onto adjacent properties. Additionally, Mitigation Measure AE-1 would require all lighting applications developed within the

Plan Area to use fixtures approved by and following illumination levels per the Illuminating Engineering Society of North America. Therefore, impacts associated with the creation of light or glare, such that it would adversely affect daytime or nighttime views in the area, would be **less than significant with mitigation** incorporated.

MITIGATION MEASURES

AE-1. The Community Master Plan shall be amended to require all lighting applications to use fixtures approved by the International Dark Sky Association.

4 AIR QUALITY

INTRODUCTION

The Mather Field Project EIR (2016) evaluated the Mather South Plan Area at the plan-level and that analysis is hereby incorporated by reference in this EIR and is summarized below where appropriate. This chapter includes a discussion of existing air quality conditions, a summary of applicable regulations, and an analysis of potential construction and operational air quality impacts caused by implementation of the Mather South Project. Mitigation measures are recommended as necessary to reduce significant air quality impacts to the extent feasible.

During the NOP scoping process, no commenters raised concerns about air quality. A copy of the NOP and comment letters received in response to the NOP are included in Appendix PD-2 of this Mather South Project Draft EIR.

ENVIRONMENTAL SETTING

The Plan Area is located adjacent to the City of Rancho Cordova, within Sacramento County, California, which is within the Sacramento Valley Air Basin (SVAB). The SVAB also includes all of Butte, Colusa, Glenn, Shasta, Sutter, Tehama, Yolo, and Yuba Counties; the western portion of Placer County; and the eastern portion of Solano County.

The ambient concentrations of air pollutant emissions are determined by the amount of emissions released by the sources of air pollutants and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and sunlight. Therefore, existing air quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air pollutant sources, as discussed separately below.

TOPOGRAPHY, METEOROLOGY, AND CLIMATE

The SVAB is a relatively flat area bordered by the north Coast Ranges to the west and the northern Sierra Nevada to the east. Air flows into the SVAB through the Carquinez Strait, the only breach in the western mountain barrier, and moves across the Sacramento River–San Joaquin River Delta (Delta) from the San Francisco Bay area.

The Mediterranean climate type of the SVAB is characterized by hot, dry summers and cool, rainy winters. During the summer, daily temperatures range from 50 degrees Fahrenheit (°F) to more than 100°F. The inland location and surrounding mountains shelter the area from much of the ocean breezes that keep the coastal regions moderate in temperature. Most precipitation in the area results from air masses that move in from the Pacific Ocean, usually from the west or northwest, during the winter

months. More than half the total annual precipitation falls during the winter rainy season (November through February); the average winter temperature is a moderate 49°F. Also characteristic of SVAB winters are periods of dense and persistent low-level fog, which are most prevalent between storms. The prevailing winds are moderate in speed and vary from moisture-laden breezes from the south to dry land flows from the north.

The mountains surrounding the SVAB create a barrier to airflow, which leads to the entrapment of air pollutants when meteorological conditions are unfavorable for transport and dilution. The highest frequency of poor air movement occurs in the fall and winter when high-pressure cells are present over the SVAB. The lack of surface wind during these periods, combined with the reduced vertical flow caused by a decline in surface heating, reduces the influx of air and leads to the concentration of air pollutants under stable metrological conditions. Surface concentrations of air pollutant emissions are highest when these conditions occur in combination with agricultural burning activities or with temperature inversions, which hamper dispersion by creating a ceiling over the area and trapping air pollutants near the ground.

Elevated levels of ozone typically occur May through October in the SVAB. This period is characterized by poor air movement in the mornings with the arrival of the Delta sea breeze from the southwest in the afternoons. In addition, longer daylight hours provide a plentiful amount of sunlight to fuel photochemical reactions between ROG and NO_X, which result in ozone formation. Typically, the Delta breeze transports air pollutants northward out of the SVAB; however, a phenomenon known as the Schultz Eddy prevents this from occurring during approximately half of the time from July to September. The Schultz Eddy phenomenon causes the wind to shift southward and blow air pollutants back into the SVAB. This phenomenon exacerbates the concentration of air pollutant emissions in the area and contributes to the area violating the ambient-air quality standards.

The local meteorology of the Plan Area and vicinity is represented by measurements recorded at the Western Regional Climate Center (WRCC) Sacramento 5 ESE station. The normal annual precipitation is approximately 18 inches. January temperatures range from a normal minimum of 40°F to a normal maximum of 53.5°F. July temperatures range from a normal minimum of 59.2°F to a normal maximum of 92°F (WRCC 2018). The predominant wind direction is from the south (WRCC 2017).

EXISTING AIR QUALITY

CRITERIA AIR POLLUTANTS

Concentrations of emissions from criteria air pollutants indicate the quality of the ambient air. Brief descriptions of key criteria air pollutants in the SVAB are provided below. Emission source types, health effects are summarized below. Sacramento County's attainment status for the California Ambient Air Quality Standards (CAAQS) and the National Ambient Air Quality Standards (NAAQS) are shown in Table AQ-1. Monitoring data applicable to the Plan Area is provided in Table AQ-2.

Table AQ-1: Attainment Status Designations for Sacramento County

Pollutant	Federal Standard	State Standard
Respirable particulate matter (PM_{10})	Attainment (24-hour)	Nonattainment (24-hour)
		Nonattainment (Annual)
Fine particulate matter ($PM_{2.5}$)	Nonattainment (24-hour)	(No State Standard for 24-Hour)
	Unclassified/Attainment (Annual)	Nonattainment (Annual)
Carbon monoxide (CO)	Attainment (1-hour)	Attainment (1-hour)
	Attainment (8-hour)	Attainment (8-hour)
Nitrogen dioxide (NO_2)	Unclassified/Attainment (1-hour)	Attainment (1-hour)
	Unclassified/Attainment (Annual)	Attainment (Annual)
Sulfur dioxide (SO_2)[5]	(Attainment Pending) (1-Hour)	Attainment (1-hour)
		Attainment (24-hour)
Lead (Particulate)	Unclassified/Attainment (3-month rolling avg.)	Attainment (30-day average)
Hydrogen Sulfide	No Federal Standard	Unclassified (1-hour)
Sulfates		Attainment (24-hour)
Visibly Reducing Particles		Unclassified (8-hour)

Notes:

[1] Air Quality meets federal 1-hour Ozone standard (77 FR 64036). EPA revoked this standard, but some associated requirements still apply. SMAQMD attained the standard in 2009. SMAQMD has requested EPA recognize attainment to fulfill the requirements.

[2] Per Health and Safety Code (HSC) § 40921.5(c), the classification is based on 1989 – 1991 data, and therefore does not change.

[3] 1997 Standard.

[4] 2008 Standard.

Source: SMAQMD 2016

OZONE

Ground-level ozone is not emitted directly into the air but is created by chemical reactions between reactive organic gases (ROG) and oxides of nitrogen (NO_X). This happens when pollutants emitted by cars, power plants, industrial boilers, refineries, chemical plants, and other sources chemically react in the presence of sunlight. Ozone at ground level is a harmful pollutant, because of its effects on people and the environment, and is the main component in smog (EPA 2016).

Acute health effects of ozone exposure include increased respiratory and pulmonary resistance, cough, pain, shortness of breath, and lung inflammation. Chronic health effects include permeability of respiratory epithelia and possibility of permanent lung impairment (EPA 2016). Emissions of the ozone precursors ROG and NO_X have decreased over the past two decades across California because of more stringent motor vehicle standards and cleaner burning fuels (CARB 2014).

NITROGEN DIOXIDE

Nitrogen dioxide (NO_2) is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO_2. The combined emissions of NO and NO_2 are referred to as NO_X and are reported as equivalent NO_2. Because NO_2 is formed and depleted by reactions associated with photochemical smog (ozone), the NO_2 concentration in a particular geographical area may not be representative of the local sources of NO_X emissions (EPA 2012).

Acute health effects of exposure to NO_X includes coughing, difficulty breathing, vomiting, headache, eye irritation, chemical pneumonitis, or pulmonary edema, breathing abnormalities, cough, cyanosis, chest pain, rapid heartbeat, and death. Chronic health effects include chronic bronchitis and decreased lung function (EPA 2016).

PARTICULATE MATTER

Respirable particulate matter with an aerodynamic diameter of 10 micrometers or less is referred to as PM_{10}. PM_{10} consists of particulate matter emitted directly into the air, such as fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires and natural windblown dust, and particulate matter formed in the atmosphere by reaction of gaseous precursors (CARB 2014). Fine particulate matter ($PM_{2.5}$) includes a subgroup of smaller particles that have an aerodynamic diameter of 2.5 micrometers or less. PM_{10} emissions in the SVAB are dominated by emissions from area sources, primarily fugitive dust from vehicle travel on unpaved and paved roads, farming operations, construction and demolition, and particles from residential fuel combustion. Direct emissions of PM_{10} are projected to remain relatively constant through 2035. Direct emissions of $PM_{2.5}$ have steadily declined in the SVAB between 2000 and 2010 and then are projected to increase very slightly through 2035. Emissions of $PM_{2.5}$ in the SVAB are dominated by the same sources as emissions of PM_{10} (CARB 2014).

Acute health effects of PM_{10} exposure include breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, and premature death. Chronic health effects include alterations to the immune system and carcinogenesis (EPA 2016).

MONITORING STATION DATA AND ATTAINMENT AREA DESIGNATIONS

Criteria air pollutant concentrations are measured at several monitoring stations in the SVAB. The Sloughhouse station is the closest station to the project site with recent data for ozone. The closest station to the project site with data for PM_{10} is the Sacramento-Branch Center Road #2 air monitoring station while $PM_{2.5}$ is monitored at the Sacramento – Health Department monitoring station. In general, the ambient air quality measurements from these stations are representative of the air quality near the project site. Table AQ-2 summarizes the air quality data from the last three years (2015—2017).

Both California Air Resources Board (CARB) and U.S. Environmental Protection Agency (EPA) use this type of monitoring data to designate areas according to their attainment status for criteria air pollutants (attainment designations are summarized above in Table AQ-1).

Table AQ-2: Summary of Annual Data on Ambient Air Quality (2014-2016)[1]

	2015	2016	2017
Ozone			
Maximum concentration (1-hr/8-hr avg, ppm)	0.122/0.094	0.103/0.088	0.091/0.083
Number of days state standard exceeded (1-hr/8-hr)	4/14	4/7	0/7
Number of days national standard exceeded (8-hr)	14	17	6
Fine Particulate Matter ($PM_{2.5}$)			
Maximum concentration (24-hour µg/m^3)	35.5	20.2	34.5
Number of days national standard exceeded (24-hour measured)[2]	3.5	*	*
Respirable Particulate Matter (PM_{10})[3]			
Maximum concentration (µg/m^3)	45.0	44.0	81.0
Number of days state standard exceeded	0	0	18.4
Number of days national standard exceeded	0	0	0

Notes: µg/m3 = micrograms per cubic meter; ppm = parts per million

[1] Measurements from the Sloughhouse station for ozone.

[2] Measurements obtained from the Sacramento–Health Dept. Stockton Blvd. station.

[3] Measurements obtained from the Sacramento-Branch Center Road #2 station.

* Insufficient data available.

Source: CARB 2018

TOXIC AIR CONTAMINANTS

According to the *California Almanac of Emissions and Air Quality*, most of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being diesel PM (CARB 2014:5-2 to 5-4). Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emissions control system is being used. Unlike the other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. However, CARB has made preliminary concentration estimates based on a PM exposure method. This method uses the CARB emissions inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies to estimate concentrations of diesel PM. In addition to diesel PM, the TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene.

Diesel PM poses the greatest health risk among these 10 TACs mentioned. Based on receptor modeling techniques, CARB estimated its health risk to be 360 excess cancer cases per million people in the SVAB in the year 2000 (CARB 2009:5-83). Overall, statewide emissions of diesel PM are forecasted to decline by 71 percent between 2000 and 2035 (CARB 2014:3-8).

ODORS

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

The ability to detect odors varies considerably among the population and overall is quite subjective. Some individuals can smell very minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; an odor that is offensive to one person may be perfectly acceptable to another (e.g., fast food restaurant). It is important to also note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

The Sacramento Rendering Company **(SRC)** has operated a rendering plant on Kiefer Boulevard since 1955 and is located approximately 700 feet south of the Plan Area. **SRC receives restaurant grease and animal waste materials and renders them into products used in the manufacturing of many everyday items such as soaps, cosmetics, candles, and animal feed.** Odor complaint data was provided by SMAQMD for the past 25 years and indicates that the facility generates objectionable odors to nearby receptors. **Given the nature of the operations at SRC, the facility is regulated by a number of agencies, including the Sacramento Metropolitan Air Quality Management District (SMAQMD). The SMAQMD's role in regulating SRC is to ensure that SRC follows federal, state, and local air pollution control regulations designed to protect the public health. Additional information about SMAQMD's role in regulating operations at SRC are provided below in the Regulatory Setting.**

SENSITIVE RECEPTORS

Sensitive receptors are generally considered to include those land uses where exposure to pollutants could result in health-related risks to sensitive individuals, such as children or the elderly. Residential dwellings, schools, hospitals, playgrounds, and similar facilities are of primary concern because of the presence of individuals particularly sensitive to pollutants and the potential for increased and prolonged exposure of individuals to pollutants.

New residences would be constructed as part of the Mather South Project and located throughout the Plan Area. Two new schools and one environmental education campus, are proposed. Refer to Plate PD-9 for residential land use, schools, and environmental education campus locations. The closest nearby existing sensitive receptors are located

along Sunrise Boulevard, approximately 500 feet east of the eastern Plan Area. Other residential areas are located approximately 2,250 feet west of the western Plan Area boundary (i.e., Zinfandel Drive) and approximately 2,000 feet east of the eastern Plan Area boundary.

REGULATORY SETTING

Air quality within the project area is regulated through the efforts of various federal, State, regional, and local government agencies. These agencies work jointly, as well as individually, to improve air quality through legislation, planning, policy-making, education, and a variety of other programs. The agencies responsible for improving air quality within the SVAB are discussed below.

FEDERAL

U.S. ENVIRONMENTAL PROTECTION AGENCY

EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments made by Congress were in 1990.

CRITERIA AIR POLLUTANTS

The CAA required EPA to establish NAAQS. As shown in Table AQ-3, EPA has established primary and secondary NAAQS for the following criteria air pollutants: ozone, carbon monoxide (CO), NO_2, sulfur dioxide (SO_2), respirable and fine particulate matter (PM_{10} and $PM_{2.5}$), and lead. The primary standards protect the public health with an adequate health margin for safety and the secondary standards protect public welfare from adverse effects, including those related to effects on soils, water, crops, vegetation, human-made materials, animals, wildlife, weather, visibility, and climate. The CAA also required each state to prepare a State implementation plan (SIP) for attaining and maintaining the NAAQS. The federal Clean Air Act Amendments of 1990 (CAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is modified periodically to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. EPA is responsible for reviewing all SIPs to determine whether they conform to the mandates of the CAA and its amendments, and whether implementation will achieve air quality goals. If EPA determines a SIP to be inadequate, a federal implementation plan that imposes additional control measures may be prepared for the nonattainment area. If an approvable SIP is not submitted or implemented within the mandated time frame, sanctions may be applied to transportation funding and stationary air pollution sources in the air basin.

Table AQ-3: Ambient Air Quality Standards

Pollutant	Averaging Time	California[a,b]	National[c]	
			Primary[b,d]	Secondary[b,e]
Ozone	1-hour	0.09 ppm (180 µg/m^3)	–[e]	Same as primary standard
	8-hour	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	
Carbon monoxide (CO)	1-hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	Same as primary standard
	8-hour	9 ppm[f] (10 mg/m^3)	9 ppm (10 mg/m^3)	
Nitrogen dioxide (NO_2)[g]	Annual arithmetic mean	0.030 ppm (57 µg/m^3)	53 ppb (100 µg/m^3)	Same as primary standard
	1-hour	0.18 ppm (339 µg/m^3)	100 ppb (188 µg/m^3)	—
Sulfur dioxide (SO_2)	24-hour	0.04 ppm (105 µg/m^3)	—	—
	3-hour	—	—	0.5 ppm (1300 µg/m^3)
	1-hour	0.25 ppm (655 µg/m^3)	75 ppb (196 µg/m^3)	—
Respirable particulate matter (PM_{10})	Annual arithmetic mean	20 µg/m^3	—	Same as primary standard
	24-hour	50 µg/m^3	150 µg/m^3	
Fine particulate matter ($PM_{2.5}$)	Annual arithmetic mean	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
	24-hour	—	35 µg/m^3	Same as primary standard
Lead[g]	Calendar quarter	—	35 µg/m^3	Same as primary standard
	30-Day average	1.5 µg/m^3	—	—
	Rolling 3-month average	—	0.15 µg/m^3	Same as primary standard
Hydrogen sulfide	1-hour	0.03 ppm (42 µg/m^3)	No national standards	
Sulfates	24-hour	25 µg/m^3		
Vinyl chloride[f]	24-hour	0.01 ppm (26 µg/m^3)		
Visibility-reducing particulate matter	8-hour	Extinction of 0.23 per km		

Notes: µg/m_3 = micrograms per cubic meter; km = kilometers; ppb = parts per billion; ppm = parts per million.

Pollutant	Averaging Time	California[a,b]	National[c]	
			Primary[b,d]	Secondary[b,e]

[a] California standards for ozone, SO_2 (1- and 24-hour), NO_2, particulate matter, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] Concentration expressed first in units in which it was issued. Equivalent units given in parentheses are based on a reference temperature of 25 degrees Celsius (°C) and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[c] National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over three years, is equal to or less than the standard. The PM10 24-hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. The PM2.5 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact the U.S. Environmental Protection Agency for further clarification and current federal policies.

[d] National primary standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[e] National secondary standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[f] The California Air Resources Board has identified lead and vinyl chloride as toxic air contaminants with no threshold of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Source: CARB 2016

TOXIC AIR CONTAMINANTS

Toxic air contaminants (TACs), or in federal parlance, hazardous air pollutants (HAPs) are a defined set of airborne pollutants that may pose a present or potential hazard to human health. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

A wide range of sources, from industrial plants to motor vehicles, emit TACs. The health effects associated with TACs are quite diverse and generally are assessed locally, rather than regionally. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis or genetic damage; or short-term acute affects such as eye watering, respiratory irritation (a cough), running nose, throat pain, and headaches.

For evaluation purposes, TACs are separated into carcinogens and non-carcinogens based on the nature of the physiological effects associated with exposure to the pollutant. Carcinogens are assumed to have no safe threshold below which health impacts would not occur. This contrasts with criteria air pollutants for which acceptable levels of exposure can be determined and for which the ambient standards have been established (Table AQ-3). Cancer risk from TACs is expressed as excess cancer cases per one million exposed individuals, typically over a lifetime of exposure.

EPA and, in California, CARB regulate HAPs and TACs, respectively, through statutes and regulations that generally require the use of the maximum available control technology or best available control technology for toxics to limit emissions.

STATE

CARB is the agency responsible for coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). The CCAA, which was adopted in 1988, required CARB to establish CAAQS (Table AQ-3).

CRITERIA AIR POLLUTANTS

CARB has established CAAQS for sulfates, hydrogen sulfide, vinyl chloride, visibility-reducing particulate matter, and the above-mentioned criteria air pollutants. In most cases the CAAQS are more stringent than the NAAQS. Differences in the standards are generally explained by the health effects studies considered during the standard-setting process and the interpretation of the studies. In addition, the CAAQS incorporate a margin of safety to protect sensitive individuals.

The CCAA requires that all local air districts in the state endeavor to achieve and maintain the CAAQS by the earliest date practical. The act specifies that local air districts should focus attention on reducing the emissions from transportation and area-wide emission sources, and provides air districts with the authority to regulate indirect sources.

TOXIC AIR CONTAMINANTS

TACs in California are regulated primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807, Chapter 1047, Statutes of 1983) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588, Chapter 1252, Statutes of 1987). AB 1807 sets forth a formal procedure for ARB to designate substances as TACs. Research, public participation, and scientific peer review are required before CARB can designate a substance as a TAC. To date, CARB has identified more than 21 TACs and adopted EPA's list of HAPs as TACs. Most recently, PM exhaust from diesel engines (diesel PM) was added to CARB's list of TACs.

After a TAC is identified, CARB then adopts an airborne toxics control measure for sources that emit that TAC. If a safe threshold exists for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If no safe threshold exists, the measure must incorporate best available control technology for toxics to minimize emissions.

The Hot Spots Act requires that existing facilities that emit toxic substances above a specified level prepare an inventory of toxic emissions, prepare a risk assessment if emissions are significant, notify the public of significant risk levels, and prepare and implement risk reduction measures.

AB 617 of 2017 aims to improve air quality and public health in communities where exposure to TAC sources are highest. AB 617 imposes a new state-mandated local program to address non-vehicular sources (e.g., refineries, manufacturing facilities) of criteria air pollutants and TACs. The bill requires CARB to identify high-pollution areas and directs air districts to focus air quality improvement efforts through adoption of community emission reduction programs within these identified areas. Currently, air

districts review individual sources and impose emissions limits on emitters based on based available control technology, pollutant type, and proximity to nearby existing land uses. This bill addresses the cumulative and additive nature of air pollutant health effects by requiring community-wide air quality assessment and emission reduction planning.

CARB has adopted diesel exhaust control measures and more stringent emissions standards for various transportation-related mobile sources of emissions, including transit buses, and off-road diesel equipment (e.g., tractors, generators). Over time, the replacement of older vehicles will result in a vehicle fleet that produces substantially lower levels of TACs than under current conditions. Mobile-source emissions of TACs (e.g., benzene, 1-3-butadiene, diesel PM) have been reduced significantly over the last decade and will be reduced further in California through a progression of regulatory measures (e.g., Low Emission Vehicle/Clean Fuels and Phase II reformulated gasoline regulations) and control technologies. With implementation of CARB's Risk Reduction Plan, it is expected that diesel PM concentrations will be 85 percent less in 2020 in comparison to year 2000. Adopted regulations are also expected to continue to reduce formaldehyde emissions from cars and light-duty trucks. As emissions are reduced, it is expected that risks associated with exposure to the emissions will also be reduced.

LOCAL

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

CRITERIA AIR POLLUTANTS

Sacramento Metropolitan Air Quality Management District (SMAQMD) is the primary agency responsible for planning to meet federal and State ambient air quality standards in Sacramento County. SMAQMD works with other local air districts in the Sacramento region to maintain the region's portion of the SIP for ozone. The SIP is a compilation of plans and regulations that govern how the region and State will comply with the federal Clean Air Act requirements to attain and maintain the federal ozone standard. Ozone plans in the Sacramento Metro region include the 1994 Sacramento Area Regional Ozone Attainment Plan and the 2009 8-Hour Ozone Attainment and Reasonable Further Progress Plan. These plans were produced to develop a strategy to attain the federal one-hour and 8-hour ozone standards. The Sacramento Region has been designated as a "severe" 8-hour ozone nonattainment area with an extended attainment deadline of June 15, 2019.

SMAQMD has developed a set of guidelines for use by lead agencies when preparing environmental documents. The guidelines contain thresholds of significance for criteria air pollutants and TACs, and make recommendations for conducting air quality analyses.

All projects are subject to adopted SMAQMD rules and regulations in effect at the time of construction. Specific rules applicable to the construction of the project may include but are not limited to the following:

- **Rule 201**: General Permit Requirements. Any project that includes the use of equipment capable of releasing emissions to the atmosphere may be required to

obtain permit(s) from SMAQMD before equipment operation. The applicant, developer, or operator of a project that includes an emergency generator, boiler, or heater should contact SMAQMD early to determine whether a permit is required, and to begin the permit application process. Portable construction equipment (e.g., generators, compressors, pile drivers, lighting equipment) with an internal combustion engine greater than 50 horsepower must have a SMAQMD permit or CARB portable equipment registration.

- **Rule 202**: New Source Review. The purpose of this rule is to provide for the issuance of authorities to construct and permits to operate at new and modified stationary air pollution sources and to provide mechanisms, including emission offsets, by which authorities to construct such sources may be granted without interfering with the attainment or maintenance of ambient air quality standards.
- **Rule 402**: Nuisance. A person shall not discharge from any source whatsoever such quantities of air contaminants or other materials which cause injury, detriment, nuisance or annoyance to any considerable number of persons or the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause or have natural tendency to cause injury or damage to business or property.
- **Rule 403**: Fugitive Dust. The developer or contractor is required to control dust emissions from earthmoving activities or any other construction activity to prevent airborne dust from leaving the project site.
- **Rule 417**: Wood Burning Appliances. The purpose of the rule is to limit emissions of particulate matter to the atmosphere from the operation of wood burning appliances.
- **Rule 442**: Architectural Coatings. The purpose of the rule is to limit the emissions of VOCs from the use of architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the District.

In addition, effective as of October 10, 2005, if modeled construction-generated emissions for a project are not reduced to SMAQMD's thresholds of significance after the standard construction mitigation is applied, then an offsite construction mitigation fee is recommended. The fee must be paid before a grading permit can be issued. This fee is used by SMAQMD to purchase offsite emissions reductions. Such purchases are made through SMAQMD's Agriculture and Construction Equipment Replacement Program, through which select owners of heavy-duty equipment in Sacramento County can repower or retrofit their old engines with cleaner engines or technologies.

TOXIC AIR CONTAMINANTS

At the local level, air districts may adopt and enforce CARB control measures. Under SMAQMD Rule 201 ("General Permit Requirements"), Rule 202 ("New Source Review"), and Rule 207 ("Federal Operating Permit"), all sources that possess the potential to emit TACs are required to obtain permits from SMAQMD. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including New Source Review standards and air toxics control

measures. SMAQMD limits emissions and public exposure to TACs through several programs. SMAQMD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors. Sensitive receptors are people, or facilities that generally house people (e.g., schools, hospitals, residences), that may experience adverse effects from unhealthful concentrations of air pollutants.

ODORS

Although offensive odors rarely cause any physical harm, they can be very unpleasant, leading to considerable stress among the public and often generating citizen complaints to local governments and SMAQMD. SMAQMD's Rule 402 (Nuisance) regulates odorous emissions.

As mentioned above, SMAQMD is involved in regulating operations at SRC. The principal method by which the SMAQMD regulates SRC is through a permit to operate. This permit requires SRC to operate in accordance with specific conditions. These conditions are enforced by regular compliance inspections. Due to the number of odor complaints the SMAQMD receives regarding SRC, the facility is inspected frequently to ensure that it is operating in full compliance with permit conditions.

The surrounding land uses have changed considerably since SRC began operating at its current location. More recently, the County of Sacramento approved a large residential project in the Sunrise/Douglas area. When that development was approved by the Sacramento County Board of Supervisors, an agreement was reached between the developer, Sacramento County, and SRC to install an enhanced odor control system prior to the issuance of any building permits for structures located downwind of the plant. This particular odor control system was not required by any air pollution control regulations – it was a voluntary effort by the developer and SRC to reduce odors already known to exist around the plant. Even though this equipment was voluntarily installed, it is still subject to SMAQMD permitting requirements to ensure that it meets local, state, and federal emission requirements.

SRC has indicated that the odor control equipment it installed is a state-of-the-art system that takes air from the rendering process through a combination of chemical and thermal treatments to reduce pollutants and odors. The primary air pollutants emitted from rendering operations are Volatile Organic Compounds (VOCs). There are many different types of VOCs which may be emitted, including organic sulfides, disulfides and aromatic compounds. Given the low odor detection threshold for some compounds and varying sensitivities among individuals who may detect odor downwind of the plant, it is possible to detect odors from SRC even though the odor control equipment is being operated within design specifications and in full compliance with SMAQMD permit conditions.

In addition to its authority to establish permit conditions to limit the discharge of air pollutants from facilities, the SMAQMD has a nuisance rule (Rule 402) that,

under most scenarios, would apply when a facility operating in compliance with permit conditions is still causing a public odor nuisance. However, California Civil Code Section 3482.6, "The Right to Farm Act", specifically (i) includes rendering plants in the definition of agricultural activity, and (ii) exempts agricultural processing facilities and rendering plants from nuisance rules if the nuisance is due to changed conditions that occur after an agricultural activity has been in continuous operation for more than three years (so long as it was not a nuisance at the time it began operation).

SRC predates most of the other development in the surrounding area. Consequently, as to the newer developments, if SRC is operating within the limits of its SMAQMD permit and the SMAQMD receives odor complaints, the SMAQMD has no authority to take an enforcement action against the facility.

However, the SMAQMD has worked with SRC in an effort to lessen odor impacts on the community, and SRC is interested in hearing from surrounding residents, businesses, and the general public with comments and/or concerns about their operations. To this end, SRC has established a 24-Hour Hotline 1-800-339-6493 for reporting concerns. The hotline is staffed during business hours and voice mail after hours. SRC can be contacted directly via email at airyourthoughts@SRCCompanies.com or contact them by mail at 11350 Kiefer Boulevard, Mather, CA 95830. Additional information on SRC may also be found on the County of Sacramento's website.

In summary, to ensure SRC properly operates its odor control equipment, the SMAQMD conducts regular inspections of the plant. Under certain conditions, odors may be detected even when this equipment is operated properly. Given the limitations of the SMAQMD's authority as it relates to rendering plants, odors alone do not constitute a violation of existing SMAQMD regulations.

Sacramento County General Plan

The Sacramento County General Plan contains the following policies related to air quality that may be applicable to the project.

AQ-3. Buffers and/or other appropriate mitigation shall be established on a project-by-project basis and incorporated during review to provide for protection of sensitive receptors from sources of air pollution or odor. The California Air Resources Board's "Air Quality and Land Use Handbook: A Community Health Perspective," and the [SMAQMD's] approved Protocol (Protocol for Evaluating the Location of Sensitive Land uses Adjacent to Major Roadways) shall be utilized when establishing these buffers.

AQ-4. Developments which meet or exceed thresholds of significance for ozone precursor pollutants as adopted by the Sacramento Metropolitan Air Quality Management District, shall be deemed to have a significant environmental impact. An Air Quality Mitigation Plan shall be submitted to the County of

Sacramento prior to project approval, subject to review and recommendation as to technical adequacy by the Sacramento Metropolitan Air Quality Management District.

AQ-16. Prohibit the idling of on- and off-road engines when the vehicle is not moving or when the off-road equipment is not performing work for a period of time greater than five minutes in any one-hour period.

AQ-19. Require all feasible reductions in emissions for the operation of construction vehicles and equipment on major land development and roadway construction projects.

County of Sacramento Climate Action Plan

On November 9, 2011, the County of Sacramento adopted the Climate Action Plan – Strategy and Framework document, which presented a framework for reducing greenhouse gas (GHG) emissions and developing second phase of the Climate Action Plan (CAP). On September 11, 2012, the Board of Supervisors adopted the Climate Action Plan – Government Operations, which identifies GHG emissions associated with government operations and develops sector level measures to reduce these GHG emissions. The County is currently working to develop the Communitywide CAP to address communitywide emissions. While the County of Sacramento CAP focuses specifically on reducing greenhouse gases, many of the plan's measures have significant benefits for improving air quality as well.

Mather Field Specific Plan and Special Planning Area Ordinance

603-19. PERFORMANCE STANDARDS FOR MATHER FIELD EXCEPT THE SINGLE FAMILY RESIDENCES AND PARKS SUBAREAS AS IDENTIFIED IN SECTION 603-20.3 AS "Site D."

AIR QUALITY

N. The Mather Field Specific Plan area shall be included within a Transportation Management Association and shall implement a comprehensive Transportation Systems Management (TSM) Program designed to reduce automobile dependence and improve air quality. The County, private property owners, and tenants of either the County or private property owners may meet this requirement by joining the existing Folsom/Cordova/El Dorado Hills Transportation Management Agency (TMA) and/or by implementing an approved Air Quality mitigation plan.

O. Individual construction projects shall implement the following dust control measures:

a) All exposed soil and on-site construction roads shall be watered as needed to control fugitive dust.

b) All stockpiled soils shall be enclosed, covered, or watered as needed to control fugitive dust.

c) All inactive portions of the construction site shall either be watered, reseeded, or otherwise stabilized using methods such as AQMD-approved soil binders or jute netting as needed to control fugitive dust.

SIGNIFICANCE CRITERIA

Per Appendix G of the CEQA Guidelines and SMAQMD recommendations, air quality impacts are considered significant if the project would result in any of the following:

1. Cause construction-generated criteria air pollutant or precursor emissions to exceed the SMAQMD-recommended thresholds of 85 pounds per day (lb/day) for NO_X, 80 lb/day and 14.6 tons/year for PM_{10}, and 82 lb/day and 15 tons/year for $PM_{2.5}$. In addition, all SMAQMD-recommended Basic Construction Emission Control Practices, also known as best management practices (BMPs) shall be implemented to minimize emissions of PM_{10} and $PM_{2.5}$; otherwise, the thresholds for both PM_{10} and $PM_{2.5}$ is 0 lb/day.

2. Result in a net increase in long-term operational criteria air pollutant or precursor emissions that exceed the SMAQMD-recommended thresholds of 65 lb/day for ROG and NO_X **(see note below)**, 80 lb/day and 14.6 tons/year for PM_{10}, and 82 lb/day and 15 tons/year for $PM_{2.5}$. In addition, all SMAQMD-recommended Operational BMPs for Particulate Matter Emissions from Land Use Development Projects shall be implemented to minimize emissions of PM_{10} and $PM_{2.5}$; otherwise the thresholds for both PM_{10} and $PM_{2.5}$ is 0 lb/day.

3. Result in short-term construction and long-term operational local mobile-source CO emissions that would violate or contribute substantially to concentrations that exceed the 1-hour CAAQS of 20 ppm or the 8-hour CAAQS of 9 ppm.

4. Expose any off-site sensitive receptor to a substantial incremental increase in TAC emissions that exceed 10 in 1 million for carcinogenic risk (i.e., the risk of contracting cancer) and/or a noncarcinogenic hazard index of 1.0 or greater.

5. Create objectionable odors affecting a substantial number of people.

Note: SMAQMD's recommended operational thresholds for ROG and NO_X are based on the white paper *Foundation for a Threshold: Justification for Air Quality Thresholds of Significance in the Sacramento Federal Nonattainment Area* (August 2001), adopted by the SMAQMD Board of Directors in 2002.

METHODOLOGY

Regional and local criteria air pollutant emissions and associated impacts, as well as impacts from TACs, CO concentrations, and odors were assessed in accordance with

Sacramento County and SMAQMD-recommended methodologies. The Mather South Project's emissions are compared to SMAQMD's construction and operational thresholds.

SIERRA CLUB V. COUNTY OF FRESNO

In December 2018, the California Supreme Court issued its decision in Sierra Club v. County of Fresno (226 Cal.App.4th 704) (hereafter referred to as the Friant Ranch Decision). The case reviewed the long-term, regional air quality analysis contained in the EIR for the proposed Friant Ranch project. The Friant Ranch project is located in unincorporated Fresno County within the San Joaquin Valley Air Basin, an air basin currently in non-attainment for multiple NAAQS and CAAQS, including ozone and PM. The Court ruled that the air quality analysis failed to adequately disclose the nature and magnitude of long-term air quality impacts from emissions of criteria pollutants and precursors "in sufficient detail to enable those who did not participate in its preparation to understand and consider meaningfully the issues the proposed project raises." The Court noted that the air quality analysis did not provide a discussion of the foreseeable adverse effects of project-generated emissions on Fresno County's likelihood of exceeding the NAAQS and CAAQS for criteria air pollutants nor did it explain a connection between the project's emissions and deleterious health impacts. Moreover, as noted by the Court, the EIR did not explain why it was not "scientifically possible" to determine such a connection. The Court concluded that "because the EIR as written makes it impossible for the public to translate the bare numbers provided into adverse health impacts or to understand why such translation is not possible at this time," the EIR's discussion of air quality impacts was inadequate. In response to the Friant Ranch Decision, this analysis adheres to SMAQMD's *Friant Ranch Interim Recommendation*, which serves as the district's temporary guidance until a final methodology has been developed and approved (SMAQMD 2019). At the time of writing this EIR, SMAQMD has not adopted a permanent guidance document; however, it is reasonably foreseeable that SMAQMD could release such guidance in early 2020. A discussion or explanation of how this analysis considers this court guidance is provided below.

CRITERIA AIR POLLUTANTS AND OZONE PRECURSORS

Construction-related emissions of criteria air pollutants and precursors were estimated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 computer program (CAPCOA 2016), as recommended by Sacramento County and SMAQMD. Modeling was based on the proposed land use plan and project-specific information (e.g., size, number of residential units proposed, area to be graded, area to be paved), where available; reasonable assumptions based on typical construction activities; and default values in CalEEMod that are based on the project's location and land use types.

Consistent with SMAQMD's *Friant Ranch Interim Recommendation,* a summary of common air quality modeling tools and programs are discussed below.

Models and tools considered but dismissed from use in the analysis include CARB's OFFROAD model, EPA's AERMOD, CARB's Hotspots Analysis and

Reporting Program (HARP), and the Compressive Air Quality Model (CAMx). OFFROAD, a model developed by CARB to evaluate emissions from off-road sources, was not used in this analysis because it is not comprehensive and lacks emissions forecasts for certain types of equipment that would be in use with the Project. As such, it would not provide a reasonable evaluation of Project impacts. AERMOD was not used because it is best suited to model the movement of plumes from stationary sources, which the Project does not include. HARP was not used for the evaluation of the Project's criteria air pollutants—the pollutants of consideration in the Friant Ranch Decision—because it is best suited to estimate health impacts of TAC exposure from stationary sources.

CAMx was not used in the analysis because it is more applicable to the modeling of emissions on a regional scale (e.g., city, county, multicounty, air basin) rather than at the project level. Additionally, while CAMx may be capable of tracking emission dispersal, the vulnerability of populations is based on individual factors such as life stage (i.e., infants, children, and older persons are more sensitive), preexisting cardiovascular or respiratory disease, and genetic polymorphisms. These data are unavailable; therefore, the degree and magnitude of resulting health impacts from exposure to air pollution is unknown. As such, the magnitude of health impacts cannot be confidently estimated and CAMx was not used.

Construction of the Mather South Project was assumed to begin in 2019. Although the actual construction schedule is unknown at this time, the earliest possible date that construction could occur was used. This assumption would be considered conservative as construction equipment fleet emissions are expected to decrease in the future with increased emission controls and standards. Project construction is anticipated to occur for a period of approximately 14 years. Complete build-out of the project was assumed to occur by 2032. For a detailed description of model input and output parameters and assumptions, refer to Appendix AQ-GHG-1.

To evaluate long-term operational impacts for land use development projects, such as the MSCMP, SMAQMD recommends that projects show consistency with the Sacramento Regional Ozone Attainment Plan and the Sacramento Area Council of Governments' (SACOG's) Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS). SMAQMD has developed operational thresholds of significance for which projects with emissions that do not exceed these levels would be consistent with the air quality plans and thus not interfere with the region's ability to meet air quality attainment targets.

Sacramento County General Plan Policy AQ-4 requires that projects exceeding the SMAQMD operational threshold for ozone precursors (i.e., ROG and NO_X) prepare an Air Quality Mitigation Plan (AQMP), as recommended by SMAQMD. For projects that are included in the current SIP, SMAQMD recommends a 15 percent reduction of ozone precursors from mobile-source emissions. The Mather South Project was included in the most recent 2016 MTP/SCS and SIP, and therefore; consistent with SMAQMD guidance would need to achieve a 15 percent reduction in operational emissions to

show consistency with regional air quality plans. In compliance with both the General Plan policies and SMAQMD guidance, the project has prepared an AQMP to define the processes by which emissions of ROG and NO_X would be reduced by 15 percent. The full text of the AQMP is included as Appendix AQ-2 of this EIR.

Operational emissions of criteria air pollutants and precursors were evaluated in accordance with SMAQMD Recommended Guidance for Land Use Emission Reduction Version 4.0 for Operational Emissions [(AQMP Guidance,) November 30, 2017]. Emission modeling was conducted using CalEEMod Version 2016.3.2, in accordance with Sacramento County and SMAQMD guidance. Emissions estimates included long-term operational emissions of ozone precursors (i.e., ROG, NO_X) associated with mobile-sources (i.e., trip generation) and stationary sources (e.g., area-wide, energy consumption).

Project details such as proposed land uses and densities, build-out phasing, project-generated trips, and project components are based on details included in the traffic study conducted for the project, Transportation Impact Report Mather South Specific Plan Amendment (DKS 2018), data provided by the applicant, and data provided by Sacramento County. Data used in this analysis are included in Appendix TR-1.

To estimate mobile-source emissions, CalEEMod was used in combination with project-specific traffic data included in the study conducted for the Mather South Project (DKS 2018). The traffic study included a description of existing conditions and traffic-related impacts associated with the project as well as other projected regional projects that would be developed in the project vicinity. The project-specific traffic study was used to obtain trip data associated with the project. Specifically, the traffic study included daily vehicle miles traveled (VMT) and daily trips associated with the existing conditions, existing plus project conditions, and the cumulative plus project conditions in 2032.

In accordance with SMAQMD guidance for a project where a traffic study has been conducted, CalEEMod was used to estimate the project's emissions without any incorporated emission reducing measures (i.e., unmitigated emissions scenario) and the project's emissions with any incorporated emission reducing measures (i.e., mitigated emissions scenario). Emissions estimates from the two scenarios were compared to each other to achieve the 15 percent emission reduction target required for the Mather South Project. See the AQMP included in Appendix AQ-2 for details regarding establishment of the 15 percent reduction target and incorporated emission reduction measures.

For the unmitigated emissions scenario, the proposed land uses and acreages for the Mather South Project were input into CalEEMod and all model defaults were left unchanged, except for adjusting the default energy consumption factors. These were altered to account for energy efficiencies between the 2016 and 2019 Title 24 Building Energy Efficiency Standards that would take effect on January 1, 2020. The 2019 Title 24 standards are anticipated to reduce energy consumption in single-family housing and low-rise apartments by 53 percent (including the required on-site solar photovoltaics) and nonresidential buildings and mid-rise apartments by 30 percent. The results from this run would represent the unmitigated emissions of the project without accounting for any reduction measures included in the design of the project (e.g., density and mix of land

uses, regional VMT benefits, included transit and bicycle facilities). Project-related emissions (mitigated emissions scenario) were estimated using the project-specific VMT and daily trips as provided by the traffic study (DKS 2018) and adjusting CalEEMod defaults to estimate emissions from mobile sources. The VMT attributed to the project was processed to include only project-generated VMT that would occur in Sacramento County. The Mather South Project is assumed to be completely built out by 2032. As such, this was the assumed operational year of the project for both emissions scenarios. See Appendix AQ-GHG-1 for details regarding assumptions, inputs, and outputs for both the unmitigated and mitigated emissions scenario.

Emissions from mobile sources, natural gas, and area-sources for both summer and winter were estimated using the applicable modules in CalEEMod. Emissions from consumer products and landscape maintenance activities were estimated as well. Operational emissions from all sources were estimated for full buildout (i.e., 2032). Maximum daily emissions were estimated for both the peak summer day and peak winter day.

Mobile CO Impacts, Health Risk, and Odors

The potential for project-generated traffic to result in concentrations of CO that exceed the NAAQS and CAAQS for this pollutant was evaluated using SMAQMD-recommended screening criteria. The potential for CO hotspots was further evaluated using a quantitative screening method recommended by SMAQMD, as described in Impact AQ-3 below.

Health risk from construction and operational emissions of TACs were assessed qualitatively. This assessment is based on the location from which construction- or operation-related TAC emissions would be generated by land uses developed relative to on-site and off-site sensitive receptors as subsequent phases are built, as well as the duration during which TAC exposure would occur.

Similarly, the assessment of odor-related impacts is based on the types of odors associated with the land uses that would be developed and their location relative to on-site and off-site receptors as subsequent phases are built.

Issues Not Discussed Further

All issues have been evaluated below.

Impacts and Analysis

2016 Mather Field Project EIR Determination

The Mather Field Project EIR evaluated impacts related to air quality from implementation of the Mather Field Project which consisted of a realignment of Zinfandel Drive and trunk sewer extension, creation of the Mather Preserve and the establishment of an Urban Development Area designation for the Mather South Plan Area.

The EIR concluded that the Mather Field Project would result in less-than-significant programmatic impacts related to particulate matter from construction activities, and project-level operational emissions from the Zinfandel Road project; toxic air contaminants; and odors. This discussion is located on pages 6-24 through 6-26; 6-28 through 6-31 and is hereby incorporated by reference.

The EIR concluded that the Mather Field Project would result in less-than-significant programmatic impacts related to particulate matter from construction activities with implementation of Mitigation Measure AQ-1. This discussion is located on pages 6-21 and 6-22. Less-than-significant impacts would occur related to project level construction emissions with implementation of Mitigation Measure AQ-3. This discussion is located on page 6-28.

The EIR also concluded that the Mather Field Project would result in significant and unavoidable impacts related to fugitive dust during construction, and operational emissions even with implementation of Mitigation Measure AQ-2. This discussion is located on pages 6-22 and 6-23; and 6-21; and is hereby incorporated by reference.

ADOPTED MATHER FIELD PROJECT EIR MITIGATION MEASURES

AQ-1: PROGRAMMATIC LEVEL CONSTRUCTION EMISSIONS

All future construction projects in the Mather Field SPA shall include an ozone precursor analysis. If the analysis results indicate that the project will generate ozone precursors that exceed the current Sacramento Metropolitan Air Quality Management District thresholds, this mitigation shall apply. This mitigation may be modified if guidance from the Sacramento Metropolitan Air Quality Management District changes in the future.

1. The project applicant shall provide a plan for approval by the lead agency and the District, demonstrating that the heavy-duty (50 horsepower [hp] or more) offroad vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project-wide fleet average of 20 percent NO_X reduction and 45 percent particulate reduction compared to the most recent California Air Resources Board (CARB) fleet average. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. The District's Construction Mitigation Calculator can be used to identify an equipment fleet that achieves this reduction.

2. The project representative shall submit to the lead agency and District a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine model year, and projected hours of use for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any

30-day period in which no construction activity occurs. At least 48 hours before the use of subject heavy-duty off-road equipment, the project representative shall provide the District with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman. The District's Model Equipment List can be used to submit this information.

3. The project shall ensure that emissions from all off-road diesel-powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately. Non-compliant equipment will be documented and a summary provided to the lead agency and District monthly. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction vehicles surveyed as well as the dates of each survey. The District and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this section shall supersede other District, state or federal rules or regulations.

4. If at the time of construction, the District has adopted a regulation applicable to construction emissions, compliance with the regulation may completely or partially replace this mitigation. Consultation with the District before construction will be necessary to make this determination.

To mitigate any additional emissions that cannot be offset through implementation of measures above, the following shall apply:

Before the approval of improvement plans or the issuance of grading permits, the proponent will submit proof that the off-site air quality mitigation fee has been paid to SMAQMD, consistent with the version of the Sacramento Metropolitan Air Quality Management District Guide to Air Quality Assessment in effect at the time of plan submittal.

AQ-2.: Programmatic Level Operational Emissions

To reduce operational emissions related to development associated with the proposed project the following language shall be added into the Mather Field SPA:

1. Prior to the issuance of building or use permits or the approval of improvement plans or tenant improvements or the execution of lease agreements associated with development, redevelopment or reuse within the Mather Field Special Planning Area, property owners, developers or tenants shall

    a. be active participants in and financially support the 50 Corridor TMA or other similar transportation management association endorsed by SMAQMD;

b. demonstrate that proposed projects are consistent with the Mather Field Transportation Systems Management Plan to the satisfaction of SMAQMD; and

c. demonstrate that proposed projects are in compliance with the Mather Field Air Quality Plan to the satisfaction of SMAQMD or other Air Quality Mitigation Plan deemed adequate by SMAQMD.

4. All new tenant lease agreements or agreements for sale of on-site buildings or land within the Mather Field Special Planning Area shall state that tenants/operators are required to adhere to the Mather Field Transportation Systems Management Plan to the satisfaction of SMAQMD and the Mather Field Air Quality Plan or other Air Quality Mitigation Plan deemed adequate by SMAQMD.

5. An annual report shall be submitted to the Environmental Coordinator and to SMAQMD detailing the actions taken that year to comply with the Mather Field Transportation Systems Management Plan and appropriate Air Quality Mitigation Plan. The report shall be due by October 1 each year, and shall cover the prior fiscal year. The requirement to submit a report to the Environmental Coordinator may be terminated by the Environmental Coordinator once the mitigation is completed, or after three concurrent reporting years demonstrate full compliance, to the satisfaction of the Environmental Coordinator. The requirement to submit an annual report to SMAQMD shall continue in perpetuity.

AQ: PROJECT LEVEL CONSTRUCTION EMISSIONS

1. The project applicant shall provide a plan for approval by the lead agency and the District, demonstrating that the heavy-duty (50 horsepower [hp] or more) off-road vehicles to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project-wide fleet average of 20 percent NO_X reduction and 45 percent particulate reduction compared to the most recent California Air Resources Board (CARB) fleet average. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. The District's Construction Mitigation Calculator can be used to identify an equipment fleet that achieves this reduction.

2. The project representative shall submit to the lead agency and District a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during any portion of the construction project. The inventory shall include the horsepower rating, engine model year, and projected hours of use for each piece of equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs. At least 48 hours before the use of subject heavy-duty off-road equipment, the project representative shall

provide the District with the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman. The District's Model Equipment List can be used to submit this information.

3. The project shall ensure that emissions from all off-road diesel-powered equipment used on the project site do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately. Non-compliant equipment will be documented and a summary provided to the lead agency and District monthly. A visual survey of all in-operation equipment shall be made at least weekly, and a monthly summary of the visual survey results shall be submitted throughout the duration of the project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey. The District and/or other officials may conduct periodic site inspections to determine compliance. Nothing in this section shall supersede other District, state or federal rules or regulations.

4. If at the time of construction, the District has adopted a regulation applicable to construction emissions, compliance with the regulation may completely or partially replace this mitigation. Consultation with the District before construction will be necessary to make this determination.

To mitigate any additional emissions that cannot be offset through implementation of measures above, the following shall apply:

- Prior to the approval of improvement plans or the issuance of grading permits, the proponent will submit proof that the off-site air quality mitigation fee has been paid to SMAQMD, consistent with the version of the Sacramento Metropolitan Air Quality Management District Guide to Air Quality Assessment in effect at the time of plan submittal.

MATHER SOUTH PROJECT IMPACTS DETERMINATION

IMPACT: CONSTRUCTION EMISSIONS OF CRITERIA AIR POLLUTANTS AND PRECURSORS (NO_X, ROG, PM_{10}, AND $PM_{2.5}$)

Construction emissions are described as "short-term" or temporary in duration. The Mather South Project construction is anticipated to occur for an extended period of approximately 14 years and individual construction projects would occur intermittently throughout the entire period. Construction-related activities would result in project-generated emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ (a subset of PM_{10}) from site preparation (e.g., excavation, clearing), off-road equipment, material delivery, and worker commute trips, and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings). Fugitive dust emissions of PM_{10} and $PM_{2.5}$ are associated primarily with site preparation and vary as a function of soil silt

content, soil moisture, wind speed, acreage of disturbance, and vehicle miles traveled on and off the site. Emissions of ozone precursors, ROG and NO_X, are associated primarily with construction equipment and on-road mobile exhaust. Paving and the application of architectural coatings results in off-gas emissions of ROG. PM_{10} and $PM_{2.5}$ are also contained in vehicle exhaust.

Typical construction activities would require all-terrain forks, fork lifts, cranes, pick-up and fuel trucks, compressors, loaders, backhoes, excavators, dozers, scrapers, pavement compactors, welders, concrete pumps and concrete trucks, and off-road haul trucks, as well as other diesel-fueled equipment as necessary.

The project would require additional offsite improvements that would result in construction activities that have not been accounted for in the air quality modeling for the project as described in Table AQ-4 because they would occur as mitigation for traffic impacts and as separate future projects, and would require additional environmental analysis. However, the operational aspects including project traffic have been evaluated in this EIR. Segments of roadway along Grant Line Road, Jackson Road, Sunrise Boulevard, and Zinfandel Drive would be widened to accommodate additional project-related traffic. Additionally, intersections within the traffic study area would be improved from two-way stops to either roundabouts or signalized controls. In some cases, lanes would be reconfigured to provide an additional turn lane. In the case of freeway capacity issues, an electronic traffic management system would be implemented which may result in future improvements to carrying capacity of parallel local facilities. Chapter 17, Traffic and Circulation, provides additional detail regarding these improvements.

Implementation of traffic mitigation measures may result in environmental impacts because of construction activities and ground-disturbance, specifically including resource areas such as air quality, biological resources, cultural resources, and noise. Where mitigation and impacts are internal to the Plan Area, impacts are evaluated throughout the EIR. In the case of offsite impacts related to traffic improvements such as widening roads, installing signals and roundabouts, or reconfiguring lanes, additional subsequent environmental review would occur, and mitigation similar to that recommended for the project would likely be implemented to reduce impacts. All feasible mitigation would be required to be implemented consistent with state and federal requirements, as well as can be found in the County's General Plan, Grading Ordinance, Erosion and Sediment Control Plan, and any other relevant County regulation for the minimization of environmental impacts.

Construction of the Mather South Project would occur in four phases of development over the buildout period. Although exact construction schedules and activities for individual developments within the Plan Area are not known at this time, construction among each of the four phases was assumed be evenly spread by year. Conservative assumptions were used and individual construction phases (e.g., site preparation, grading, building construction) were overlapped to account for construction activities occurring simultaneously at different locations throughout the entire site in anticipation of periods with above-average construction activities. As such, reported emissions represent a conservative estimate of maximum daily emissions for each year of

construction. Ultimately, construction phasing and activities would be driven by prevailing market conditions in any given year.

It is also important to note that as construction continues into the future, equipment exhaust emission rates would decrease as newer, more emission-efficient construction equipment replaces older, less efficient equipment. For assumptions and modeling inputs, refer to Appendix AQ-GHG-1.

Table AQ-4 summarizes the modeled maximum daily emissions from the construction activity, whereby maximum daily emissions are estimated by overlapping individual construction phases (i.e., building construction, paving, and architectural coating) for each year of construction. Annual emissions for PM_{10} and $PM_{2.5}$ for each modeled year of construction were also estimated.

As shown in Table AQ-4, annual emissions of PM_{10} and $PM_{2.5}$ would not exceed the respective thresholds, however, maximum daily emissions of NO_X could potentially exceed applicable thresholds throughout the estimated buildout period. Therefore, construction emissions could contribute to the existing nonattainment condition in the SVAB with respect to the CAAQS and NAAQS for ozone. This would be a potentially significant impact.

If modeled construction-generated emissions of NO_X are not reduced to a level below SMAQMD's thresholds of significance by the application of the Enhanced Exhaust Control Practices, then the project developer must pay a mitigation fee into SMAQMD's off-site mitigation program. By paying the appropriate off-site mitigation fee, construction-generated emissions of NO_X are reduced to a less-than-significant level. The fee calculation to offset daily NO_X emissions is based on the SMAQMD-determined cost to reduce one ton of NO_X (currently $30,000 per ton but subject to change in future years). Based on the current fee and modeled emissions exceeding the threshold for NOx in years 2019, 2023, and 2026 as shown in Table AQ-4, the project applicant, or its designee, would be required to pay an off-site mitigation fee to SMAQMD in the amount of $135,870 and an administrative fee in the amount of $6,794 to SMAQMD to reduce the project impacts from construction NOX emissions to a less than significant level. See Mitigation Measure AQ-1 below.

Table AQ-4: Summary of Maximum Daily Emissions of Criteria Air Pollutants and Precursors Associated with Project Construction

Construction Year	ROG lb/day	NO_X lb/day	PM_{10} lb/day (fugitive/ exhaust/total)	PM_{10} tons/year (fugitive/ exhaust/total)	$PM_{2.5}$ lb/day (fugitive/ exhaust/total)	$PM_{2.5}$ tons/year (fugitive/ exhaust/total)
Phase 1						
2019	18	157	45/6/52	2/<1/2	17/6/23	<1/<1/1
2020	8	52	11/1/12	1/<1/2	3/1/4	<1/<1/1
2021	7	47	11/1/12	1/<1/2	3/1/4	<1/<1/1

Construction Year	ROG lb/day	NO_X lb/day	PM_{10} lb/day (fugitive/ exhaust/total)	PM_{10} tons/year (fugitive/ exhaust/total)	$PM_{2.5}$ lb/day (fugitive/ exhaust/total)	$PM_{2.5}$ tons/year (fugitive/ exhaust/total)
2022	40	45	13/1/14	1/<1/1	3/1/4	<1/<1/<1
Phase 2						
2023	10	89	44/3/48	1/<1/1	17/3/20	<1/<1/1
2024	4	26	6/1/7	1/<1/1	2/1/2	<1/<1/<1
2025	40	26	7/1/8	1/<1/1	2/1/3	<1/<1/<1
Phase 3						
2026	11	91	51/3/54	2/<1/2	18/3/21	1/<1/1
2027	6	38	13/1/14	2/<1/2	4/1/4	<1/<1/<1
2028	40	38	15/1/16	1/<1/1	4/1/5	<1/<1/<1
Phase 4						
2029	9	81	43/3/46	2/<1/2	17/3/19	1/<1/1
2030	4	23	9/<1/9	1/<1/1	2/<1/3	<1/<1/<1
2031	3	23	9/<1/9	1/<1/1	2/<1/3	<1/<1/<1
2032	34	24	10/<1/10	1/<1/1	3/<1/3	<1/<1/<1
SMAQMD Threshold of Significance	None	85	-/-/80	14.6	-/-/82	15
Exceeds Threshold?	NA	Yes	No	No	No	No

Notes: ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; lb/day = pounds per day; SMAQMD = Sacramento Metropolitan Air Quality Management District.

Maximum daily emissions represent overlapping construction phases. See Appendix AQ-GHG-1 for details.

Source: Modeled by Ascent Environmental in 2018

MITIGATION MEASURES

The following mitigation measure implements the Mather Field Project EIR Mitigation Measure AQ-3 above.

AQ-1. Construction exhaust and fugitive dust emissions controls. All individual public and private subsequent projects within the project area shall implement SMAQMD's Basic Construction Emission Control Practices and SMAQMD's Enhanced Exhaust Control Practices during any construction or ground disturbance activities to reduce construction-related fugitive dust emissions, diesel PM, and NO_X emissions. These measures are included below.

BASIC CONSTRUCTION ~~FUGITIVE DUST~~ EMISSIONS CONTROL PRACTICES (BEST MANAGEMENT PRACTICES)

The following Basic Construction Emissions Control Practices are considered feasible for controlling fugitive dust from a construction site. The practices also

serve as best management practices (BMPs), allowing the use of the non-zero particulate matter significance thresholds.

Control of fugitive dust is required by District Rule 403 and enforced by District staff.

- Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least two feet of free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.
- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).
- All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

The following practices describe exhaust emission control from diesel powered fleets working at a construction site. California regulations limit idling from both on-road and off-road diesel powered equipment. The California Air Resources Board enforces the idling limitations.

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [required by California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.

Although not required by local or state regulation, many construction companies have equipment inspection and maintenance programs to ensure work and fuel efficiencies.

- Maintain all construction equipment ~~is~~ in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.

Lead agencies may add these emission control practices as Conditions of Approval (COA) or include in a Mitigation Monitoring and Reporting Program (MMRP).

ENHANCED ON-SITE EXHAUST CONTROL PRACTICES

- ~~The project developer shall submit to the County and SMAQMD a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more housing during any portion of the construction project before any grading~~

~~activities. The inventory shall include the horsepower rating, engine model year, and projected hours of use for each piece of equipment. The project developer shall provide the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman. The information shall be submitted at least 4 business days before the use of subject heavy-duty off-road equipment. The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs.~~

- ~~Before any grading activities, the project developer shall provide a plan for approval by the County and SMAQMD demonstrating that the heavy-duty off-road vehicles (50 horsepower or more) to be used in the construction project, including owned, leased, and subcontractor vehicles, will achieve a project-wide fleet-average of 20~~**10** ~~percent NO_x reduction (depending on available technology and engine Tier) and 45 percent particulate reduction compared to the most recent CARB fleet average. This plan shall be submitted in conjunction with the equipment inventory. Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, and/or other options as they become available. If achievement of the aforementioned reductions over the statewide average are deemed infeasible by the County, SMAQMD, or construction contractor, the applicant shall ensure the construction fleet meets the lowest fleetwide emissions average possible, through the use of all available on-site emissions reduction measures (e.g., highest tier engines, emission control devices, cleaner burning fuel).~~

- ~~The project developer shall ensure that emissions from all off-road diesel-powered equipment used on the project do not exceed 40 percent opacity for more than three minutes in any one hour. Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately. Non-compliant equipment will be documented, and a summary provided to the County and SMAQMD monthly. A visual survey of all in-operation equipment shall be made at least weekly. A monthly summary of the visual survey shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey.~~

1. **The project applicant, or its designee, shall provide a plan for approval by the Sac Metro Air District that demonstrates the heavy-duty off-road vehicles (50 horsepower or more) to be used 8 hours or more during the construction project will achieve a project wide fleet-average 10% NOX reduction compared to the most recent California Air Resources Board (CARB) fleet average. The plan shall have two components: an initial report submitted before construction and a final report submitted at the completion.**

    - **Submit the initial report at least four (4) business days prior to construction activity using the Sac Metro Air District's Construction**

Mitigation Tool (http://www.airquality.org/businesses/ceqa-land-use-planning/mitigation).

- **Provide project information and construction company information.**
- **Include the equipment type, horsepower rating, engine model year, projected hours of use, and the CARB equipment identification number for each piece of equipment in the plan. Incorporate all owned, leased and subcontracted equipment to be used.**
- **Submit the final report at the end of the job, phase, or calendar year, as pre-arranged with Sac Metro Air District staff and documented in the approval letter, to demonstrate continued project compliance.**

2. The Sac Metro Air District may conduct periodic site inspections to determine compliance. Nothing in this mitigation shall supersede other air district, state or federal rules or regulations.

3. This mitigation will sunset on January 1, 2028, when full implementation of the CARB In-Use Off-Road Regulation is expected.

OFF-SITE CONSTRUCTION MITIGATION FEES

- ~~If modeled construction-generated emissions of NO_X are not reduced to a level below SMAQMD's thresholds of significance by the application of the Enhanced Exhaust Control Practices, then the project developer must pay a mitigation fee into SMAQMD's off-site mitigation program. By paying the appropriate off-site mitigation fee, construction-generated emissions of NO_X are reduced to a less-than-significant level. The fee calculation to offset daily NO_X emissions is based on the SMAQMD-determined cost to reduce one ton of NO_X (currently $30,000 per ton but subject to change in future years).~~
    - The fee calculation shall be based on the sum of emissions associated with all individual construction activities or phases occurring within the project area boundary at any one time during the buildout period. Payment schedules shall be negotiated between SMAQMD and the developer and based on finalized construction parameters before the issuance of any grading permit or groundbreaking activities. If, for instance, the construction contractor of one builder is constructing one village while the construction contractor of another builder is constructing another village, the developer is responsible for determining the proportion of necessary combined offset fees that each builder must contribute. Once initial construction activities are finalized by the developer, quantification of construction-related emissions shall be verified. As each individual construction phase is finalized throughout the duration of the project buildout, the mitigation fee shall be calculated based on current information, available construction equipment, and proposed construction activities. As construction activities occur over the buildout period, the developer shall work with SMAQMD to continually update mitigation fees based on actual on-the-ground emissions. The final mitigation fees shall be

based on contractor equipment inventories provided by the developer to SMAQMD and shall reconcile any fee discrepancies due to schedule adjustments, and increased or decreased equipment inventories. Equipment inventories and NO_X emission estimates for subsequent construction phases shall be coordinated with SMAQMD, and the off-site mitigation fee measure shall be assessed to any construction phase that would result in an exceedance of SMAQMD's mass emission threshold for NO_X.

1. **The environmental document identified that construction-generated emissions of nitrogen oxide (NO_X) will exceed the Sac Metro Air District's threshold of significance**

   The project applicant, or its designee, shall pay a mitigation fee and an administrative fee to the Sac Metro Air District to reduce the project impacts from construction NO_X emissions to a less than significant level.

2. **The project applicant, or its designee, shall pay the mitigation and administrative fees in full prior to the lead agency issuing a grading permit that would allow activity that would exceed Sac Metro Air District's threshold.**

3. **An alternative payment plan may be negotiated by the project applicant, or its designee, based on the timing of construction phases that are expected to exceed the Sac Metro Air District's threshold of significance. Any alternative payment plan must be acceptable to the Sac Metro Air District and agreed upon in writing prior to issuance of a grading permit by the lead agency.**

4. **In coordination with the lead agency and the Sac Metro Air District, the project applicant, or its designee, may reanalyze construction NO_X emissions from the project prior to starting construction to account for any changes to CARB's In-Use Off-Road Diesel Equipment Regulation and/or statewide equipment emissions factors that form the baseline assumptions in the Sac Metro Air District's construction mitigation program, or any changes to the assumptions in the construction analysis in the EIR.**

   a. **The analysis must be conducted using Sac Metro Air District approved emissions model(s) and the fee rates published at the time of reanalysis.**

   b. **The analysis may include on-site measures to reduce construction emissions if deemed feasible by the lead agency and project applicant. All on-site measures assumed in the analysis must be included in the construction contracts and be enforceable by the lead agency.**

Proposed dust control measures in Mitigation Measure AQ-1 would result in a maximum of 75 percent reduction of fugitive PM_{10} dust. Given that the PM_{10} emissions are currently under the recommended threshold, it is not anticipated that with the implementation of the dust control measures the fugitive PM_{10} emissions would exceed the 80 lb/day threshold, regardless of simultaneous construction phases occurring. Further, inclusion of SMAQMD's dust control measures provided in the above mitigation

measure would minimize dust emissions such that the project would not contribute substantially to the nonattainment status of the SVAB.

Implementation of exhaust control measures in Mitigation Measure AQ-1 would reduce NO_X emissions from off-road equipment by ~~2~~**1**0 percent (or higher depending on available technology); however, assuming a ~~2~~**1**0 percent reduction in NO_X, maximum daily emissions for construction occurring in 2019 would still exceed SMAQMD's recommended threshold. Thus, the required mitigation fee would be assessed and used to offset these emissions by providing funding for SMAQMD to implement emission reduction projects in the SVAB, such as installing newer engines on off-road equipment or installing EPA-certified woodstoves in the place of non-certified woodstoves in residential units. Thus, construction-generated NO_X levels would be reduced to a **less-than-significant** level.

IMPACT: LONG-TERM OPERATIONAL EMISSIONS OF NO_X, ROG, PM_{10}, AND $PM_{2.5}$

Development of the Mather South Project would result in the generation of long-term operational emissions of ROG, NO_X, and particulate matter (PM_{10} and $PM_{2.5}$) because of mobile, stationary, and area-wide sources. Mobile-source emissions of criteria air pollutants and precursors would result from vehicle trips generated by residents, users of the parks, students at the schools, employee commute trips, and other associated vehicle trips (e.g., delivery of supplies, maintenance vehicles for commercial and retail land uses). Stationary and area-wide sources would include the combustion of natural gas for space and water heating (i.e., energy use), the use of landscaping equipment and other small equipment, the periodic application of architectural coatings, and ROG from the use of consumer products.

Table AQ-5 summarizes the maximum daily operation-related emissions of criteria air pollutants during the winter and summer seasons at full buildout. Table AQ-6 shows the annual operation-related emissions of criteria air pollutants at full buildout. This is consistent with the AQMP prepared for the project, which calculates emission reductions from mitigation in tons per year (tons/year). Emissions were calculated based on proposed land uses and default trip rates in CalEEMod. As shown in Table AQ-5, operation-related activities would result in project-generated daily emissions of NO_X, PM_{10}, and $PM_{2.5}$ that exceed the SMAQMD-recommended thresholds of significance. Because the project would exceed operational thresholds of significance, an AQMP has been prepared to reduce project operational emissions and is provided in Appendix AQ-2.

Thus, NO_X, PM_{10}, and $PM_{2.5}$ emissions generated under full buildout of the project would conflict with long-term ozone planning efforts and/or contribute substantially to a net increase in concentrations of ozone for which Sacramento County is in nonattainment. This would be a potentially significant impact.

Table AQ-5: Summary of Maximum Daily (Unmitigated) Operational Emissions of Criteria Air Pollutants and Precursors at Full Buildout (2032)

Source Type	Maximum Daily Emissions (lb/day)

	ROG	NO_X	PM_{10}	$PM_{2.5}$
Summer				
Area[1]	164	3	2	2
Energy[2]	2	13	1	1
Mobile	64	238	345	93
Total Summer Daily Emissions	229	255	347	96
Winter				
Area	164	3	2	2
Energy	2	13	1	1
Mobile	47	251	345	93
Total Winter Daily Emissions	213	268	347	96
SMAQMD Threshold of Significance[3]	65	65	80	82
Exceeds Threshold?	Yes	Yes	Yes	Yes

Notes: lb/day = pounds per day; ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter.

[1] Area-source emissions include emissions from landscaping, application of architectural coatings, and consumer products, and are estimated based on default model settings. It was assumed that none of the residential units would be equipped with a fireplace.

[2] Energy emissions include off-site emissions associated with natural gas consumption for space heating/cooling, and appliance use.

[3] Mass emission significance criteria apply to the sum of area, energy, and mobile sources.

Source: Modeling conducted by Ascent Environmental in 2019

Table AQ-6: Summary of Annual (Unmitigated) Operational Emissions of Criteria Air Pollutants and Precursors at Full Buildout (2032)

Source Type	Annual Emissions (tons/year)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Area[1]	29.4	0.4	0.2	0.2
Energy[2]	0.3	2.4	0.2	0.2
Mobile	8.2	40.0	54.5	14.7
Total Annual Emissions	37.9	42.7	54.7	15.1
SMAQMD Threshold of Significance[3,4]	NA	NA	80	82
Exceeds Threshold?	NA	NA	No	No

Notes: tons/year = tons per year; ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; NA = not applicable.

[1] Area-source emissions include emissions from landscaping, application of architectural coatings, and consumer products, and are estimated based on default model settings. It was assumed that none of the residential units would be equipped with a fireplace.

[2] Energy emissions include off-site emissions associated with natural gas consumption for space heating/cooling, and appliance use.

[3] Mass emission significance criteria apply to the sum of area, energy, and mobile sources.

[4] SMAQMD has adopted tons/year operational thresholds for only PM_{10} and $PM_{2.5}$.

Source Type	Annual Emissions (tons/year)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Source: Modeling conducted by Ascent Environmental in 2019				

MITIGATION MEASURES

The following mitigation measure implements the Mather Field Project EIR Mitigation Measure AQ-2 above.

AQ-2. Implement provisions of the Air Quality Mitigation Plan (AQMP) to reduce operational emissions. Implementation of the following measures requires compliance with the project's AQMP, which would reduce the project's mobile-source operational ozone precursors by 15 percent in comparison to the unmitigated project.

The Mather South Community Master Plan shall include the following reduction measures, which are detailed within the AQMP (Appendix AQ-2 of the EIR), as conditions of approval:

- Incorporate traffic calming measures.
- Design project roads to reduce motor vehicle speed through the use of on street parking, planter strips, rumble strips, and other available methods.
- Reduce speeds at project intersections by including marked intersections, count-down signal timers, median islands, curb extensions, traffic circles, and other available methods.
- Implement neighborhood electric vehicle (NEV) network.
- Create a local "light" vehicle network with necessary infrastructure such as NEV parking, charging facilities, striping, signage, and educational tools.

AQ-3. Implement Mitigation Measure CC-2. The project developer shall incorporate the following mitigation measures into the project to reduce operational emissions of criteria air pollutants and precursors to the extent feasible.

TRANSPORTATION

- For each single-family residential unit, install a listed raceway, associated overcurrent protective device and the balance of a dedicated 208/240-volt branch circuit at 40 amperes (amp) minimum. The raceway shall not be less than the trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or unit subpanel and shall terminate into a listed cabinet, box, or other enclosure near the proposed location of an electric vehicle (EV) charger. Raceways are required to be continuous at enclosed, inaccessible, or concealed areas and spaces. The service panel and/or subpanel shall provide capacity for a 40-amp minimum dedicated branch circuit.

All electrical circuit components and Electric Vehicle Service Equipment (EVSE), including a receptacle or box with a blank cover, related to Section A4.106.8 of the California Green Building Standards Code shall be installed in accordance with the California Electrical Code.

- Multifamily residential buildings shall design at least 10 percent of parking spaces to include EVSE, or a minimum of two spaces to be installed with EVSE for buildings with 2-10 parking spaces. EVSE includes EV charging equipment for each required space connected to a 208/240-volt, 40-amp panel with conduit, wiring, receptacle, and overprotection devices.
- Nonresidential buildings shall design at least 10 percent of parking spaces to include EVSE, or a minimum of two spaces to be installed with EVSE for buildings with 2-10 parking spaces. EVSE includes EV charging equipment for each required space connected to a 208/240-volt, 40-amp panel with conduit, wiring, receptacle, and overprotection devices.
- Nonresidential land uses with 20 or more on-site parking spaces shall dedicate preferential parking spaces to vehicles with more than one occupant and ZEVs (including battery electric vehicles and hydrogen fuel cell vehicles). The number of dedicated spaces should be no less than two spaces or 5 percent of the total parking spaces on the individual project site, whichever is greater. These dedicated spaces shall be in preferential locations such as near the main entrances to the buildings served by the parking lot and/or under the shade of structures or trees. These spaces shall be clearly marked with signs and pavement markings. This measure shall not be implemented in a way that prevents compliance with requirements in the California Vehicle Code regarding parking spaces for disabled persons or disabled veterans.

BUILDING ENERGY

- All project buildings shall be designed to include Cool Roofs in accordance with the requirements set forth in Tier 2 of the California Green Building Energy Code, Sections A4.106.5 and A5.106.11.2.
- All project buildings shall comply with requirements for water efficiency and conservation as described in the California Green Building Standards Code, Divisions 4.3 and 5.3.
- Multiple electric receptacles shall be included on the exterior of all nonresidential buildings and accessible for purposes of charging or powering electric landscaping equipment and providing an alternative to using fossil-fuel-powered generators. The electrical receptacle shall have an electric potential of 100 volts. There should be a minimum of one electrical receptacle on each side of the building and one receptacle every 100 linear feet around the perimeter of the building.
- Ensure that all appliances and fixtures installed in buildings developed under the project are Energy Star®-certified if an Energy Star®-certified model of the appliance is available. Types of Energy Star®-certified appliances include boilers, ceiling fans, central and room air conditioners, clothes washers, compact

fluorescent light bulbs, computer monitors, copiers, consumer electronics, dehumidifiers, dishwashers, external power adapters, furnaces, geothermal heat pumps, programmable thermostats, refrigerators and freezers, residential light fixtures, room air cleaners, transformers, televisions, vending machines, ventilating fans, and windows (EPA 2018). If EPA's Energy Star® program is discontinued and not replaced with a comparable certification program before appliances and fixtures are selected, then similar measure which exceed the 2016 California Green Building Standards Code may be used.

- Require all space and water heating to be solar- or electric-powered**.**
- **All cooking appliances shall be solar- or electric-powered. Natural gas usage for any household appliance shall be prohibited.** ~~and only allow natural gas usage for cooking appliances in residences, as feasible.~~
- Provide incentives to future residents to purchase electric vehicles.
- Install high-efficiency lighting (i.e., light emitting diodes) in all streetlights, security lighting, and all other exterior lighting applications.
- Create a local composting program for residents to achieve the statewide 75 percent waste diversion target.

Implementation of Mitigation Measure AQ-2 requires the project to comply with all provisions included in the AQMP. This mitigation would be consistent with the provisions of General Plan Policy AQ-4. Achievement of the 15 percent reduction of ozone precursors from mobile-source emissions would be met through the provisions of the AQMP. Mitigated emissions are shown in tons/year of each pollutant, as recommended by SMAQMD. Considering all on-site mitigation measures, the Mather South Project would achieve up to 45 percent reduction in operational NO_X and 10 percent reduction in operational ROG emissions over the unmitigated project. A summary of the mitigated emissions is included below in Table AQ-7.

Table AQ-7: Annual (Mitigated) Operational Emissions of Criteria Air Pollutants and Precursors at Full Buildout (2032)

Source Type	Annual Emissions (tons/year)			
	ROG	**NO_X**	**PM_{10}**	**$PM_{2.5}$**
Area[1]	29.4	0.4	0.2	0.2
Energy[2]	0.3	2.4	0.2	0.2
Mobile	4.5	21.7	22.4	6.1
On-site Reduction	0.3	1.4	3.5	0.7
Total Reductions	3.7	18.2	32	8.7
Total Annual Emissions	34.2	24.5	22.8	6.5
SMAQMD Threshold of Significance[3,4]	NA	NA	80	82
Exceeds Threshold?	NA	NA	No	No

Source Type	Annual Emissions (tons/year)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Notes: tons/year = tons per year; ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; NA = not applicable.				
[1] Area-source emissions include emissions from landscaping, application of architectural coatings, and consumer products, and are estimated based on default model settings. It was assumed that none of the residential units would be equipped with a fireplace.				
[2] Energy emissions include off-site emissions associated with natural gas consumption for space heating/cooling, and appliance use.				
[3] Mass emission significance criteria apply to the sum of area, energy, and mobile sources.				
[4] SMAQMD has adopted tons/year operational thresholds for only PM_{10} and $PM_{2.5}$.				
Source: Modeling conducted by Ascent Environmental in 2019				

Mitigation Measure AQ-3 represents all available and feasible mitigation that the project could implement. Because the SMAQMD-adopted operational thresholds for ROG and NO_X are daily mass emission thresholds, the tons/year emission reductions from the AQMP have been converted into lb/day in Table AQ-8 below to compare emissions to the adopted thresholds. The tons/year emissions were converted by multiplying by 2,000 pounds per ton and then dividing by 365 days per year. However, even with a 15 percent reduction of ozone precursors from mobile-source emissions, the project's total ROG and NO_X emissions from area-sources, building energy, and mobile-sources would continue to exceed SMAQMD thresholds of significance, as shown below in Table AQ-8.

Table AQ-8: Maximum Daily (Mitigated) Operational Emissions of Criteria Air Pollutants and Precursors at Full Buildout (2032)

Source Type	Maximum Daily Emissions (lb/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Maximum Daily Emissions	202	147	144	41
SMAQMD Threshold of Significance[1]	65	65	80	82
Exceeds Threshold?	Yes	Yes	Yes	No
Notes: lb/day = pounds per day; ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter; $PM_{2.5}$ = fine particulate matter; NA = not applicable.				
[1.] Mass emission significance criteria apply to the sum of area, energy, and mobile sources.				
Source: Modeling conducted by Ascent Environmental in 2019				

Thus, although the project may reduce operational emissions to the extent feasible, long-term emission reductions would not be reduced to a less-than-significant level into perpetuity. Project operations may contribute to the nonattainment status of the region and may conflict with the CAAQS and NAAQS. This would be a **significant and unavoidable** impact.

Impact: Mobile-source CO concentrations

Local mobile-source CO emissions near roadway intersections are a direct function of traffic volume, speed, and delay. Transport of CO is extremely limited because it disperses rapidly with distance from the source under normal meteorological conditions. However, under certain specific meteorological conditions, CO concentrations near roadways and/or intersections may reach unhealthy levels at nearby sensitive land uses, such as residential units, hospitals, schools, and childcare facilities. As a result, it is recommended that CO not be analyzed at the regional level, but at the local level.

Construction would occur over many years and therefore, traffic-related to construction activities would also be spread over the duration of construction activities. As such, construction-generated traffic is not anticipated to result in large peaks at any one time over the course of construction. This analysis focuses on operation-related traffic.

Project-generated traffic would be associated primarily with the operational phase. At complete buildout, the project would generate up to 29,134 daily trips including up to 2,715 trips during the a.m. peak hour and up to 2,640 trips during the p.m. peak hour.

SMAQMD provides a screening methodology to determine whether CO emissions generated by traffic at congested intersections have the potential to exceed, or contribute to an exceedance of, the 8-hour CAAQS of 9.0 µg/m^3 or the 1-hour CAAQS of 20.0 µg/m^3. The screening methodology has two tiers of screening criteria. If the first set is not met, then the second tier may be applied. It states that the following criteria must be met:

First-Tier

A project will result in a less-than-significant impact to air quality for local CO if:

- Traffic generated by the project will not result in deterioration of intersection level of service (LOS) to LOS E or F; and
- The project will not contribute additional traffic to an intersection that already operates at LOS of E or F.

Second-Tier

If all the following criteria are met, a project will result in a less-than-significant impact to air quality for local CO if:

- The project will not result in an affected intersection experiencing more than 31,600 vehicles per hour;
- The project will not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, or below-grade roadway; or other locations where horizontal or vertical mixing of air will be substantially limited; and
- The mix of vehicle types at the intersection is not anticipated to be substantially different from the County average (as identified by CalEEMod).

Based on the traffic study conducted (DKS 2018), the Mather South Project would result in the deterioration of LOS to area intersections from D to E, from E to F, and from A to F. This would include the following intersections: Woodring Drive and Zinfandel Drive, Happy Lane and Old Placerville Road, Eagles Nest Road and Jackson Road. Further, some intersections in the project vicinity (i.e., Intersection ID Numbers 7, 12, 14, 16, 18, 21, 33, 37, 38, 41, 42, 51, 52, 54, 70, 80, and 93 of the traffic study [DKS 2018]) already experience a LOS of E or F and would experience added traffic volume because of the project. Therefore, both conditions of the first tier of screening would occur so project traffic conditions are evaluated against SMAQMD's second tier of screening.

As described in the traffic study conducted for the project (DKS 2018), the Mather South Project would generate a maximum of 2,715 trips during the a.m. peak hour and up to 2,640 during the p.m. peak hour. The total daily trip generation of the project is 29,134, which is below the criteria for a single intersection. Therefore, none of the intersections would be anticipated to accommodate traffic volumes that would exceed 31,600 vehicles per hour, even assuming all trips occurred at the same intersection. Also, because of stricter vehicle emissions standards in newer cars, new technology, and increased fuel economy, CO emissions are expected to be substantially lower in future years than under existing conditions. Furthermore, the project would not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, below-grade roadway, or other location in which horizontal or vertical mixing of mobile-source CO emissions would be substantially limited. Thus, project-generated local mobile-source CO emissions would not result in or substantially contribute to concentrations that exceed the 1-hour or 8-hour ambient air quality standards for CO. As a result, this impact would be **less than significant**.

Impact: Exposure of sensitive receptors to TACs

The exposure of sensitive receptors to TAC emissions from project-generated construction and operational sources are discussed separately below. The TAC that is the focus of the analysis is diesel PM because it is known that diesel PM would be emitted during project construction and operation. Although other TACs exist (e.g., benzene, 1,3-butadiene, hexavalent chromium, formaldehyde, methylene chloride), they are primarily associated with industrial operations and the project would not include any industrial sources of other TACs.

Construction

Construction-related activities would result in temporary, intermittent emissions of diesel PM from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., demolition, clearing, grading); paving; application of architectural coatings; on-road truck travel; and other miscellaneous activities. For construction activity, diesel PM is the primary TAC of concern. On-road diesel-powered haul trucks traveling to and from the construction area to deliver materials and equipment are less of a concern because they would not stay on the site for long durations.

Particulate exhaust emissions from diesel-fueled engines (i.e., diesel PM) was identified as a TAC by CARB in 1998. The potential cancer risk from the inhalation of diesel PM,

as discussed below, outweighs the potential for all other health impacts (i.e., non-cancer chronic risk, short-term acute risk) and health impacts from other TACs (CARB 2003). With regards to exposure of diesel PM, the dose to which receptors are exposed is the primary factor used to determine health risk. Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher level of health risk for any exposed receptor. Thus, the risks estimated for an exposed individual are higher if a fixed exposure occurs over a longer period of time. According to Office of Environmental Health Hazard Assessment, Health Risk Assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70- or 30-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the proposed project (OEHHA 2012:11-3). Based on the emission modeling conducted and presented in Table AQ-4, above, maximum daily emissions of exhaust $PM_{2.5}$, considered a surrogate for diesel PM, would not exceed 1 lb/day during the most intense season of construction activity. Furthermore, even during the most intense year of construction, emissions of diesel PM would be generated from different locations in the plan area rather than a single location because different types of construction activities (e.g., site preparation, building construction) would not occur at the same place at the same time. Consequently, it is important to consider that the use of off-road heavy-duty diesel equipment would be limited to the construction phase of up to 16 years. However, each individual construction activity within this 16-year period would be much shorter. As construction progresses, activity intensity and duration would vary throughout the site. As such, no single existing or future receptor (i.e., as part of the project) would be exposed to construction-related emissions of diesel PM for extended periods of time.

Additionally, as described above, and in Chapter 17 Traffic and Circulation, offsite improvements to segments of roadway along Grant Line Road, Jackson Road, Sunrise Boulevard, and Zinfandel Drive would be widened to accommodate additional project-related traffic. Additionally, intersections within the traffic study area would be improved from two-way stops to either roundabouts or signalized controls. In some cases, lanes would be reconfigured to provide an additional turn lane. In the case of freeway capacity issues, an electronic traffic management system would be implemented which may result in future improvements to carrying capacity of parallel local facilities. As these improvements would be required as part of a mitigation strategy for development of the project, they would occur as future, and independent projects which would be evaluated for environmental impacts at the time of permitting and are not included in the evaluation of project TACs in this section. However, operational traffic impacts evaluated in this EIR do include an evaluation of a post-project traffic operational condition.

As the Mather South Project is developed, construction from other future planned developments in Sacramento County could potentially overlap with the construction activities of the project, potentially exposing newly sited sensitive receptors within the project area. These developments include the NewBridge Master Plan, located to the south of the project, and the Jackson Township Master Plan, located to the southwest of the project. However, any potential construction activity associated with these other

planned future developments would be located over 2,000 feet from the site of any future receptors constructed as part of the project and thus would not be exposed to excessive levels of TACs associated with construction.

Regarding existing off-site receptors, residences are in Rancho Cordova, approximately 500 feet to the east of the project site. Studies show that diesel PM is highly dispersive. For instance, concentrations of diesel PM generated by freeway traffic decreased by approximately 70 percent at 500 feet from the source (Zhu et. al 2002), and receptors much be near emission sources to result in the possibility of exposure to concentrations of concern and must be near for a long duration of time. Given the locations of existing receptors relative to potential diesel PM emission sources, and the temporary and intermittent nature of construction activities within specific locations in the project area (i.e., construction does not occur year round and does not occur in any one part of the plan area during the 14-year buildout period), the dose of any exposure to diesel PM of any one receptor would be very limited. Moreover, implementation of Mitigation Measure AQ-1 would reduce particulate matter emissions from construction equipment exhaust by 45 percent from the statewide fleet average, which would further reduce diesel PM emissions.

Therefore, considering the relatively low mass of diesel PM emissions that would be generated by construction, the relatively short duration of diesel PM-emitting construction activity at any one location of the plan area, the distance to the nearest off-site sensitive receptors, and the highly dispersive properties of diesel PM, construction-related TAC emissions would not expose sensitive receptors to an incremental increase in cancer risk greater than 10 in 1 million or a hazard index greater than 1.0.

LONG-TERM OPERATION

Operation of some land uses developed under the Mather South Project would result in new sources of TACs associated with new vehicular trips on existing and new roadways, as well as new sources of diesel PM associated with commercial loading docks visited by diesel-powered delivery trucks and backup diesel generators. New TAC sources could expose existing and future sensitive receptors to TAC emissions. The project would also locate new sensitive land uses in proximity to existing TAC sources associated with surrounding roadways.

In accordance with available guidance from SMAQMD and CARB, freeways or urban roadways experiencing 100,000 or more vehicles per day could expose sensitive receptors to adverse health risks. Based on the traffic study conducted, the project would result in a maximum of 29,134 daily trips (i.e., new TAC sources) traveling through 142 different intersections and multiple roadways (DKS 2018:65,69-73).

Further, existing traffic volumes along nearby roadways range from approximately 186 to 65,242 vehicles per day (DKS 2018:31-35). Project-generated traffic would add to the existing traffic volumes of these roads. The largest increase in traffic volume would occur on Zinfandel Drive, with an increase of 11,265 to a total traffic volume of 18,860 vehicles per day on the three segments between International Road and Douglas Road (DKS 2018:73). These traffic volumes do not exceed SMAQMD's or CARB's guidance

of 100,000 vehicle per day, thus new and existing sensitive receptors would not be exposed to increased health risk.

In addition to new mobile sources on local roadways, the project would include the development of approximately 71 acres of retail, commercial and educational land uses. These land uses may include loading docks for delivery trucks, resulting diesel PM exhaust emissions from idling trucks that could expose existing or new sensitive receptors to TACs, depending on the location of these new land uses and proximity to off-site or new on-site receptors.

In addition to existing industrial land uses, the project would locate new residences as close as 500 feet from the west side of Sunset Boulevard. Traffic on Sunset Boulevard is a primary source of TACs in the project vicinity, with traffic volumes of approximately 54,500 vehicles per day (DKS 2018:34). Guidance from SMAQMD's *Recommended Protocol for Evaluating the Location of Sensitive Land Uses Adjacent to Major Roadways* and CARB's *Air Quality and Land Use Handbook* recommends that new sensitive receptors should not be placed within 500 feet of freeways or urban streets with traffic volumes that exceed 100,000 vehicles per day (CARB 2005). Traffic volumes of Sunset Boulevard do not exceed 100,000 vehicles per day, thus new sensitive receptors because of the project would not be exposed to excessive health risk from Sunset Boulevard. No other roadways in the project vicinity experience volumes that exceed 100,000 vehicles per day.

In summary, project-related construction activities would not expose nearby sensitive receptors to incremental increases in cancer, chronic, or acute risk that exceeds applicable thresholds. However, the placement of new sources of diesel PM associated with commercial delivery trucks could expose new or existing sensitive receptors to increased TAC emissions. This impact would be potentially significant.

MITIGATION MEASURES

AQ-4. Incorporation of design features for retail center to address TACs. To reduce exposure of existing or future receptors to diesel PM exhaust emissions at commercial and educational loading docks, the following design measures shall be incorporated into the MSCMP.

- Proposed commercial and educational, land uses that have the potential to emit TACs or host TAC-generating activity (e.g., loading docks) shall be located as far away from existing and proposed on-site sensitive receptors as possible such that they do not expose sensitive receptors to TAC emissions that exceed an incremental increase of 10 in 1 million for the cancer risk and/or a noncarcinogenic Hazard Index of 1.0.
- Loading dock design may incorporate the use of buildings or walls to shield commercial activity from nearby residences or other sensitive land uses.
- Signs shall be posted at all loading docks and truck loading areas which indicate that diesel-powered delivery trucks must be shut off when not in use for longer than 5 minutes on the premises to reduce idling emissions.

- Sensitive receptors, such as residential units and daycare centers, shall not be located in the same building as dry-cleaning operations that use perchloroethylene. Dry-cleaning operations that use perchloroethylene shall not be located within 300 feet of any sensitive receptor. A setback of 500 feet shall be provided for operations with two or more machines.

Implementation of Mitigation Measure AQ-4 would ensure that any new sources of TACs associated with the proposed commercial and educational land uses would not expose existing or sensitive land uses to excessive TAC levels. Thus, the project-generated TAC sources would not result in an increased health risk to existing levels in the project area and this impact would be reduced to **less than significant with mitigation measures.**

Impact: Exposure of sensitive receptors to odors

The occurrence and severity of odor impacts depends on numerous factors, including: the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the affected receptors. While offensive odors rarely cause any physical harm, they can still be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies. Projects with the potential to frequently expose a substantial number of people to objectionable odors would be deemed to have a significant impact.

Construction

Minor odors from the use of heavy-duty diesel equipment and the laying of asphalt during project construction activities would be intermittent and temporary, and would dissipate rapidly from the source with an increase in distance. While facilities would be constructed intermittently over a 14-year buildout period, these types of odor-generating activities would not occur at any single location, or within close proximity to off-site receptors, for an extended period. Existing off-site receptors include residences located approximately 500 feet to the east of the project area. Given the temporary and intermittent nature of construction activities within specific locations in the project area (i.e., construction does not occur in any one part of the plan area during the 14-year buildout period), and that the prevailing wind direction is from the south, which would likely keep odor emissions away from adjacent land uses, project construction is not anticipated to result in an odor-related impact during the construction phase of the project.

Long-Term Operation

Operation of the proposed land uses would include diesel-fueled delivery trucks visiting loading docks at commercial land uses; however, these types of sources are not different from those that currently deliver materials to existing land uses in developed areas and would be relatively short and infrequent. Further, facilities developed under the project would be subject to SMAQMD Rule 402 (Nuisance) regarding the control of nuisances, including odors. Receptors located in the general vicinity of such sources may be exposed to odorous emissions. These receptors could include the new residences built around the commercial development, as well as existing residences located approximately 500 feet to the east of the project area.

The Sacramento Rendering Company operates the Sacramento Rendering Plant 700 feet south of the project area. The primary air pollutants emitted from rendering operations are volatile organic compounds (VOCs), which readily become gas and generally have strong odors. VOCs are very common in the environment, and are generally responsible for most of the strong odors we experience. The breakdown of organic material (which occurs at this facility) generates a wide array of different types of VOCs. Many of the VOCs emitted have low odor detection thresholds, which means that they smell so strongly that the odor can be detected even when very small amounts of the compound are present. For this reason, odors from a facility such as a rendering plant may continue to be detectable even at great distances and even if all feasible odor control devices are installed.

SMAQMD is the agency responsible for issuing permits to the rendering plant to ensure compliance with federal, State, and local air pollution rules and regulations. The permit issued includes conditions related to plant operations, and SMAQMD staff regularly inspect the facility to ensure that the permit conditions are being met. The facility includes an enhanced odor control system that was voluntarily installed by the Sacramento Rendering Company in 2004. Once the system was installed, it became subject to the permitting requirements and inspection processes of SMAQMD, but these requirements are limited to ensuring that the equipment is being maintained and operated. California Civil Code Section 3482.6 (the “Right to Farm Act”) includes rendering facilities in the definition of agricultural activities, and exempts facilities from nuisance rules if they predate the urban uses with which they have come into conflict. For this reason, if the company is meeting its permit conditions, SMAQMD cannot take enforcement action against the facility because of odor complaints.

Policy 603-19 of Mather Field Special Planning Area Ordinance places the following performance standard on all land use types developed under the MCSMP except for single family residences and parks:

- All future sale or lease agreements for lands and buildings located within the MSCMP shall specify the following:
    - The owner/lessee of this property/building acknowledge that the Sacramento Rendering Company plant is in a location predominantly upwind of this site. Owner/lessee also acknowledges that the Sacramento Rendering Company plant produces objectionable odors that will be detectable at this location during certain times of the year depending on wind speed, wind direction, or other meteorological conditions, and the operating conditions of Sacramento Rending Company. Owner/lessee agrees to hold Sacramento Rendering Company harmless from any odors produced by Sacramento Rendering Company that may affect the owner/lessee’s property/building or any occupants of said property/buildings.

- A condition shall be imposed on all subsequent entitlements for land and buildings within the MSCMP which shall specify the following:

- The owner shall provide notification to all subsequent owners/tenants of the property/building that the Sacramento Rendering Company plant is in a location predominantly upwind of the site and acknowledges that the Sacramento Rendering Company plant produces objectionable odors that will be detectable at this location during certain times of the year depending on wind speed, wind direction, and other meteorological conditions, and the operating conditions of Sacramento Rendering Company. Such notification may include, but is not limited to, notification in the Public Report prepared by the California Department of Real Estate disclosing this information to prospective buyers or through individual notice to lessee and occupants of all buildings.

With these conditions placed upon land uses developed under the Mather South Project, all future landowners and lessees would be aware of the potential odors generated at the Sacramento Rendering Company. The project would not add VOCs to the existing rendering plant that would exacerbate existing conditions, and therefore would not result in a significant CEQA impact.

The Kiefer Landfill is the other potential odor source to the Plan Area, which is located approximately 2.5 miles to the south east. SMAQMD has developed recommended screening distances for various odor-emitting land uses for which sensitive receptors should not be located within. Based on SMAQMD guidance, a distance of at least 1 mile is recommended for sanitary landfills.

The project is not anticipated to result in the installation of any major odor emission sources that would result in a potentially significant impact to the occupants of the proposed on-site land uses. However, although specific retails uses have not yet been identified, uses considered to be minor sources of odors may be developed. Such sources typically include dry cleaning establishments, restaurants, and gasoline stations.

As a result, potential exposure of sensitive receptors to odors associated with proposed land uses in the project area and the siting of new sensitive receptors in proximity to existing odor sources would be considered potentially significant.

MITIGATION MEASURES

AQ-5. Incorporation of design features for retail establishments to address potential odor sources. The project developer shall implement the following measures to reduce exposure of sensitive receptors to odorous emissions. These measures shall be incorporated into the Mather South Community Master Plan Design Guidelines.

- Land uses have that the potential to emit objectionable odorous emissions (e.g., dry cleaning establishments and gasoline stations) shall be located as far away as possible from existing and proposed sensitive receptors or downwind of nearby receptors.

- If an odor-emitting facility is to occupy a retail space, odor control devices shall be installed to reduce the exposure of receptors to objectionable odorous emissions. SMAQMD shall be consulted to determine applicable/feasible control devices to be installed. Use of setbacks, site design considerations, and emission controls are typically sufficient to ensure that receptors located near retail uses would not be exposed to odorous emissions on a frequent basis.

Through implementation of Mitigation Measure AQ-5, and notification of potential lessees and future landowners within the vicinity of the rendering plant, and given that emissions from such sources would typically be intermittent and would disperse rapidly with increased distance from the source, implementation of the project would not be anticipated to result in a frequent exposure of a substantial number of people to odorous emissions. This impact would be reduced to **less than significant with mitigation**.

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5 AIRPORT COMPATIBILITY

INTRODUCTION

The Mather Field Project EIR (2016) evaluated the Mather South Plan Area at the plan-level and that analysis is hereby incorporated by reference in this EIR and is summarized below where appropriate. This chapter describes the regulatory and environmental setting for airport compatibility in the Plan Area, identifies and analyzes impacts related to airport compatibility from implementation of the Mather South Project at a project-level, and if necessary, recommends mitigation measures to reduce or eliminate significant impacts.

During the NOP scoping process, no commenters raised concerns about airport compatibility. A copy of the NOP and comment letters received in response to the NOP are included in Appendix PD-2 of this Mather South Project Draft EIR.

ENVIRONMENTAL SETTING

Mather Airport is located within the unincorporated area of Sacramento County and is approximately 12 miles east of downtown Sacramento. The Mather South Plan Area is located approximately one mile east of the Mather Airport. Most of the airport operations occur north of the runway, which is centrally located within the airport boundary; however, the airport traffic control tower, as well as some hangar space and numerous installation restoration program sites are located south of the runway. The airport is 2,253 acres in size and is surrounded by a mix of residential, commercial, industrial, and open space land uses, including the Mather Preserve. Mather Airport includes two parallel runways that have a northeast/southwest orientation, 55 acres of cargo ramp space, 73 acres of general aviation aircraft parking ramp, 251,345 square feet of aircraft storage and maintenance hangars, and approximately 49,000 square feet of office space. (Sacramento County Department of Airports 2013).

Mather Airport typically receives somewhere between 230 to 280 landings per month with the majority of these being cargo planes. Approximately 88 percent of all aircraft operations occur on the southern runway, which is the longer one of the two. Flights can take various flight paths depending on various factors, which are shown in Plate AC-1.

Mather Airport has an Airport Land Use Compatibility Plan (ALUCP), which was approved in 1996 and provides land use compatibility guidelines and establishes planning boundaries for safety zones (Plate AC-2), noise (see Plate AC-3)[1], and height restrictions (see Plate AC-4). More information about these planning boundaries is provided in the Regulatory Setting section below. In 2006, the Board of Supervisors approved additional planning boundaries including new aircraft noise exposure contours and an Airport Planning Policy Area (APPA) by Resolution 2006-1378 (see Plate AC-5).

[1] The Theoretic Capacity Noise Contours for Mather Airport were updated by the Board of Supervisors in 2006 (Resolution 2006-1378).

Plate AC-1: Mather Airport Flight Tracks

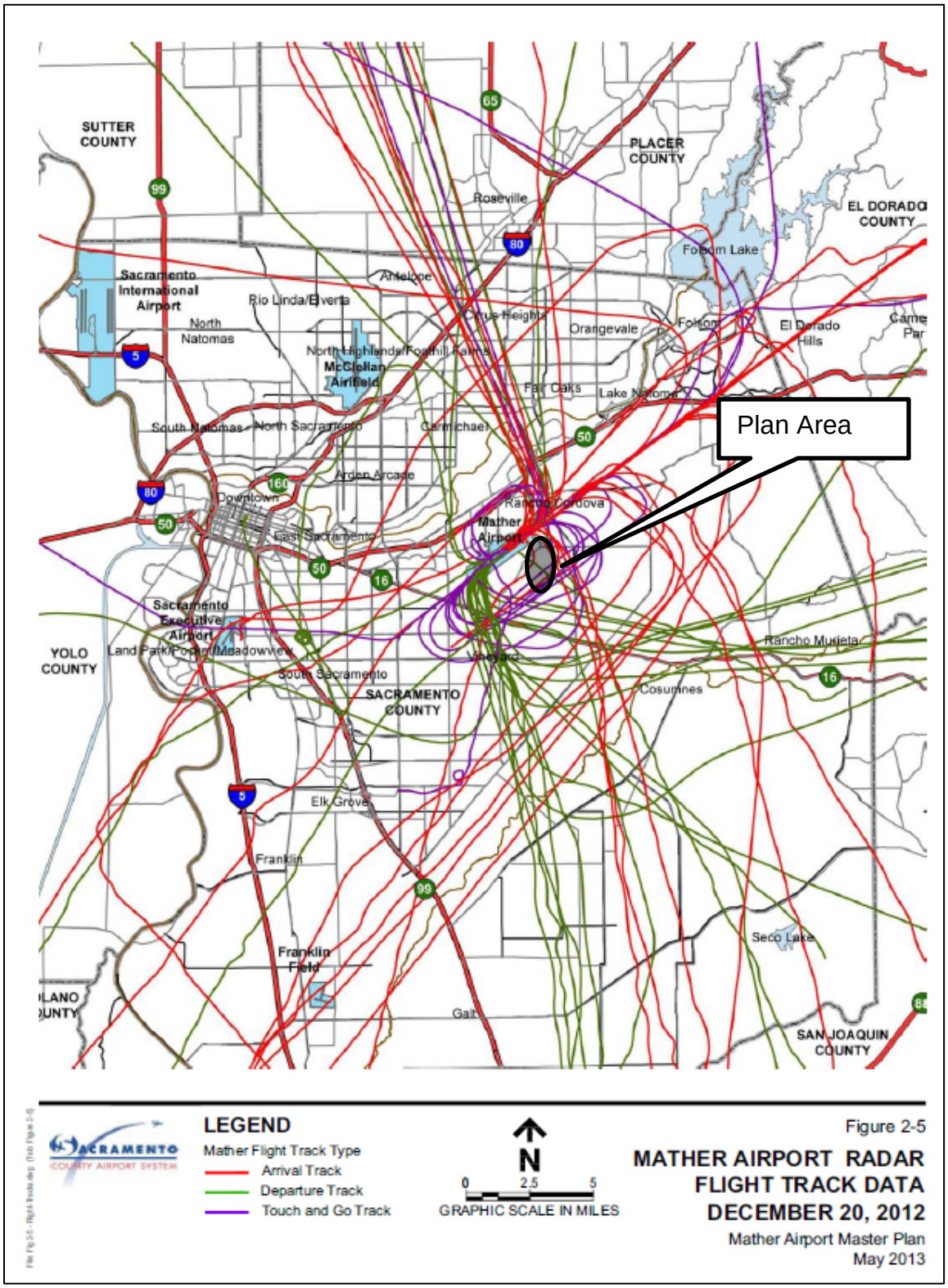


Plate AC-2: Mather Airport Safety Zones

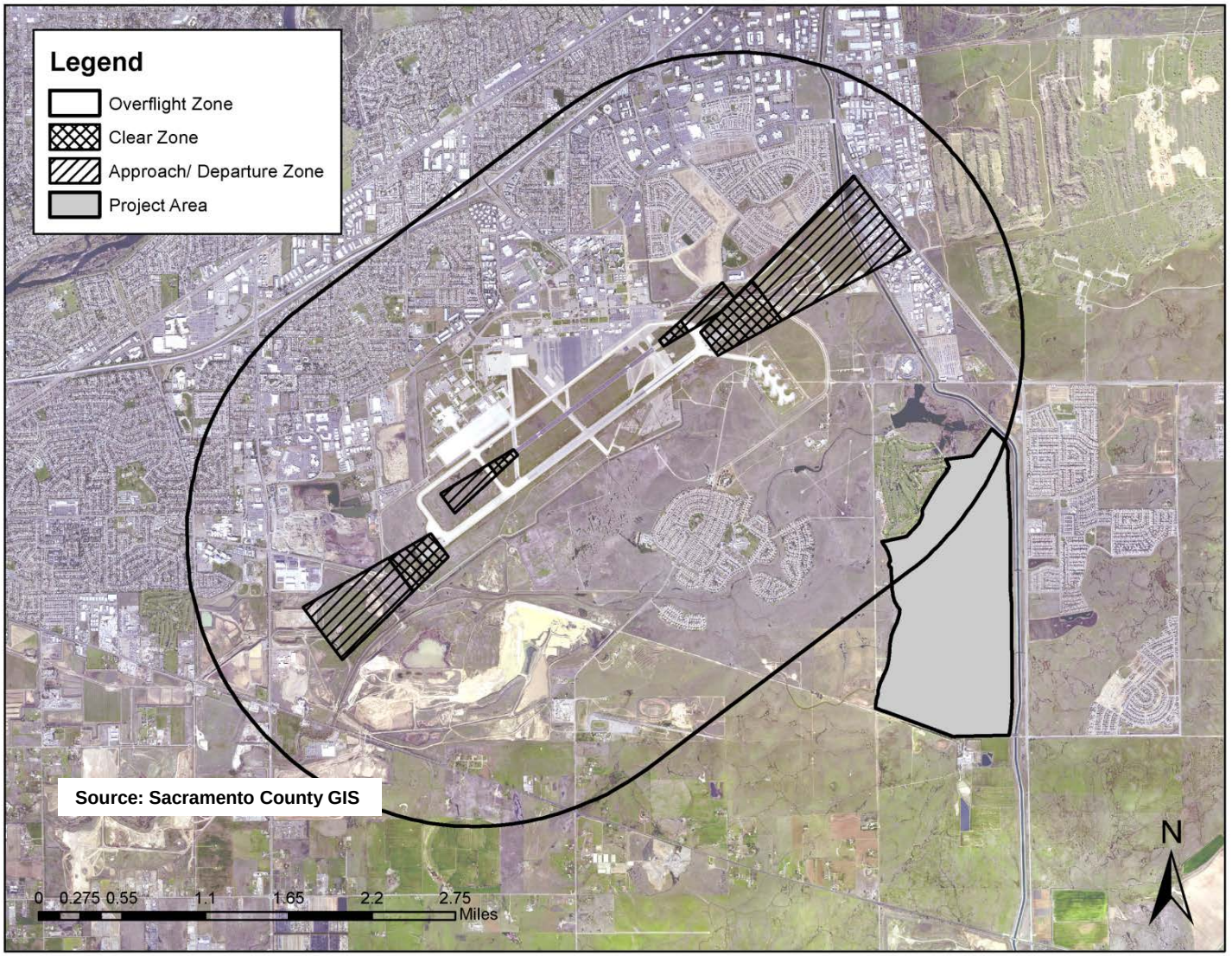


Plate AC-3: Mather Airport Theoretic Capacity Noise Contours

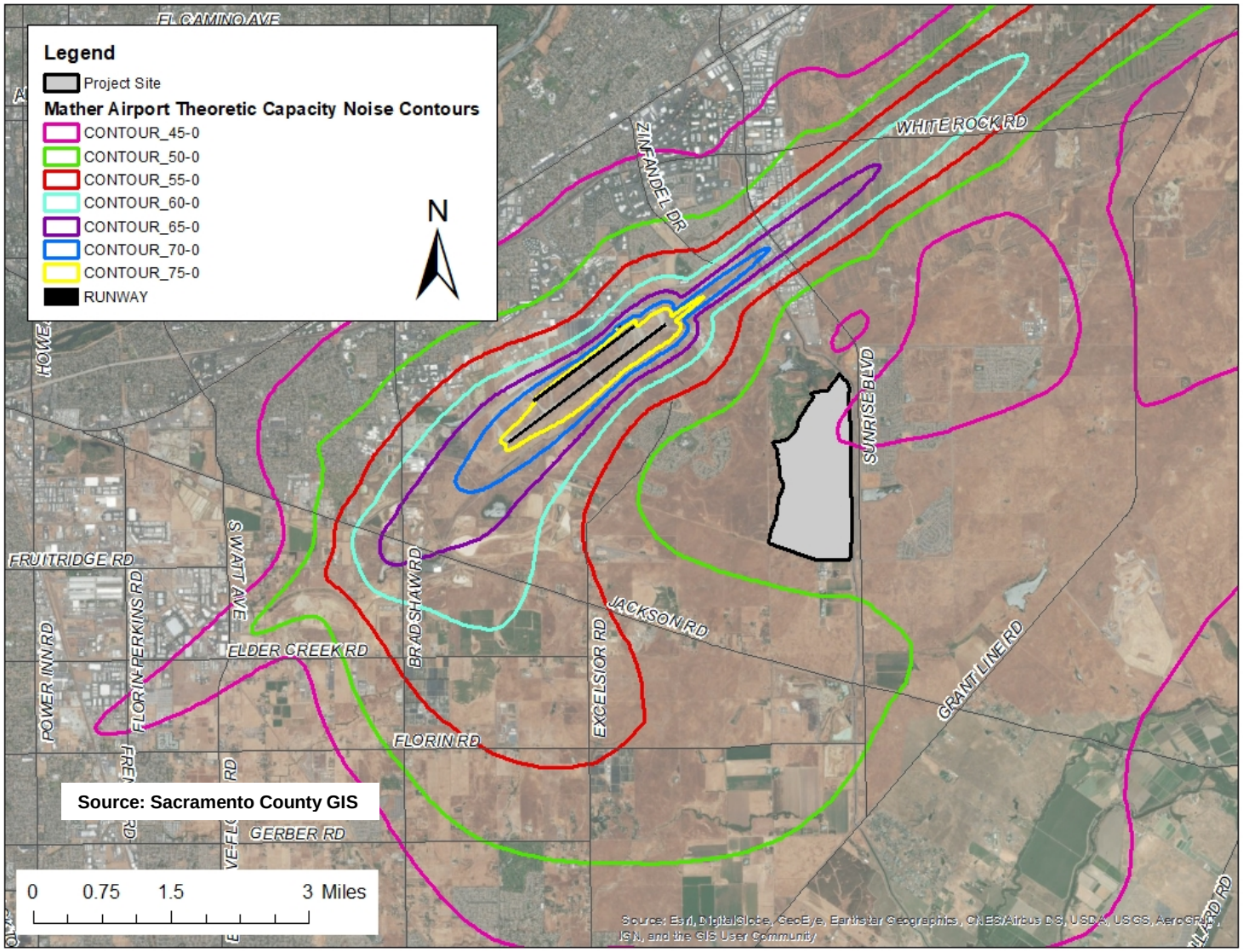
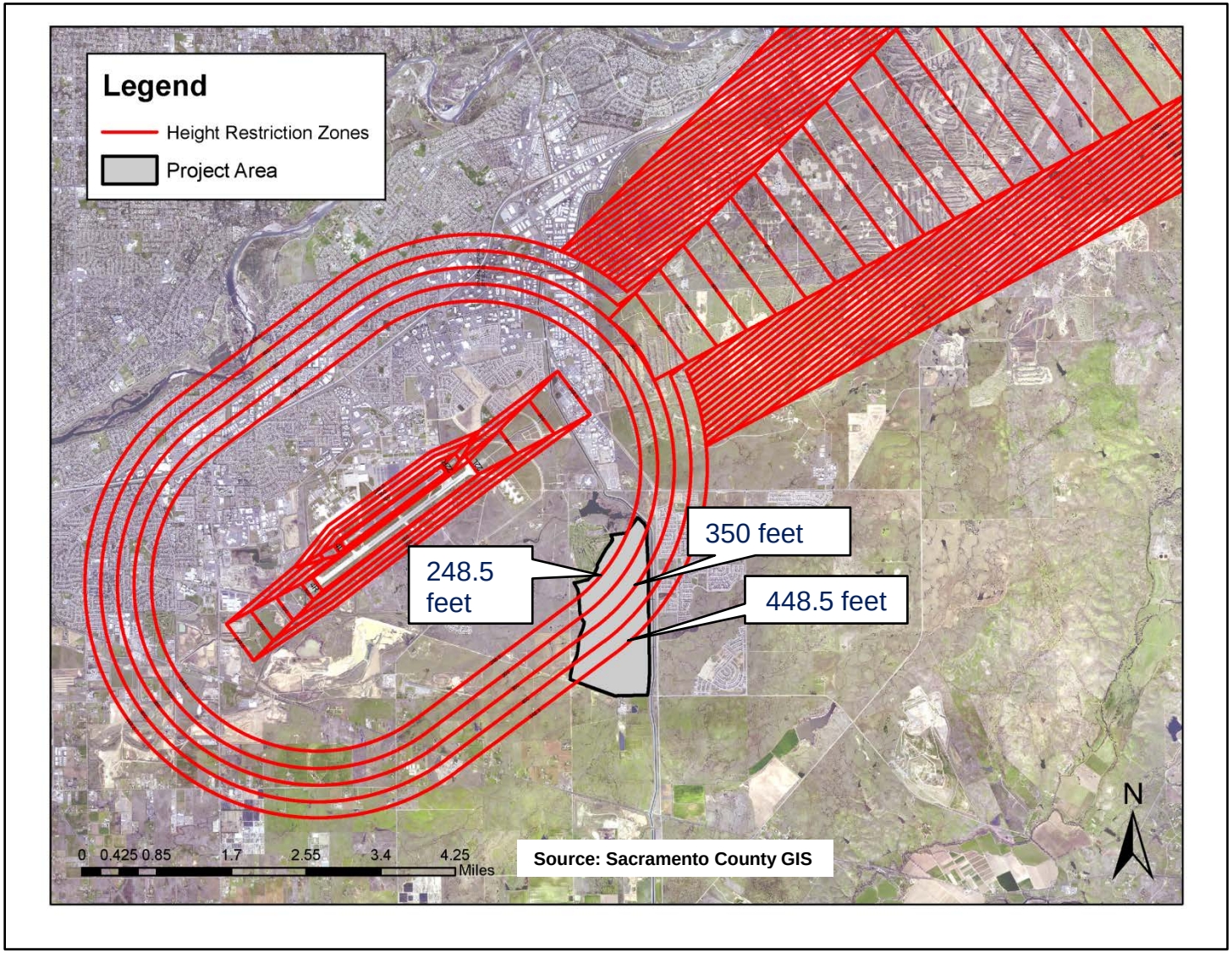


Plate AC-4: Mather Airport Height Restrictions



New General Plan policies related to new residential development within the APPA were also adopted at that time. The Comprehensive Land Use Plan (CLUP) and the APPA are discussed in greater detail in the Regulatory Setting. As shown in Plates AC-3 and AC-5, the Mather South Plan Area is located within the 45 community noise equivalent level (CNEL) Theoretic Capacity Noise Contour, within the APPA, but entirely outside of the 60 CNEL Theoretic Capacity Noise Contour. Additionally, a portion of the Plan Area (northwestern area) is within the overflight zone and has height restrictions, which are described below under "Height Restrictions."

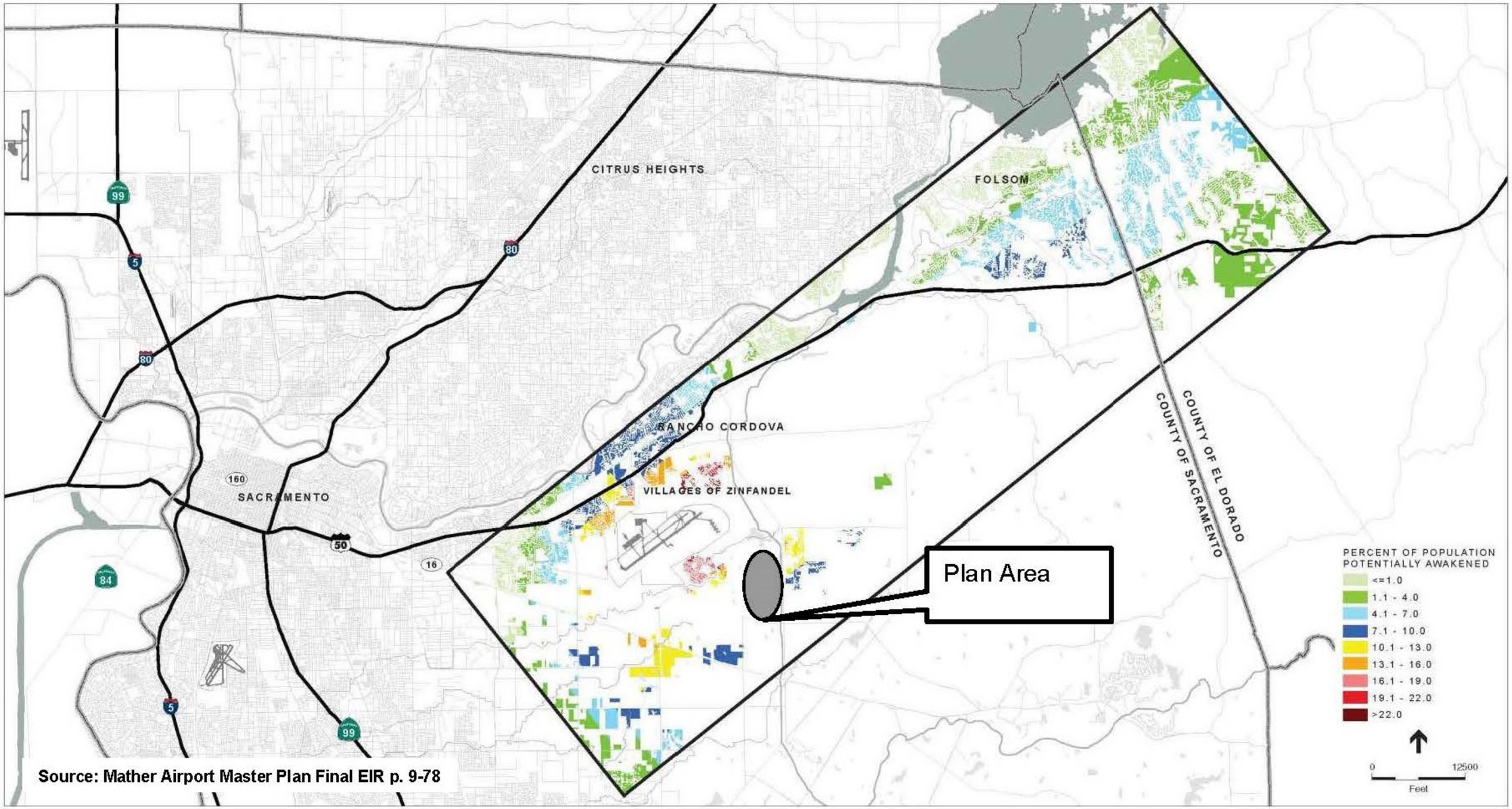
Nighttime Awakenings and Single Event Noise Levels

The Mather Airport Master Plan Final EIR, completed in 2012, includes a technical analysis of the percent of population potentially awakened in the areas around Mather Airport as a result of the project. The analysis includes the percent of population potentially awakened under the 2012 Existing Conditions scenario as well as three future conditions (2018 Proposed Project, 2035 No Project, and 2035 Proposed Project conditions).

In recent years, there has been an increased level of interest in the effects of aircraft noise on sleep. Many studies have been conducted regarding the effects of single-event noise on sleep disturbance, but because of the wide variation in the reaction of test subjects to sound exposure levels (SELs) of various levels no definitive consensus has been reached with respect to a universal criterion to apply. Upon a review of studies about sleep disturbance and aircraft-generated SELs, the Federal Interagency Committee on Aviation Noise (FICAN) provided estimates of the percentage of people expected to be awakened when exposed to specific SELs inside a home (FICAN 1997). According to the FICAN's review, 10 percent of the population is estimated to be awakened when the SEL interior noise level is 81 dBA. An estimated 5 to 10 percent of the population is affected when the SEL interior noise level is between 65 and 81 dBA, and few sleep awakenings (less than 5 percent) are predicted if the interior SEL is less than 65 dBA. However, FICAN did not recommend a threshold of significance based on the percent of people awakened. Sacramento County, the California Department of Transportation (Caltrans), the Governor's Office of Research and Planning, and most cities and counties have not established noise level standards for the effects of single-event noise. However, following the court decision in Berkeley Keep Jets Over the Bay Committee v. Board of Port Commissioners of the City of Oakland, 2001 there has been increased attention to the evaluation of single-event noise levels and their effects on sleep.

Although the information included in the Mather Airport Master Plan Final EIR regarding SELs and nighttime awakenings is not included in a significance determination as part of the analysis, the information allows the decision makers and public evaluating the proposed project to draw their own conclusions regarding the significance of the analysis in the context of the larger project. The analysis concluded that in the future, as a result of the implementation of the Mather Airport Master Plan, the communities around Mather Airport would be subject to increases in the percent of the population potentially awakened due to forecasted growth in aircraft operations at the airport. Plate AC-5 illustrates the percent of the population potentially awakened for the communities surrounding Mather Airport including the location of the Mather South Project. As

Plate AC-5: Percent of Population Potentially Awakened - 2035



Source: Mather Airport Master Plan Final EIR p. 9-78

illustrated in Plate AC-5, based on the percent of the population potentially awakened for the communities in close proximity to the site of the project, it is estimated that seven to thirteen percent of the population of the project will potentially be awakened by future flight activity as part of the Mather Airport Master Plan by 2035. However, as discussed in the Mather Airport Master Plan Final EIR, the awakenings analysis was conducted assuming the windows were open at sensitive receptor locations, which provides a conservative estimate of potential awakenings. Therefore, it is likely a smaller percentage of the future Mather South Project population will be potentially awakened by Mather Airport flight activity. Considering that the County of Sacramento has not adopted noise level standards for the effects of single-event noise, the information provided in this discussion is not used in the impact analysis. However, the discussion provides background information on SELs and an estimate, based on the Mather Airport Master Plan EIR, for the percent of the Mather South Project population who would potentially be awakened by future Mather Airport flight operations.

REGULATORY SETTING

AIRPORT LAND USE POLICY

Airports have widespread and potentially severe impacts on surrounding land uses. The state of California regulates airports under the authority of the Airport Land Use Commission Law, Chapter 4, Article 3.5, California Public Utilities Code. The purpose of the Airport Land Use Commission Law is to:

1. Protect public health, safety and welfare through the adoption of land use standards that minimize the public's exposure to safety hazards and excessive levels of noise.

2. Prevent the encroachment of incompatible uses around public-use airports, thereby preserving the utility of these airports into the future.

These purposes are implemented through airport land use commissions (ALUC), which are required in every county with a public use airport or with an airport served by a scheduled airline. The Sacramento Area Council of Government (SACOG) has been designated as the ALUC for the counties of Sacramento, Sutter, Yolo, and Yuba. Under the provisions of the law, the ALUC is required to prepare an ALUCP, formerly called a CLUP, for each public airport within its jurisdiction.

The ALUCP must be based on either a 20-year master plan or an airport layout plan if the Caltrans Division of Aeronautics makes a determination that the existing airport layout plan is adequate for use in ALUCP preparation. ALUCPs regulate land use in three major areas: safety zones, noise zones, and height restrictions. Information on these topics specific to Mather Airport is provided below under "Mather Airport Comprehensive Land Use Plan."

Safety Zones

The probability of airplane accidents is highest in the immediately vicinity of airports. Consequently, safety zones are delineated around airports which are associated with restrictions in land use. There are three safety areas: the clear zone, the approach-departure zone, and the overflight zone. The clear zone is near the end of the runway and is the most restrictive. The approach-departure zone is located under the takeoff and landing slopes and is less restrictive. The overflight zone is the area under the traffic pattern and is even less restrictive. The densities of land uses allowed in these zones are inversely related to probability of an accident in the zone (refer to Plate AC-2).

Noise Zones

Noise that emanates away from airstrips and airplane flight paths is represented by concentric noise contours around the airport. The contours delineate zones where land use is restricted, protecting the citizens from the detrimental effects of exposure to excessive airplane noise. The contours are constructed using the Federal Aviation Administration's (FAA) Integrated Noise Model. The result is a 24-hour day/night average called either Day-Night Average Sound Level or CNEL. The cumulative noise descriptor required for aircraft noise analyses in the State of California is the CNEL. The actual noise levels around an airport are a function of the number, time of day, and frequency of operations of each aircraft type. Noise levels are also influenced by the variations in monthly and seasonal flight schedule changes by the airlines. The contours are used to determine compatible land uses around the airport (refer to Plate AC-3).

Height Restrictions

Buildings surrounding airports are prohibited from intruding into aircraft airspace except when permitted by the California Department of Transportation, Division of Aeronautics. State law requires that General Plans be made consistent with ALUC adopted ALUCPs and/or CLUPs. Once consistency is achieved between the ALUCP/CLUP and County land use controls, State law requires that certain types of projects be referred to the ALUC for a determination of their consistency with an adopted ALUCP/CLUP. Such projects include amendments to the General Plan, or a community plan, and adoption or amendments to zoning ordinances that affect an area within an airport planning boundary as established by an ALUCP/CLUP. If the ALUC determines a project to be inconsistent, the County may overrule the ALUC by a two-thirds vote, again after a public hearing, and based on specific findings.

Mather Airport Comprehensive Land Use Plan

The current Mather Airport CLUP was adopted by the ALUC Board on May 15, 1997. The CLUP established height restrictions, noise contours, and safety zones for Mather Airport. On June 24, 1998, the Sacramento County Board of Supervisors approved a package of amendments to the General Plan that included the Mather Airport CLUP. At the time of preparation of this EIR, an update to the Mather Airport Land Use Compatibility Plan is in the early stages of preparation but not yet publicly available.

Mather Airport Safety Zones

Consistent with State airport land use policy as described above, the purpose of having safety zones is to minimize the number of people exposed to hazards related to aircraft operations and accidents. Plate AC-2 depicts the adopted safety zones for Mather Airport. As shown, a small northern portion of the Mather South Plan Area is located within the Overflight Zone but is well outside of the Clear and Approach/Departure Zones, both of which are more restrictive in terms of allowable land uses. The Overflight Zone generally coincides with the area overflown by aircraft during normal traffic pattern procedures. Within the three safety zones discussed above, the risk of aircraft accident is the least for the overflight zone and most for the clear zone. However, land uses are restricted in each zone to reduce the public's exposure to safety hazards from aircraft operation.

All residential uses are permitted within the Overflight Zone. Some non-residential uses associated with gatherings of large numbers of people are generally prohibited, including, but not limited to regional shopping centers, colleges and universities, hospitals, jails, stadiums, large movie theaters, auditoriums, and racetracks. Some industrial and manufacturing uses are prohibited, such as those associated with chemicals and allied products, petroleum refining, and rubber and plastics. No industrial uses are proposed within the Mather South Plan Area. An environmental campus is proposed as part of the project, but it is located outside of the Overflight Zone. The proposed community center is located within the Overflight Zone, but this is a permitted use within the zone.

Mather Airport Noise Contours

Noise generated from aircraft operations can be bothersome to the public. The Mather Airport CLUP defines airport noise contours and found that some uses are incompatible when noises are 60 CNEL or above. Therefore, the Mather Airport CLUP has restricted uses within the 60-85 CNEL noise contours to minimize the number of people exposed to bothersome noise from aircraft operations. Uses outside of these contours are not restricted.

Although the land use restrictions identified in the Mather Airport CLUP are still applicable, the airport noise contours were updated in 2006. The Board of Supervisors, by Resolution 2006-1378, defined a new Theoretic Capacity Noise Contour for 60 CNEL, which is used in this analysis. As shown in Plate AC-3, the Mather South Plan Area is located entirely outside of the 60 CNEL contour.

In 2013 a Draft Mather Airport Master Plan was prepared, which included updated aviation forecasts and a revised 60 CNEL noise contour. This may be used by SACOG for a future update to the Mather Airport CLUP and if the Mather Airport CLUP is revised to reflect these updated noise contours, land use restrictions surrounding Mather Airport could be altered. However, the Mather South Project is still outside of the 60 CNEL noise contour in the 2013 Draft Mather Airport Master Plan.

MATHER AIRPORT HEIGHT RESTRICTIONS

According to the Mather Airport CLUP, height standards for defining obstructions to air navigation are established by FAA and are defined in Federal Aviation Regulation (FAR) Part 77, *Objects Affecting Navigable Airspace*. The Mather Airport CLUP further discusses the need for height restrictions as follows:

> Height restrictions are necessary to ensure that objects will not impair flight safety or decrease the operational capability of the airport. FAR Part 77 defines a series of imaginary surfaces surrounding airports. Any object or structure which would penetrate any of these imaginary surfaces is considered by the FAA to be an obstruction of air navigation.

As shown in Plate AC-4, the majority of the Mather South Plan Area would be subject to height restrictions; building heights could not exceed the height above mean sea level listed in the plate. Elevations in the Plan Area range from approximately 128 feet above mean sea level to approximately 174 feet above mean sea level all well below the lowest height restriction.

MATHER AIRPORT PLANNING POLICY AREA

In 2006, Sacramento County adopted the Mather Airport Planning Policy Area (APPA), by Resolution 2006-1378, which places specific limitations on conditions of new residential development within certain proximity to Mather Airport. Specifically, the Mather APPA conditions:

1. Prohibit new residential development inside the current Board approved 60 CNEL noise contour for Mather Airport.

2. Condition new residential land uses within the APPA boundary but beyond the current Board approved 60 CNEL noise contour for Mather Airport as follows:

    a. Minimum noise insulation to protect persons from excessive noise within new residential dwellings, including detached, single-family dwellings, that limits noise to 45 dB CNEL, with windows closed, in any habitable room.

    b. Notification in the Public Report prepared by the California Department of Real Estate disclosing to prospective buyers that the parcel is located within the applicable APPA and that aircraft operations can be expected to overfly that area at varying altitudes less than 3,000 feet above ground level (AGL).

    c. Execution and recordation with the Sacramento County Recorder of avigation easements prepared by the Sacramento County Counsel's Office on each individual residential parcel contemplated in the development in favor of the County of Sacramento. All avigation easements recorded pursuant to this policy shall, once

recorded, be copied to the Director of Airports and shall acknowledge the property location within the appropriate APPA and shall grant the right of flight and unobstructed passage of all aircraft into and out of the appropriate airport.

The Policy Area is intended to increase the awareness of future residents of their possible exposure to aircraft operations; to limit the potential for conflict between the airport and adjacent communities; and, to protect future airport development and aircraft operations flexibility.

As shown in Plate AC-3 and AC-5, the entire Mather South Plan Area is within the Mather APPA, but outside of the 60 CNEL noise contour, so only Condition 2 would apply to the project.

Sacramento County General Plan

The following Sacramento County General Plan goals and policies are potentially applicable to the project:

LU-87. Because land use decisions around airports by local governments have a direct impact on an airport's long-term viability and utility, proposed new land use projects and land use practices near airports within Sacramento County shall consider consistency with current federal, State, and local airport land use compatibility regulations, orders, policies, plans, standards and guidance pertaining to public safety and minimization of hazardous wildlife attractants within five statute miles of County airports.

NO-2. Proposals for new development within Sacramento County which may be affected by aircraft noise shall be evaluated relative to Table 4: *Land Use Compatibility for Aircraft Noise*.

NO-4. New residential development within adopted Airport Policy Area boundaries, but outside the 60 CNEL, shall be subject to the following conditions:

A. Provide minimum noise insulation to 45 dB CNEL within new residential dwellings, including detached single-family dwellings, with windows closed in any habitable room.

B. Notification in the Public Report prepared by the California Department of Real Estate disclosing the fact to prospective buyers that the parcel is located within an Airport Policy Area.

C. An Avigation Easement prepared by the Sacramento County Counsel's Office granted to the County of Sacramento, recorded with the Sacramento County Recorder, and filed with Department of Airports. Such Avigation Easement shall acknowledge the property location within an Airport Planning Policy Area and shall grant the

right of flight and unobstructed passage of all aircraft into and out of the subject Airport.

Cordova Community Plan

The Cordova Community Plan does not contain specific policies related to airports or development located near airports.

Mather Field Specific Plan and Special Planning area

The following policies related to airport safety and land use would apply to the Mather South Project:

603-13.1 (c): All development and redevelopment projects shall be in compliance with the Federal Aviation Regulation (FAR) Part 77, *Objects Affecting Navigable Airspace*, pursuant to Mitigation Measure AC-2.

603-13.1 (d): All development or redevelopment within the Mather Airport Approach/Departure and Overflight Safety Zones shall be consistent with the allowed land uses detailed in the "Land Use Compatibility for Airport Safety" table, pursuant to Mitigation Measure AC-3.

Significance Criteria

Based on Appendix G of the State CEQA Guidelines, the project was determined to result in a significant impact to airport compatibility if it would result in:

1. A safety hazard for people residing or working in the vicinity of an airport/airstrip
2. The exposure of people residing or working in the project area to aircraft noise levels in excess of applicable standards
3. A substantial adverse effect upon the safe and efficient use of navigable airspace by aircraft
4. A change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks.

Issues Not Discussed Further

The project would not involve or affect air traffic movement because the project is a mixed-use development that would comply with height restrictions and does not contain a private airstrip. Therefore, there would be no impact to air traffic patterns and significance criterion 4 is not applicable.

IMPACTS AND ANALYSIS

2016 MATHER FIELD PROJECT EIR DETERMINATION

The Mather Field Project EIR evaluated impacts related to airport compatibility from implementation of the Mather Field Project which consisted of a realignment of Zinfandel Drive and trunk extension, creation of the Mather Preserve and the establishment of an Urban Development Area designation for the Mather South Plan Area.

The EIR concluded that the Mather Field Project would result in less than significant impacts with adherence to the ALUP and APPA standards, and implementation of Mitigation Measures AC-1 through AC-5 (listed below). The discussion of impacts related to airport noise, navigable air space, and airport safety zones can be found on pages 5-19 through 5-28 of the Mather Field Project EIR and is hereby incorporated by reference.

ADOPTED MATHER FIELD PROJECT EIR MITIGATION MEASURES

AC-1: **AIRPORT NOISE**: Proposed uses within the Mather Field Special Planning Area shall be in compliance with the uses and standards included in Table 4: Land Use Compatibility for Airport Noise found within the Noise Element of the Sacramento County General Plan.

AC-2. **NAVIGABLE AIRSPACE:** The following language shall be added to the Mather Field SPA Development Standards:

All development and redevelopment projects within the Mather Field SPA shall be in compliance with the Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace.

AC-3. **MATHER AIRPORT SAFETY ZONES:** The following language shall be added to the Mather Field SPA Development Standards:

All development or redevelopment within the Mather Airport Approach/Departure and Overflight Safety Zones shall be consistent with the allowed land uses detailed in the “Land Use Compatibility for Airport Safety” table.

AC-4. **FUTURE DEVELOPMENT APPLICATIONS:** Future development applications within the Mather Airport safety zones shall be reviewed by the Airport Land Use Commission in order to ensure that proposed projects are compatible with the safety zones.

MATHER SOUTH PROJECT IMPACTS DETERMINATION

IMPACT: SAFETY HAZARD TO PEOPLE LIVING AND WORKING IN THE VICINITY OF AN AIRPORT/AIRSTRIP

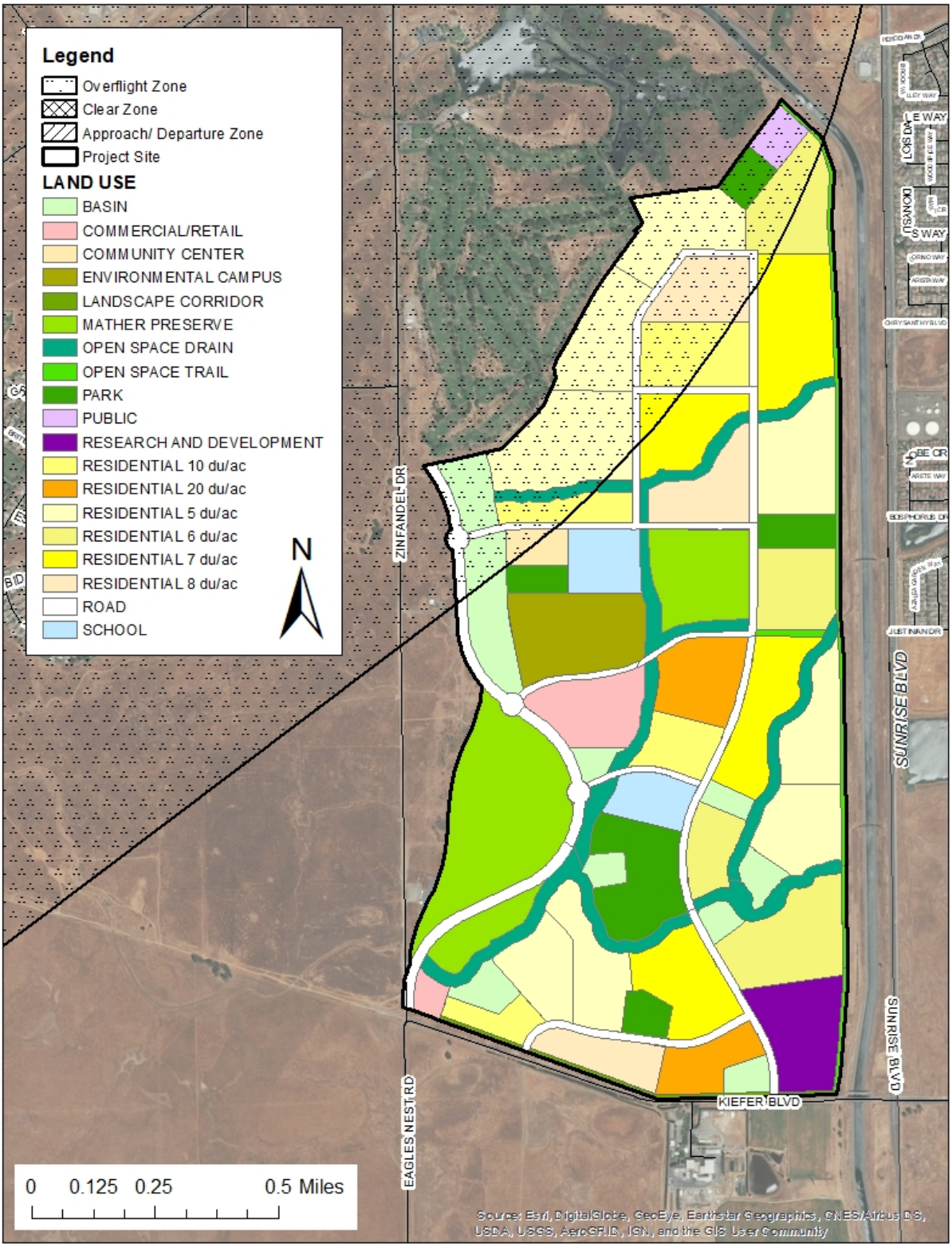
Airport safety zones are established to minimize the number of people exposed to aircraft crash hazards. According to the CLUP for Mather Airport, a portion of the Mather South Plan Area is located within the Overflight Zone, which is the least restrictive for development. There are no areas of the Plan Area that are located in the Clear Zone or the Approach/Departure Zones. The entire Plan Area is located within the APPA, as shown in Plate AC-5.

Approximately 18 percent of the Mather South Plan Area is within the Overflight Zone (refer to Plate AC-2). The Mather South Community Master Plan proposed land uses within the Overflight Zone include drainage basins, open space drainage, parks, a public use (water tank), a community center, and residential uses with densities varying from 5 to 10 dwelling units per an acre. Plate AC-6 provides a more detailed map showing these proposed land uses within the Overflight Zone. None of the restricted uses cited in the CLUP land use compatibility table are proposed within the Overflight Zone. While the project includes an environmental campus (a restricted use), this area is located outside of the Overflight Zone, in the southern portion of the plan area. Therefore, all proposed land uses are compatible with the allowed uses within the Overflight Zone[2]. Additionally, ALUC/SACOG staff reviewed the project and provided comments dated August 6, 2017. The ALUC recognized that a small portion of the subject property is located within the Mather Overflight Zone and stated that the Mather South Project does not contain anything that is inherently incompatible with the Mather CLUP.

Risks associated with living within the Overflight Zone are slightly elevated over areas outside of the zone because aircraft would routinely be in the area. However, overall risks associated with living or working within the Overflight Zone are not substantial and would be allowable under the CLUP and County policies. The CLUP based the configuration of the Overflight Zone on safety considerations and determined that working and living within the Overflight Zone to be safe. Additionally, as mentioned above, the entire Plan Area is located within the APPA, which places limitations on new residential development within the area depicted in Plate AC-5. All residential development within the APPA is conditioned so that prospective homebuyers are notified via a public report disclosure by the California Department of Real Estate that the property is located within the APPA and that aircraft operations occur within the area.

[2] The basin is compatible only if it does not result in ground fog or bird hazard. This is discussed further in the *Impact: Effects on the Safe and Efficient Use of Navigable Airspace* section.

Plate AC-6: Mather Airport Overflight Zone and Project Land Uses



Source: Sacramento County GIS

The Mather Field Project EIR included Mitigation Measures AC-3 and AC-4 to ensure that all future development within the Mather Field Specific Plan Area is compatible with Mather Airport Safety zones. This mitigation measure was not identified in the project application, but would be applicable to the project. Therefore, because the project does not include and would not be consistent with mitigation identified in the Mather Field Project EIR, this would be a potentially significant impact. However, with the inclusion of implementing Mitigation Measures AC-1 and AC-2, this impact would be reduced to **less than significant with mitigation.**

MITIGATION MEASURE

AC-1. In accordance with the Mather Field Project Development Standards, the project would be required to be reviewed by the Airport Land Use Commission prior to approval or issuance of building permits to ensure that it is compatible with the Mather Airport safety zones.

AC-2. Development applications that result from the Mather South Project that are located within Mather Airport safety zones shall be reviewed by the Airport Land Use Commission prior to approval or issuance of building permits in order to ensure that proposed projects are compatible with the safety zones.

IMPACT: EXPOSURE TO EXCESSIVE NOISE LEVELS ASSOCIATED WITH AIRPORT OPERATIONS

The Mather South Plan Area is approximately one mile from the Mather Airport and would be subjected to noise generated from existing and projected future airport operations. According to Plate AC-2, the entire Mather South Plan Area is located within the 45 CNEL noise contour. There are no land use restrictions within this noise contour associated with the CLUP, and these levels are within adopted General Plan noise standards. The entire Plan Area is within the Mather APPA, which requires a condition be placed on all residential development outside of the 60 CNEL noise contour but within the APPA to include noise insulation that reduces interior noise levels to 45 dB CNEL or less. General Plan Policy NO-4 reiterates this APPA requirement. The Mather Field Project EIR included Mitigation Measure AC-1 to ensure all future development is compatible with Mather Airport noise standards. This mitigation measure was not identified in the project application but would be applicable to the project. Therefore, because the project does not include and would not be consistent with mitigation identified in the Mather Field Project EIR, this would be a potentially significant impact. However, with the inclusion of implementing Mitigation Measure AC-3, this impact would be reduced to **less than significant with mitigation**.

MITIGATION MEASURES

AC-3. Development related to the Mather South Project shall be in compliance with the uses and standards included in Table 4: Land Use Compatibility for Airport Noise found within the Noise Element of the Sacramento County General Plan prior to approval or issuance of building permits.

Impact: Effects on Safe and Efficient Use of Navigable Airspace

Building Height Restrictions

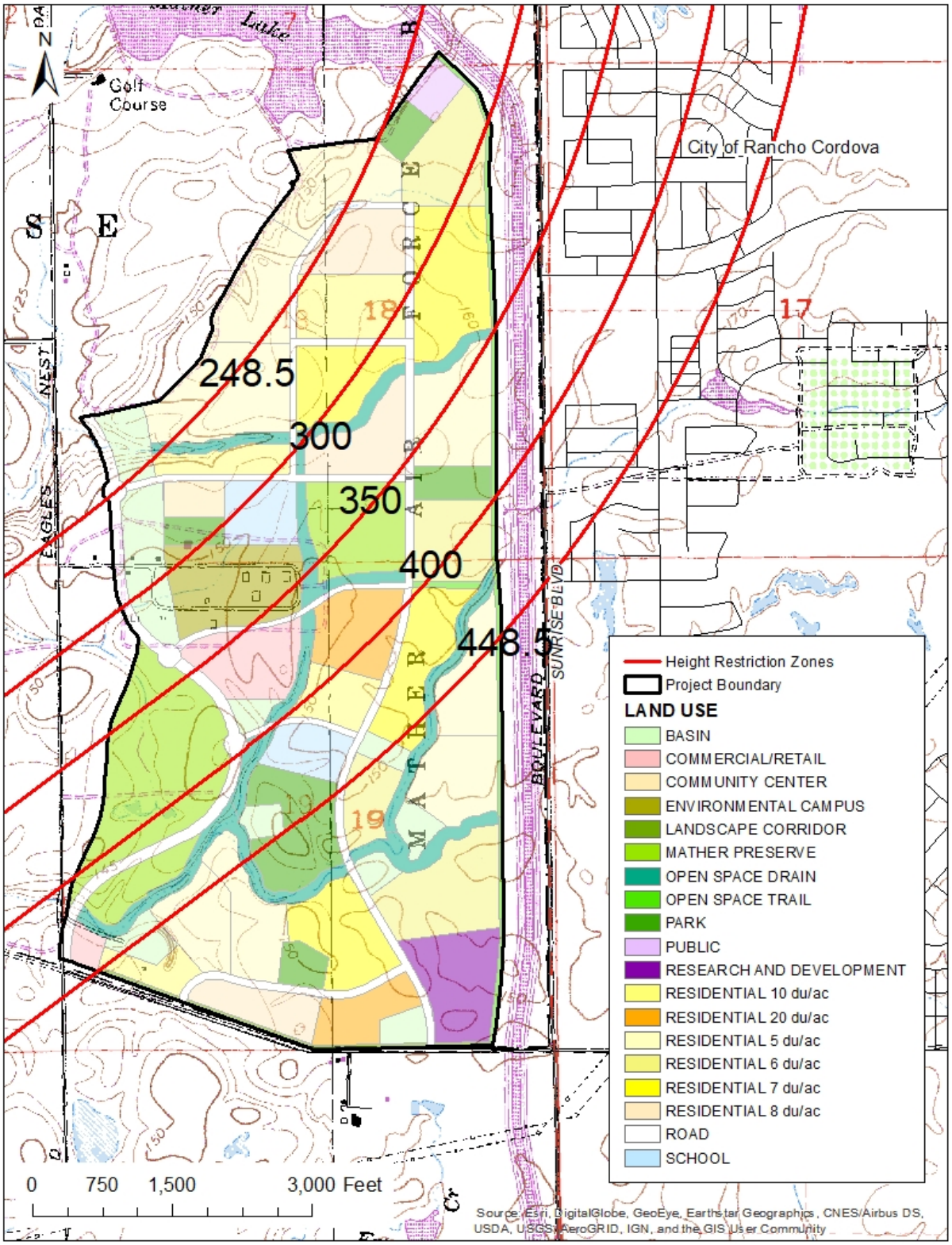
The CLUP includes height standards for buildings surrounding the airport and are most restrictive adjacent to the runway and become less restrictive further away. Navigable airspace could be adversely affected if building heights in the Mather South Plan Area exceed these designated height standards. This is a potentially significant impact, however, the Mather Field Project EIR included Mitigation Measure AC-2 which requires development and redevelopment projects within the Mather Field SPA to be in compliance with the FAR Part 77, Objects Affecting Navigable Airspace. The height restrictions that apply to the Plan Area are between 248.5 feet to 448.5 feet above mean sea level. Plate AC-7 illustrates the specific height restrictions that apply to the project site and associated land uses proposed for the Mather South Community Master Plan.

Elevations within the Plan Area ranges between 128 to 174 feet above mean sea level. Therefore, under the most restrictive requirement, buildings developed onsite would need to be less than 74.5 feet tall. The maximum building height allowed by the Mather South Development Standards (Chapter 7 of the Mather South Community Master Plan Document, Appendix 1) is 50 feet, as shown in Table AC-1. Therefore, no buildings within the Plan Area would exceed the maximum building height of 74.5 feet and project related impacts to navigable airspace with respect to building heights would be **less than significant**.

Table AC-1: Maximum Project Building Heights in the Plan Area

Land Use	Maximum Height Allowed
Single Family (RD-5, RD-7, RD-8)	40 Feet per Master Plan
Low Density Multi Family (RD-10)	40 Feet per Master Plan
Multi-Family (RD-20)	45 Feet per Zoning Code for RD-20
Commercial/Retail	50 Feet per Zoning Code for GC
Research and Development	40 Feet per Zoning Code for MP
Environmental Education Campus	40 Feet per Zoning Code for MP
Community Center	40 Feet per Zoning Code for MP

Plate AC-7: Height Restrictions and Project Land Uses



Source: Sacramento County GIS

BIRD STRIKE HAZARDS

Navigable airspace can also be adversely affected by project features that could attract wildlife causing bird strike hazards. This is a potentially significant impact, however the Mather Field Project EIR included Mitigation Measure AC-2 which requires development and redevelopment projects within the Mather Field Specific Plan Area to be in compliance with the FAR Part 77, Objects Affecting Navigable Airspace. An analysis conducted in accordance with the FAA's Wildlife Strike Database provides what type of wildlife species has caused known collisions at Mather Airport. According to the database, there have been 136 wildlife strikes since November 1997 and most collisions were from unknown small bird species, followed by raptors, and only 7 strikes were caused by avian species associated with aquatic habitats.

Currently, the Mather South Plan Area primarily contains open space, non-native grasslands, wetlands, and two tributaries to Todd Creek. The Plan Area currently has substantial existing wildlife attractants, including aquatic resources and foraging habitat. The project would urbanize the majority of the Plan Area by converting existing open space to residential, commercial, and public uses. This would remove non-native grasslands and wetlands, which would result in a reduction of potential hazardous wildlife attractants. The project includes 86 acres of wetland preserve, four open space drainage corridors, and ~~nine~~**ten** basins that range from 3 to 16 acres in size. The wetland preserves and open space drainage corridors would be left in their current natural state; therefore, there would be no change related to wildlife attractants. The main purpose of the basins is stormwater management and water quality control but could also provide other uses such as environmental education opportunities, pedestrian and bike trail routes, and informal recreation areas. While the basins could provide a possible wildlife attractant, they would not be filled year-round and are much smaller in scale to other water features in the region. Therefore, in comparison to existing onsite conditions, it is unlikely that these project features would attract large migratory flocks of water fowl above what currently occurs.

Overall, there would be a net reduction in wildlife attractants through the Mather South Plan Area, resulting in a slight benefit related to bird strike hazards. Therefore, project related impacts to navigable airspace with respect to bird strike hazards at Mather Airport would be **less than significant**.

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6 BIOLOGICAL RESOURCES

INTRODUCTION

This chapter describes the biological resources that occur within the Mather South Plan Area (Plan Area), includes a description of applicable federal, State, and local regulations and policies that influence biological resources, identifies potential impacts to these resources, and recommends mitigation measures to reduce or eliminate impacts associated with the Mather South Project. The analysis focuses on impacts to the grassland and wetland habitats, which dominate the Plan Area, and the special-status species that rely on these habitats. Species covered include a variety of special-status plants, invertebrates, birds, amphibians, reptiles, and mammals.

As described in Chapter 1 Project Description, the Mather South Plan Area is located within the Mather Field Specific Plan Area. The Mather Field Project EIR (2016) evaluated the Plan Area at the plan-level and that analysis is incorporated by reference and summarized in this section where appropriate. Establishment of the Mather Preserve was included in the Mather Field project, however the current development plan for Mather South has changed slightly, therefore, this EIR analyzes the biological impacts of the Mather South Project at a project level. Development of the Mather Specific Plan Area, including the Plan Area, has also been analyzed in an environmental impact statement (EIS) prepared by the U.S. Army Corps of Engineers (USACE) as part of the permitting process pursuant to Section 404 of the Clean Water Act (CWA). The EIS analyzed impacts within the Plan Area at a program level, although infrastructure improvements, such as the realignment of Zinfandel Drive, were analyzed at a project level (USACE 2018).

During the Notice of Preparation (NOP) scoping process, comments were received about compliance with Title 23, Section 7, proximity to Morrison Creek, and proximity of proposed development to Mather Preserve. A copy of the NOP and comment letters received in response to the NOP are included in Appendix PD-2 of this Mather South Project Draft EIR.

PLAN AREA BACKGROUND

WETLAND PRESERVATION

In April 2004, the Sacramento County Board of Supervisors conceptually endorsed creation of a “Wetlands Preserve” within Mather Field in compliance with a 1999 Biological Opinion (BO) issued by the U.S. Fish and Wildlife Service (USFWS) relating to water service contracts that deliver water out of the Sacramento River for use within Sacramento County Water Agency’s Zone 40 Service Area, which includes Mather Field. The BO required the development of a vernal pool management plan and dedication of conservation easements over vernal pools on the Mather Field Airport and

Mather Regional Park. In June 2005, stakeholders, representing thirteen outside entities and seven County departments met to develop alternatives for boundaries of the Wetlands Preserve (Mather Preserve) and to identify other vernal pools to be protected. In 2006, the Sacramento County Department of Economic Development presented recommendations to the Board which would change Mather Field Specific Plan land use designations and initiate amendments to the adopted General Plan and Mather Field Specific Plan. The Board approved the recommendations, which authorized initiation of CEQA review and preparation of applications to regulatory agencies for necessary permits to develop the approved land uses. Following Board approval, the County Department of Economic Development submitted seven permit applications to the USACE to develop portions of the Mather Field Specific Plan Area, including the Plan Area. These permit applications included changes from the 2006 land use configurations approved by the Board, including the removal of some "protected areas" and the enlargement of the proposed Wetland Preserve.

In January 2012, USFWS issued the *Biological Opinion for the Disposal of the Former Mather Air Force Base, Sacramento County*. The 2012 BO contemplates future development of the Mather Field Specific Plan Area and assesses the impacts to special-status species and habitat consistent with the provisions of the federal Endangered Species Act (ESA).

USFWS, USACE, the U.S. Environmental Protection Agency (EPA), and the California Department of Fish and Wildlife (CDFW) approved the Interim Mather Wetlands Management Plan (IWMP) in 2014. This approval of the IWMP meets the endangered species and wetlands protection requirements described in the Supplemental ROD issued by the U.S. Air Force for the disposal and reuse of Mather Air Force Base. The Final Wetlands Management Plan was approved and adopted by the County Board of Supervisors in February 2015.

ENVIRONMENTAL SETTING

The Plan Area is approximately 848 acres in size and is characterized as primarily flat with a discernible slope from the west to the east; however, the Plan Area exhibits a slightly undulating topography characterized by vernal swales and pools intersected by small drainages and creeks. Overall, site elevations range from 128 feet above sea level along the western boarder to 164 feet above sea level along the eastern border to 174 in the northeastern corner.

The entire site is currently vacant and undeveloped. However, it was previously used for military operations so there are some remnants of military activity including abandoned bunker buildings in the center of the Plan Area. The majority of the Plan Area contains annual grasslands with vernal pools and other wetlands, and scattered cottonwood woodland stands distributed throughout.

The biological resource information presented in this section is based on review of available background reports; previous studies conducted on or near the plan area,

biological resource databases, the Sacramento County General Plan (Sacramento County 2011), and the Final South Sacramento County Habitat Conservation Plan (SSHCP) (Sacramento County et al. 2018). Background reports reviewed include the following:

- *Mather Field Airport Natural Resources Assessment* (WRA 2004a);
- *Final Report for Mather Field Vernal Pool Study* (Jones & Stokes 2001);
- *Mather Field Revised Final EIR* (Sacramento County 2013);
- *Mather Specific Plan Project Final EIS* (USACE 2018);
- *Final South Mather Wetlands Management Plan* (Sacramento County 2014);
- *Arborist and Tree Inventory Summary, Mather South Project Site* (Lewis Operating Corp. 2014);
- *Delineation of Potential Jurisdictional Wetlands and Waters of the United States under Section 404 of the Clean Water Act, Mather Field Study Area, Sacramento County, CA* (WRA 2004b);
- *Mather Field Wetland Delineation Reverification 2012* (Sacramento County 2012); and
- *Biological Opinion for the Disposal of the Former Mather Air Force Base, Sacramento County* (USFWS 2012).

Wetlands and other waters of the United States (U.S.) have been delineated according to USACE methodology within the Plan Area and verified by USACE most recently in February of 2013. Vegetation within the Plan Area was also classified and mapped through remote sensing techniques by Sacramento County for the SSHCP and mapped in the field as part of the Mather Field natural resources assessment (WRA 2004a). Existing vegetation types within the Plan Area were derived from these data sources and verified and refined by Ascent biologists in July 2018 through a combination of previously existing vegetation and habitat data, aerial imagery interpretation, and a field reconnaissance survey conducted on July 23, 2018. Locations of elderberry shrubs mapped during surveys conducted for the Sacramento County Water Authority's NSA Pipeline and the Mather Field Project Zinfandel Drive extension in 2014 were provided as the Geographic Information Systems (GIS) points to the County. Additional elderberry shrubs were identified during the biological reconnaissance survey conducted on July 23, 2018 and added to the habitat map; however, a comprehensive survey for elderberry shrubs has not been completed for the entire Plan Area and additional elderberry shrubs are likely present. Local biologists associated with the Mather Stewardship Network conducted surveys for sensitive bird species between January 4 and June 13, 2014 and provided a list of species and number of birds of each species observed in the Plan Area during the survey.

Mather Lake and Mather Golf Course are directly to the north of the Plan Area, while the Folsom South Canal borders the eastern edge of the Plan Area. Rancho Cordova city limits are on the other side of the Folsom South Canal and there are multiple housing

subdivisions in the vicinity. The Mather Preserve is directly to the west of the Plan Area, while the Independence at Mather housing development is a half mile to the west and Mather Airport is approximately 1.7 miles to the northwest. The Sacramento Rendering Plant is located directly south of the Plan Area across Kiefer Boulevard.

HABITATS

The predominant habitat type in the Mather South Plan Area is annual grassland interspersed with vernal pools, seasonal wetlands, and vernal swales. The Plan Area contains two upland habitats, four wetland habitats, one non-wetland aquatic habitat, and one riparian habitat type. Each of these habitat types is described in the following paragraphs and the acreage of each is provided in Table BR-1. The distribution of each habitat type within the Plan Area is shown in Plate BR-1. Each of these habitat types is also found in the adjacent Mather Preserve.

Table BR-1: Habitat Types in the Plan Area

Habitat Type	Acres in Plan Area
Upland Habitats	***782.12***
Annual Grassland	704.97
Coyote Brush Scrub	77.15
Wetland Habitats	***21.35***
Vernal Pools	5.87
Seasonal Wetlands	11.33
Vernal Swales	3.59
Drainage Ditches	0.56
Non-Wetland Waters	***3.57***
Stream/Creek	3.57
Riparian Habitats	***41.16***
Cottonwood Woodland	41.16
Sources: WRA 2004, Sacramento County 2011 and 2013, data compiled by Ascent Environmental in 2018	

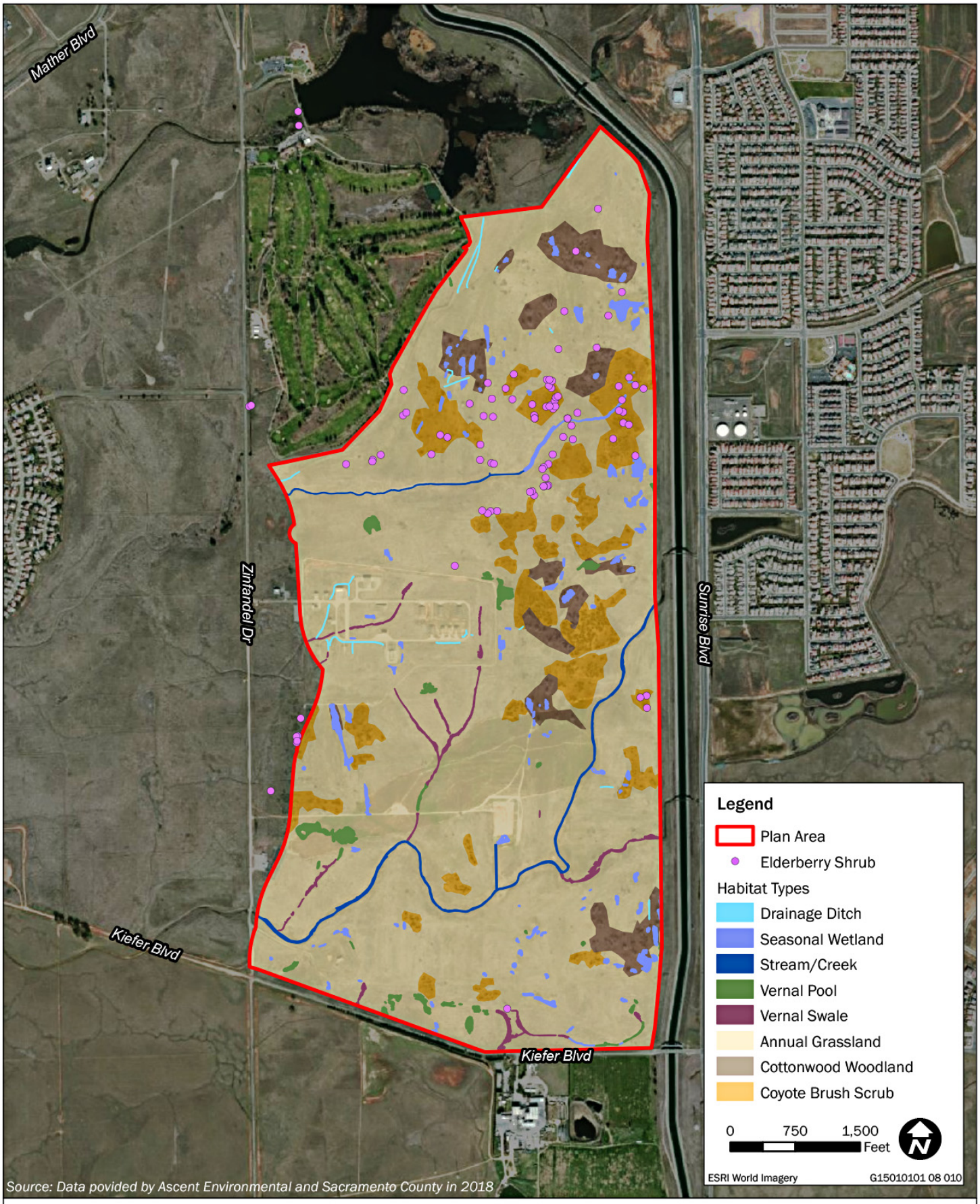


Plate BR-1: Land Cover and Aquatic Features

ASCENT ENVIRONMENTAL

UPLAND HABITATS

ANNUAL GRASSLAND

Annual grassland habitat makes up the majority of the Plan Area. Annual grasslands in the Plan Area have been modified by past land uses, including off-road vehicle use, military uses, and dumping. This vegetation type is dominated by naturalized annual grasses and weedy annual forbs, primarily of Mediterranean origin, that have replaced native wildflower fields, perennial grasslands, and scrub because of human disturbance. However, native annual and perennial wildflowers remain a characteristic component of the annual grassland vegetation type. In the Plan Area, annual grassland surrounds vernal pool complexes, providing an important upland element that may be used for species movement and dispersal between pools as well as nesting or estivation habitat for species that use the pools for foraging of for only certain phases of their life cycle. It should be noted that there has been recent movement in academia to move away from the annual grassland labeling of such landscapes to that of California Prairie or Vernal Pool Prairie where grassland areas are coincidental to vernal features. This is due, in part, to the misconception that annual grasslands often contain a monoculture of nonnative grasses when in fact the areas noted to be annual grasslands in California often contain a much greater variety of plant species, including numerous native wildflowers. Additionally, vernal pool ecology and functions (e.g., hydrologic cycle, nutrient cycling, water chemistry, food chain support, and plant-pollinator relationships) are dependent on surrounding uplands. In the SSHCP, this habitat type is called valley grassland (Sacramento County et.al. 2018).

Common grass species that have been documented within the Plan Area include medusa head (*Elymus caput-medusae*), silver hairgrass (*Aira caryophyllea*), slender wild oat (*Avena barbata*), ripgut brome (*Bromus diandrus*), soft chess (*Bromus hordeaceus*), and Italian ryegrass (*Festuca perennis*). Native wildflowers documented in the Plan Area include elegant brodiaea (*Brodiaea elegans*), Fremont's tidy-tips (*Layia fremontii*), miniature lupine (*Lupinus bicolor*), vinegar weed (*Trichostema lanceolatum*), white-tipped clover (*Trifolium variegatum*), white hyacinth (*Triteleia hyacinthina*), and butter and eggs (*Triphysaria eriantha*). Occasional individual coyote brush (*Baccharis pilularis*) and blue elderberry (*Sambucus nigra* ssp. *caerulea*) shrubs occur within areas mapped as annual grassland. Known elderberry shrub locations are shown as points on Plate BR-1. Invasive plants documented in the Plan Area include yellow star-thistle (*Centaurea solstitialis*), milk thistle (*Silybum marianum*), Italian thistle (*Carduus pycnocephalus*), medusa head, yellow glandweed (*Parentucellia viscosa*), barbed goatgrass (*Aegilops triuncialis*), and stinkwort (*Dittrichia graveolens*).

COYOTE BRUSH SCRUB

Coyote brush scrub occurs in scattered patches across the Plan Area. This habitat type is characterized by a medium-height, relatively dense shrub layer dominated exclusively by coyote brush with an herbaceous understory comprised primarily of nonnative grasses and forbs typical of the annual grassland type described above. Some stands of coyote brush scrub contain blue elderberry as an associate shrub species (shown as points on Plate BR-1). Areas mapped as coyote brush scrub exist as distinct stands that

lack large openings vegetated by grasses; scattered individuals (i.e., those greater than 100 feet from the nearest coyote brush scrub polygon) within areas dominated by grasses were considered part of the annual grassland (WRA 2004a). This habitat type is not identified in the SSHCP and areas mapped as coyote brush scrub in this document were included within valley grassland or mine tailing riparian woodland polygons.

WETLAND HABITATS

Wetland habitats are those that are inundated or saturated by surface or groundwater for long enough duration during the growing season to support vegetation adapted to growth in anaerobic (without oxygen) conditions. Wetland habitats are typically vegetated (i.e., support at least 5 percent aerial cover of plants during the peak of the growing season). Habitats that are inundated during the growing season and are not vegetated are generally considered other waters (i.e., lakes, streams, ponds) and not wetlands. As defined in this document, wetland habitats meet the federal three-parameter definition of wetlands in being dominated by hydrophytic vegetation and having hydric soils and wetland hydrology.

VERNAL POOLS AND VERNAL SWALES

Vernal pools are ephemeral wetlands that form in shallow depressions underlain by an impervious or restrictive soil layer near the surface, that impedes the percolation of water. Direct rainfall and sheet flow from adjacent uplands are the sources of water for vernal pools. Vernal pools pond during the wet season and become dry in late spring or early summer. Germination and growth begin with winter rains, often continuing even when inundated. The vernal pools within the Plan Area have been classified as northern hardpan vernal pools (Hanes and Stromberg 1998), and have formed on old, very acidic, iron-silica cemented hardpan soils.

Vernal pools in the Plan Area are consistent with pools on the eastern side of the proposed Mather Preserve and occur on thin, rocky soils mainly classified as Redding gravelly loam. These pools tend to be shallow and pond water for a shorter period of time, relative to pools in other parts of the proposed Mather Preserve. These pools are typically vegetated by white navarretia (*Navarretia leucocephala*) and other vernal pool plant species including Fremont's goldfields (*Lasthenia fremontii*), slender popcorn-flower (*Plagiobothrys stipitatus*), and dwarf woolly-heads (*Psilocarphus brevissimus*). There are also substantial blooms of Douglas' mesamint (*Pogogyne douglasii*) among these pools. Two special-status plant species have been documented within vernal pools in the Plan Area, these are Ahart's dwarf rush (*Juncus leiospermus* var*. ahartii*) and legenere (*Legenere limosa*). Another special-status plant species, Boggs Lake hedge-hyssop (*Gratiola heterosepala*), has been found in nearby vernal pools in the proposed Mather Preserve. Pools within the Plan Area are most similar to pools in the eastern portion of the Mather Preserve. Pools in the western part of the Mather Preserve occur on younger, deeper soils, primarily Hedge loam soils, and are inundated for longer duration than those that are typical of the Plan Area and eastern Mather Preserve and are therefore characterized by slightly different vernal pool plant assemblages and often contain iris-leaved rush (*Juncus xiphioides*) (Sacramento

County 2014). The western pools tend to be dominated by vernal pool buttercup (*Ranunculus bonariensis* var. *trisepalus*) and commonly include creeping spikerush (*Eleocharis macrostachya*), Great Valley coyote thistle (*Eryngium castrense*), and smooth goldfields (*Lasthenia glaberrima*) (Sacramento County 2014). Low manna grass (*Glyceria declinata*) is an invasive species that has infested some vernal pools in the Plan Area.

Additionally, the Plan Area contains several features that were mapped as "vernal marsh" during the 2002 delineation (WRA 2004b). These features were described as being similar to vernal pools, in that they support many of the same species, but occurring in deeper depressions with a growing season that is typically later than in vernal pools. However, because areas mapped as vernal marsh are generally characterized predominantly by vernal pool indicator plant species, support special-status species typically found only in vernal pools, and provide virtually the same habitat functions as vernal pools, these features were mapped and classified as vernal pools in the wetland delineation reverification (Sacramento County 2012) and are treated as vernal pools in this EIR.

The Plan Area also contains vernal swales, which are somewhat linear, gently sloping, concave depressions that form in topographically complex grasslands and commonly connect to vernal pools, seasonal wetlands, or water courses. Vernal swales are fed exclusively through runoff and direct precipitation and they repeatedly flood and drain throughout the rainy season causing their soils to remain saturated for long durations. Vernal swales are characterized by soil and hydrologic conditions similar to those of vernal pools and generally support many of the same plants as vernal pools. Special-status plants associated with vernal pools are less common in vernal swales although Ahart's dwarf rush can occur in vernal swales. The SSHCP considers vernal swales to be suitable habitat for all or portions of the life cycle of many SSHCP covered species typically associated with vernal pools (Sacramento County 2018).

SEASONAL WETLANDS

Seasonal wetlands are ephemeral wetlands that remain saturated for long periods during the growing season, but typically dry up by summer. Unlike vernal pools, these wetlands are typically not underlain by an impervious soil layer and the hydrologic regime is characterized primarily by saturation rather than inundation. Seasonal wetland vegetation has some similarities to the vernal pool habitat type, but differs because of differences in topography, duration of inundation, and/or plant species composition. Seasonal wetlands can form in a variety of topographic positions including shallow depressions, intermittent and ephemeral stream channels, lake edges and reservoir fluctuation zones, and floodplains. In the Plan Area, seasonal wetlands are primarily in shallow depressions (formed either because of natural topographic features or previous site disturbance) and support annual hydrophytic plant species, but generally with much less native species diversity than that of vernal pools and characterized primarily by generalist wetland species rather than vernal pool endemic or indicator species. Within the Plan Area, common plant species in the seasonal wetland community include Vasey's coyote thistle (*Eryngium vaseyi*), tall flatsedge (*Cyperus eragrostis*), common toad rush (*Juncus bufonius*), and creeping spikerush. Dominant plant species often

include nonnative plants such as Mediterranean barley (*Hordeum marinum* ssp.*gussoneanum*) and Italian ryegrass. The SSHCP does not consider seasonal wetlands to be suitable habitat for vernal pool crustaceans (Sacramento County 2018), but they have been treated as suitable habitat in this EIR.

DRAINAGE DITCHES

Various types of drainage ditches are found in the Plan Area, primarily around the military facilities in the center of the Plan Area but also at other scattered locations. Areas mapped as drainage ditches consist of linear features created either directly or indirectly by human activity and include tire ruts from off-road vehicles, areas scraped by construction equipment such as during creation of roads or building sites, and ditches intentionally created to capture runoff from the military facilities. According to the wetland delineation (WRA 2004), drainage ditches within the Plan Area meet the federal definition of wetlands because they support greater than 5 percent vegetative cover dominated by hydrophytes and exhibit wetland hydrology indicators and indicators of hydric soils or are on soils with mapped hydric soil inclusions. Hydrophytes observed in the drainage ditches include Mediterranean barley, Italian ryegrass, pale spikerush, and spotted ladysthumb (*Persicaria maculosa*).

NON-WETLAND WATERS

In addition to the wetland habitats, the Plan Area contains non-wetland waters consisting of intermittent and ephemeral stream channels.

STREAM/CREEK

There are two larger drainage features in the Plan Area which are tributaries of Todd Creek (a tributary of Morrison Creek). One crosses the Plan Area and flows east to west. The second originates from the middle of the Plan Area and flows to the west. While these channels support sporadic cover of some plant species commonly found in lacustrine, seasonal wetland, and freshwater marsh communities, they do not support at least 5 percent vegetative cover and therefore do not meet the definition of a wetland. Along channel edges and on banks, common plant species include creeping spikerush, Bermuda grass (*Cynodon dactylon*), pennyroyal (*Mentha pulegium*), Italian ryegrass, Mediterranean barley, tall flatsedge, and hyssop loosestrife; however, plant cover is sparse and discontinuous because the channels are scoured by high flow volumes during the wet season and the channel substrates are primarily composed of cobble (WRA 2004). The SSHCP considers the segment of Morrison Creek within the Plan Area to be suitable habitat for vernal pool crustaceans (Sacramento County 2018).

RIPARIAN HABITATS

Riparian habitats are transitional areas between wetland and upland habitats and are distinguished by gradients in biophysical conditions, ecological processes, and biota (Sacramento County 2018). Riparian areas connect water bodies with adjacent uplands and are found on the banks, floodplains, and terraces of rivers, streams, or lakes where flooding occurs periodically or in low landscape positions where groundwater is nearer to the surface than uplands. Riparian habitat characterized by open stands of broad-

leaved, winter-deciduous cottonwood woodland occurs in patches throughout the Plan Area.

COTTONWOOD WOODLAND

Within the Plan Area, this habitat type occurs in scattered patches mostly toward the east boundary in areas historically disturbed by mining activities and military uses. Fremont cottonwood (*Populus fremontii*) is the sole or dominant tree in the canopy of this native vegetation community. Within the Plan Area, the woodland canopy is open and the understory is variable, typically consisting of annual grassland species or scattered coyote brush shrubs. The cottonwood woodland habitat is within the historic floodplain of the American River. While riparian habitat typically occurs where soils are intermittently or seasonally flooded or saturated, within the Plan Area it occurs where groundwater is shallow enough for tree roots to reach, but not shallow enough to support herbaceous hydrophytes. There is no riparian vegetation along the Morrison Creek tributary within the Plan Area except for a few scattered cottonwood trees. Cottonwood trees throughout the cottonwood woodland in the Plan Area appear old and senescent and no cottonwood regeneration was observed in this habitat type. The cottonwood woodland habitat type is mapped and categorized as mine tailings riparian woodland in the SSHCP (Sacramento County 2018).

NATIVE AND NONNATIVE TREES

The Plan Area contains a variety of trees within the cottonwood woodland patches and isolated trees scattered throughout. An inventory of all trees measuring 4 inches or greater in diameter at breast height (DBH) rooted in or overhanging the Plan Area was conducted by Sierra Nevada Arborists in 2014. At that time 477 trees meeting that criterion were documented consisting of 455 native trees and 22 nonnative trees. The species, number of trees, and their aggregate DBH is summarized in Table BR-2.

Table BR-2: Trees in the Plan Area Meeting the Sacramento County Tree Preservation and Protection Ordinance or General Plan Policy Criteria for Protection

Species	Number of Trees with a DBH of 4 Inches or Greater	Aggregate DBH
Native Trees		
Fremont cottonwood	453	8,958 inches
Pacific willow	2	38 inches
Nonnative Trees		
Black locust	2	29 inches
Brazilian pepper	8	179 inches
Elm	12	239 inches

Because the tree inventory was conducted in 2014, there may be more trees that have attained a DBH of 4 inches or greater and some trees may have died, including as a result of a fire that burned a portion of the Plan Area near Zinfandel Drive and Douglas

Road in 2017, so these numbers may differ slightly for the baseline year of 2017 but would be very similar and the inventory provides a good estimation of the number of trees meeting the County's tree protection criteria. For purposes of this EIR, it is assumed that all trees with a DBH of 4 inches or greater in 2014 have attained a DBH of 6 inches or greater.

SPECIAL-STATUS SPECIES

Special-status species are plants and animals that are legally protected or otherwise considered sensitive by federal, state, or local resource conservation agencies. In this document, special-status species are defined as:

- species listed or proposed for listing as threatened, rare, or endangered under the federal ESA or California Endangered Species Act (CESA);
- species considered as candidates for listing under the ESA or CESA;
- wildlife species identified by CDFW as Species of Special Concern;
- animals fully protected under the California Fish and Game Code;
- species covered in the SSHCP; and
- plants considered by **CNPS** ~~CDFW~~ to be "rare, threatened, or endangered in California" (California Rare Plant Ranks [CRPR] of 1A, presumed extinct in California and not known to occur elsewhere; 1B, considered rare or endangered in California and elsewhere; 2A, presumed extinct in California, but more common elsewhere and 2B, considered rare or endangered in California but more common elsewhere).

A list of special-status plant and wildlife species that are known or have the potential to occur in the Plan Area was compiled based on review of background reports, previous studies conducted in the Plan Area and the larger Mather Field Specific Plan Area, as listed previously; an official species list obtained from the USFWS Information for Planning and Consultation (IPaC) system (USFWS 2018); and the California Natural Diversity Database (CNDDB) Rarefind program and California Native Plant Society (CNPS) Inventory records of previously documented occurrences of special-status species in the Carmichael, Buffalo Creek, Florin, Rio Linda, Citrus Heights, Folsom, Folsom SE, Sacramento East, Elk Grove, Sloughouse, Clarksville, and Carbondale California 7.5-minute quadrangles (CNDDB 2018, CNPS 2018). Plan Area habitats were evaluated for their suitability to support special-status species. Table BR-3 summarizes the regulatory status, suitable habitat, and potential for project to affect special-status species known or with potential to occur in the Plan Area. Potentially affected species are shown in bold in Table BR-3. Plate BR- 2 shows the locations of reported special-status species observations in the Plan Area, including those recorded during project-specific surveys as well as CNDDB records.

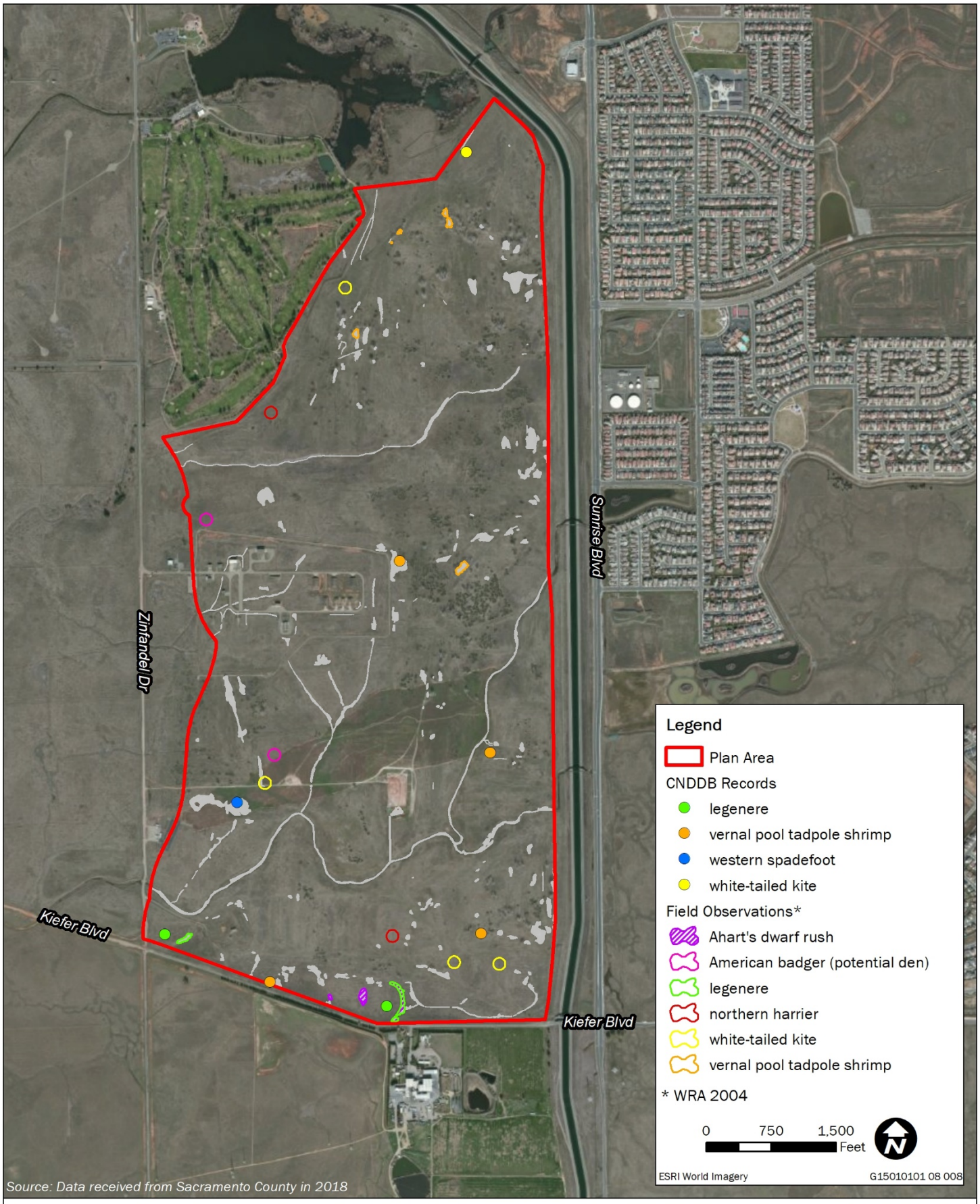


Plate BR-2: Field Observations

ASCENT ENVIRONMENTAL

Table BR-3: List of Potentially Affected Species and Habitats

Species	Status	Suitable Habitat	Potential for Project to Affect
Federally Listed Species			
Plants			
Orcuttia tenuis Slender Orcutt grass	FT, CE, CRPR 1B.1	Small annual grass found in vernal pools in valley and foothill grasslands. Blooms: May-September. Elevation: 100 to 5,750 ft.	May affect. Suitable habitat is present within the Plan Area, although no known occurrences have been recorded within the Plan Area. The nearest recorded occurrence is within one mile of the Plan Area. Designated critical habitat for this species is located adjacent to, but outside the Plan Area.
Orcuttia viscida Sacramento Orcutt grass	FE, CE, CRPR 1B.1	Small annual grass found in vernal pools in valley and foothill grasslands. Blooms: May-June. Elevation: 100 to 350 ft.	May affect. Suitable habitat is present within the Plan Area, although no known occurrences have been recorded within the Plan Area. The nearest recorded occurrence is within one mile of the Plan Area. Designated critical habitat for this species is located adjacent to, but outside the Plan Area.
Invertebrates			
Branchinecta conservatio Conservancy fairy shrimp	FE	Occurs in large, turbid vernal pools in the northern two-thirds of the Central Valley. Pools are typically astatic and are formed in old, braided alluvium. Requires an average of 49 days of continual inundation to mature (Eriksen and Belk 1999:88-89)	Not likely to affect. Currently this species does not occur in Sacramento County (USFWS 2012).
Branchinecta lynchi Vernal pool fairy shrimp	FT	Occurs in vernal pools, seasonally ponded areas within vernal swales, rock outcrop ephemeral pools, playas and alkali flats from Shasta County through most of the length of the Central Valley to Tulare County. Pools are grass or mud bottomed, with clear to tea-colored water, and are often in basalt flow depression pools in grasslands	May affect. Suitable habitat is present in the Plan Area and the species has been recorded within the Mather Preserve area west of the Plan Area and north of the Plan Area near Mather Lake. Designated critical habitat for this species is located adjacent to, but outside the Plan Area.
Desmocerus californicus dimorphus Valley elderberry	FT	Breeds and forages exclusively on elderberry shrubs. Typically associated with riparian forest, riparian woodland, elderberry	May affect. There are numerous elderberry shrubs present in the Plan Area. The nearest recorded occurrence is 1.5 miles north of

Species	Status	Suitable Habitat	Potential for Project to Affect
longhorn beetle		savanna, and other Central Valley habitats. Occurs only in the Central Valley of California. Prefers to lay eggs in elderberry stems 2–8 inches in diameter; some preference shown for "stressed" elderberry shrubs.	the Plan Area.
Lepidurus packardi Vernal pool tadpole shrimp	FE	Occurs in vernal pools containing clear to highly turbid water.	May affect. Suitable habitat is present in the Plan Area and the species has been recorded from numerous (± 60) vernal pools within the Plan Area and adjacent Mather Preserve. Designated critical habitat for this species is located adjacent to, but outside the Plan Area.
Fish			
Hypomesus transpacificus Delta smelt	FT, CT	Open surface waters in the Sacramento/San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Found in Delta estuaries with dense aquatic vegetation and low occurrence of predators.	No effect. No suitable habitat within the Plan Area.
Oncorhynchus mykiss Central Valley steelhead	FT	This evolutionary significant unit (ESU) enters the Sacramento and San Joaquin Rivers and their tributaries from July to May; spawning from December to April. Young move to rearing areas in and through the Sacramento and San Joaquin Rivers, Delta, and San Pablo and San Francisco Bays.	No effect. No suitable habitat within the Plan Area.
Oncorhynchus tshawytscha Central Valley spring-run Chinook salmon	FT, CT	This ESU enters the Sacramento and San Joaquin Rivers and tributaries March to July; spawning from late August to early October. Young move to rearing areas in and through the Sacramento and San Joaquin Rivers, Delta, and San Pablo and San Francisco Bays.	No effect. No suitable habitat within the Plan Area.
Oncorhynchus tshawytscha Sacramento River winter- run Chinook salmon	FE, CE	This ESU enters the Sacramento River December to May; spawning peaks May and June. Upstream movement occurs more quickly than in spring run population. Young move to	No effect. No suitable habitat within the Plan Area.

Species	Status	Suitable Habitat	Potential for Project to Affect
		rearing areas in and through the Sacramento River, Delta, and San Pablo and San Francisco.	
Amphibians			
Ambystoma californiense California tiger salamander	FT, CSC	Annual grassland and grassy understory of valley-foothill hardwood habitats in central and northern California. Needs underground refuges and vernal pools or other seasonal water sources.	Not likely to affect. Suitable habitat exists in the Plan Area, although populations have not been documented in this area and surveys of pools have not detected larvae of this species. The nearest recorded occurrence is 12.5 miles southeast of the Plan Area. Extensive surveys in Sacramento County have not detected this species north of the Cosumnes River (69 FR 47212, August 4, 2004)
Rana draytonii California red-legged frog	FT, CSC	Breeds in slow moving streams, ponds, and marshes with emergent vegetation and an absence or low occurrence of predators.	Not likely to affect. Potential habitat for this species (perennial streams, ponds, and Mather Lake) is populated by exotic predators, such as bullfrogs and centrarchids. There are no known occurrences in the Plan Area vicinity and this species is presumed extirpated from the valley floor.
Reptiles			
Thamnophis gigas Giant garter snake	FT, CT	Found primarily in marshes, sloughs, drainage canals, and irrigation ditches, especially around rice fields, and occasionally in slow-moving creeks in California's interior.	Not likely to affect. The Plan Area is located outside of the extant range of this species. Sacramento County populations are known only from the American Basin, Cosumnes-Mokelumne Basin, and Delta Basin and the nearest recorded occurrence is approximately 10 miles to the southwest (USFWS 2017a) and there is no feasible dispersal corridor between known breeding populations and the Plan Area.
Birds			
Coccyzus americanus occidentalis **Western yellow-billed cuckoo**	**FT, CE**	**Nests in large blocks of deciduous riparian thickets or forests with dense, low-level or understory foliage adjacent to slow-moving watercourses, backwaters along broad, lower**	**Not likely to affect. No suitable habitat within the Plan Area. The cottonwoods in the project area lack understory and structure.**

Species	Status	Suitable Habitat	Potential for Project to Affect
		floodplains of larger river systems. Willow and cottonwood are almost always a component of the vegetation. In the Sacramento Valley, also utilizes adjacent walnut orchards.	
Aquila chrysaetos Golden eagle	BEPA, CFP	Forages in open terrain such as grasslands, deserts, savannahs, and early successional stages of forest and shrub habitats. Nests in rugged, open habitats with canyons and escarpments, typically on cliffs and rock outcroppings; however, it will also nest in large trees within open area, including oaks, sycamores, redwoods, pines, and eucalyptus, overlooking open hunting habitat.	Not likely to affect. This species has been observed foraging within the Plan Area along Zinfandel Drive; however, it is unlikely to nest in the area. Golden eagles migrate through and winter in the Central Valley, but the valley floor is not within the core breeding range and typical habitat is in rolling foothills, mountains, and deserts. Migrating and nonbreeding individuals could forage in grassland habitat in the plan area.
State/Local Protected Species			
Plants			
Cuscuta obtusiflora* var. *glandulosa **Peruvian dodder**	**CRPR 2B.2**	**Annual parasitic vine on herbs. Found in marsh habitats. Blooms July to October. Elevation: 50 to 1,000 ft.**	**Not likely to affect. Suitable habitat is present; however, there is only one record of this species from Sacramento County and it is unverified (i.e., the identity is uncertain). Other known occurrences are from Butte, Los Angeles, Merced, and Sonoma counties. Therefore, it is unlikely this species occurs in the Plan Area.**
Downingia pusilla **dwarf downingia**	**CRPR 2B.2**	**Annual herb found in relatively small and shallow vernal pools and swales in annual grasslands; below 1,500 ft. elevation. Blooms March–May.**	**May Affect. While not known in the area, the SSHCP presumes the range of Dwarf Downingia to include all vernal habitats**
Gratiola heterosepala Boggs Lake hedge-hyssop	CE, CRPR 1B.2	Annual herb found along the margins of marshes and swamps and in vernal pools with clay soil. Blooms April-August. Elevation: 30 to 7,800 ft.	May affect. Suitable habitat is present within the Plan Area, and the species has been recorded from several vernal pools on adjacent lands.
Hibiscus lasiocarpus var. occidentalis	**CRPR 1B.1**	**Perennial herb found at the margins of freshwater marshes, wet riverbanks, and on low,**	**Not likely to affect. Marsh habitat is not present and the specific habitat conditions this**

Species	Status	Suitable Habitat	Potential for Project to Affect
Woolly rose-mallow		**peat islands in sloughs of the Delta. Can also occur on riprap and levees of rivers and sloughs. Blooms June to September. Elevation: 0 to 320 feet.**	**species is typically associated with are not found in the Plan Area.**
Juglans hinsdii **Northern California Black Walnut**	**CRPR 1B.1**	**Deciduous tree associated with riparian areas.**	**No Effect. There are no California black walnut trees on-site.**
Juncus leiospermus var. ahartii Ahart's dwarf rush	CRPR 1B.2	Annual herb found along vernal pool margins and vernal swales. Blooms March-May. Elevation: 100 to 750 ft.	May affect. Suitable habitat is present within the Plan Area, and the species has been recorded from several vernal pools within and adjacent to the Plan Area. Species was reported in the Plan Area by WRA in 2002, but not relocated in the Plan Area during focused surveys conducted by Carol Witham in 2006, 2007, 2008.
Legenere limosa Legenere	CRPR 1B.1	Annual herb found in vernal pools. Blooms April-June. Elevation: 0 to 2,900 ft.	May affect. Suitable habitat is present within the Plan Area, and the species has been recorded in vernal pools in the southern portion of the Plan Area and on adjacent lands in the Mather Preserve.
Lepidium latipes var. heckardii **Heckard's pepper-grass**	**CRPR 2B.2**	**Grows on alkaline flats and in alkaline grasslands along the edges of vernal pools**	**Not Likely to Affect. The Mather Vernal Pools are not know as an alkaline system. The nearest occurance is west of I-5.**
Navarretia myersii ssp. Myesrii **pincussion navarretia**	**CRPR 1B.1 SSHCP**	**Annual herb found in vernal pools. Blooms in May. Elevation: 65 to 750 ft.**	**May affect. Suitable wetland habitat is present but the species is not known in the area.**
Sagittaria sanfordii Sanford's arrowhead	CRPR 1B.2	Perennial, rhizomatous, emergent herb found in shallow freshwater marshes and swamps, and various perennial waterways or ponds. Blooms: May-October. Elevation: 0 to 2,000 ft.	Not likely to affect. Although this species has been observed growing along a perennially wet drainage south of Mather air strip in the adjacent Mather Preserve lands, there is no suitable habitat in the Plan Area.
Trifolium hydrophilum	CRPR 1B.2	Annual herb found in mesic, alkaline sites in valley and foothill grasslands, vernal pools, and salt	Not likely to affect. Alkaline soils are not present in the Plan Area; therefore, habitat is unsuitable for

Species	Status	Suitable Habitat	Potential for Project to Affect
Saline clover		marshes. Blooms April-June. Elevation 0 to 1,000 ft.	this species.
Invertebrates			
Branchinecta mesovallensis Midvalley fairy shrimp	SSHCP	Vernal pools and seasonally ponded areas within vernal swales that hold water for a minimum of 18 days; typically grass or bottomed with clear to tea-colored water.	May affect. Suitable habitat is present in the Plan Area and the species has been recorded west and north of the Plan Area within Mather Field.
*Hydrochara ricksecker*i Ricksecker's scavenger beetle	SSHCP	Vernal pools, vernal swales, and seasonal wetlands that hold water for a minimum of 18 days.	May affect. Suitable habitat is present in the Plan Area and the species has been recorded west of the Plan Area in Mather Field.
Amphibians			
Spea hammondii Western spadefoot	CSC	Occurs seasonally in grasslands, prairies, chaparral, and woodlands, in and around wet sites. Breeds in shallow, temporary pools formed by winter rains. Takes refuge in burrows.	May affect. Suitable habitat is present in the Plan Area.
Reptiles			
Emys marmorata Western pond turtle	CSC	Ponds, marshes, rivers, streams, and irrigation ditches with aquatic vegetation. Requires basking sites and suitable upland habitat for egg-laying. Nest sites most often characterized as having gentle slopes (<15%) with little vegetation or sandy banks.	May affect. Suitable habitat is present in the Plan Area and the species has been recorded at Mather Lake approximately 0.25 mile north of the Plan Area.
Birds			
Accipiter cooperi Cooper's hawk	SSHCP	Nests and forages in a variety of woodland and forest habitats and urban areas, but generally in stands with mature trees and dense canopy closure. In the Central Valley, strongly associated with live oak woodland.	May affect. Suitable habitat is present in the cottonwood woodland in the Plan Area and this species has been documented nesting at Mather Lake.
Agelaius tricolor Tricolored blackbird	CT	Forages in agricultural lands and grasslands; nests in colonies in marshes, riparian scrub, and other areas that support cattails, tules, or dense thickets of shrubs or herbs. Requires open water and protected nesting substrate,	May affect. Suitable nesting habitat is present near the Plan Area. The species has been observed south of Mather Lake and along the southeastern border of the Plan Area. There is no suitable nesting habitat in the

Species	Status	Suitable Habitat	Potential for Project to Affect
		such as flooded, spiny, or thorny vegetation.	Plan Area, but species could nest at Mather Lake.
Asio flammeus Short-eared owl	CSC	Require open country that supports concentrations of rodents and herbaceous cover sufficient to conceal their ground nests from predators. Suitable habitats may include salt- and freshwater marshes, irrigated alfalfa or grain fields, and ungrazed grasslands and old pastures.	May affect. Suitable nesting habitat is present within the Plan Area, and species has been documented adjacent to the Plan Area within Mather Field.
Athene cunicularia Western burrowing owl	CSC	Found in open grasslands with low vegetation, golf courses, and disturbed/ruderal habitat in urban areas.	May affect. Suitable nesting habitat is present within the Plan Area, and burrowing owls are known to nest adjacent to the Plan Area within Mather Field.
***Buteo regalis* Ferruginous hawk**	**SSHCP**	**Frequents open grasslands, sagebrush flats, desert scrub, low foothills and surrounding valleys.**	**May affect. Site contains winter foraging habitat.**
Buteo swainsoni Swainson's hawk	CT	Forages in grasslands and agricultural fields and nests in mature trees in riparian corridors or isolated trees.	May affect. Suitable nesting habitat is present within the Plan Area, and a pair visiting a nest tree and defending territory was observed in the Plan Area from April 29 to June 13, 2014 (Mather Stewardship Network 2014). The species has been observed foraging over grasslands within the Plan Area.
Circus cyaneus Northern harrier	CSC	Forages in a variety of open grassland, wetland, and agricultural habitats; nests in marshy meadows, wet and lightly grazed pastures, and freshwater and brackish marshes; and dry upland habitats, such as grassland, cropland, and drained marshland.	May affect. Suitable nesting habitat is present within the Plan Area, although no nesting occurrences have been recorded within the Plan Area. The species has been observed foraging and perching throughout the Plan Area.
Elanus leucurus White-tailed kite	CFP	Forages in open grasslands and agricultural fields and marshes. Nests in mature trees in riparian zones, oak woodlands, or isolated trees within foraging habitat.	May affect. Suitable nesting habitat is present within the Plan Area, and the species has been recorded nesting at Mather Lake. The species has been observed foraging throughout the Plan Area.
Lanius	CSC	Breed mainly in shrublands or	May affect. Suitable nesting and

Species	Status	Suitable Habitat	Potential for Project to Affect
ludovicianus Loggerhead shrike		open woodlands with a fair amount of grass cover and areas of bare ground. Require tall shrubs, trees, fences or power lines for hunting perches; open areas of short grasses, forbs, or bare ground for hunting; and large shrubs or trees for nest placement.	foraging habitat within Plan Area. The species has been observed foraging and perching throughout the adjacent Mather Field and was observed in the Plan Area regularly from January to May 2014 (Mather Stewardship Network 2014).
Melospiza melodia **Song sparrow (Modesto population)**	**CSC**	**Nests and forages primarily in emergent marsh, riparian scrub, and early successional riparian forest habitats in the north-central portion of the Central Valley; infrequently in mature riparian forest and sparsely vegetated ditches and levees.**	**Not likely to affect. Suitable nesting and forging habitat is marginal due to lack of defined riparian structure associated with on-site cottonwoods.**
Riparia riparia Bank swallow	CT	Banks of rivers, creeks, lakes, and seashores; nests in excavated dirt tunnels near the top of steep banks.	No effect. No suitable nesting habitat within the Plan Area.
Xanthocephalus xanthocephalus **Yellow-headed blackbird**	**CSC**	**Nests in marshes with tall, dense emergent vegetation, most commonly at the edges of lakes, reservoirs, or large ponds with relatively deep water. Forages in freshwater marshes, and sometimes in nearby open fields, preferably with moist ground.**	**Not likely to affect. Suitable nesting and forging habitat is marginal due to lack of defined riparian structure and marshes with dense vegetation.**
Mammals			
Antrozous pallidus **Pallid bat**	**CSC**	**Deserts, grasslands, shrublands, woodlands, and forests. Most common in open, dry habitats with rocky areas for roosting. Roosts in rock crevices, oak hollows, tree bark, bridges, or buildings.**	**May affect. Structures suitable for roosting may be present in the Plan Area. There is also some potential for this species to roost in onsite trees.**
Lasiurus blossevilli **Western red bat**	**CSC**	**Roosts primarily in dense tree foliage, especially in riparian habitats, particularly mature stands of cottonwood and sycamore, and prefer wide, well-developed riparian corridors or orchards. Prefers habitat edges and mosaics with trees that are protected from above and open below and**	**May affect. Trees in the Plan Area may provide suitable habitat for roosting although riparian habitat this species is typically associated with is not found in the Plan Area.**

Species	Status	Suitable Habitat	Potential for Project to Affect
		open areas for foraging, including grasslands, shrublands, and open woodlands.	
Taxidea taxus American badger	CSC	Found in dry, open grasslands, fields, and pastures.	May affect. Suitable habitat is present within the Plan Area. Two potential dens have been documented in the Plan Area, and one on adjacent lands in Mather Preserve.

STATUS CODES:

Federal

FE = Formally listed as Endangered under ESA

FT = Formally listed as Threatened under ESA

BEPA = Protected under Bald and Golden Eagle Protection Act

State

CE = Formally listed as Endangered under CESA

CT = Formally listed as Threatened under CESA

CFP = Fully Protected under California Fish and Game Code

CSC = California Species of Special Concern (no formal protection other than CEQA consideration)

California Rare Plant Rank (CRPR)

CRPR 1B = Plants rare, threatened, or endangered in California and elsewhere

CRPR 2B = Plants rare, threatened, or endangered in California, but more common elsewhere

CRPR Extensions

0.1 = Seriously endangered in California

0.2 = Fairly endangered in California

SSHCP = Species that are covered in the SSHCP and considered by Sacramento County to meet the definition of rare as described in Section 15380 of the State CEQA Guidelines

Source: CDFW 2018, CNPS 2018, USFWS 2018, County of Sacramento 2018, Sacramento County 2014, Mather Stewardship Network 2014, WRA 2004

The Plan Area lies within the Southeastern Sacramento Valley vernal pool region, which supports the highest concentration of documented vernal pool tadpole shrimp occurrences (35 percent of the CNDDB records for this species). Sacramento County supports the highest percentage (28 percent) of vernal pool tadpole shrimp occurrences of any county in California (USFWS 2005). The Plan Area is adjacent to, but outside of, the Mather Core Area (Plate BR-3) identified by the USFWS in the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (recovery plan) (USFWS 2005). Core areas are those areas USFWS has identified as essential to recover at least one of the listed species addressed in the recovery plan. The Mather Core Area has been determined to be vital not only to the recovery of vernal pool tadpole shrimp and Sacramento Orcutt grass, but to preventing the extinction or irreversible decline of these species. Recovery plan goals for the Mather Core Area include protecting 95 percent of suitable habitat for vernal pool tadpole shrimp, slender Orcutt grass, and Sacramento Orcutt grass, and protecting 85 percent of suitable habitat for vernal pool fairy shrimp. USFWS estimates that approximately 74 percent of the vernal pool tadpole shrimp occurrences in Southeastern Sacramento Valley are in the Mather Core Area. Most of the Mather Preserve, outside of the Plan Area, lies within the Mather Core Area.

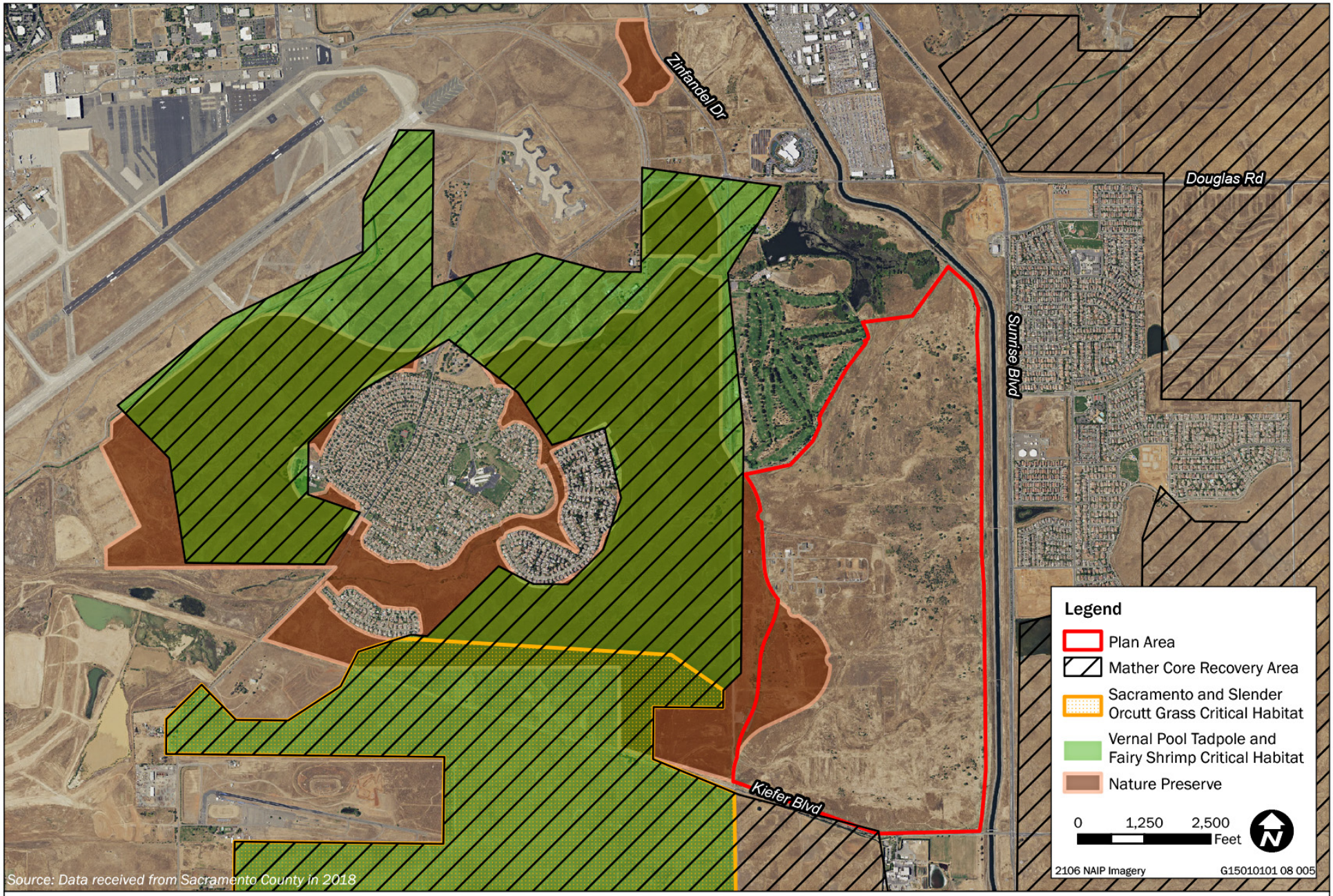


Plate BR-3: Critical Habitat

ASCENT ENVIRONMENTAL

CRITICAL HABITAT

Critical habitat consists of geographical areas that contain the physical or biological features that are essential to the conservation of species listed as threatened or endangered under ESA, and that may require special management or protection. USFWS has designated critical habitat for vernal pool fairy shrimp, vernal pool tadpole shrimp, slender Orcutt grass, and Sacramento Orcutt grass within Mather Field Specific Plan Area, but west of the Mather South Plan Area. The Mather South Plan Area is not located within designated critical habitat for these or any other species (Plate BR-3). The Mather Preserve, outside of the Plan Area, has been designed to protect the majority of critical habitat within Mather Field.

REGULATORY SETTING

FEDERAL

The two major federal laws regulating impacts to wetlands, waters, and plant, fish, and wildlife species are the Clean Water Act (Sections 404 and 401) and ESA (Sections 7, 9, and 10). The Corps is responsible for administering Section 404 of the CWA, with EPA serving in an oversight capacity. The USFWS (with jurisdiction over plants, wildlife, and resident fish) and the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA NMFS, with jurisdiction over anadromous fish and marine fish and mammals) are responsible for administering ESA, Sections 7, 9, and 10. The regional water quality control board (RWQCB) is the regulatory agency that enforces Section 401 of the CWA.

CLEAN WATER ACT

SECTION 404

Section 404 of the federal CWA requires a project applicant to obtain a permit from USACE before engaging in any activity that involves any discharge of dredged or fill material into waters of the U.S., including wetlands. Fill material is material placed in waters of the U.S. where the material has the effect of replacing any portion of a water of the U.S. with dry land or changing the bottom elevation of any portion of a water of the U.S. Waters of the U.S. include navigable waters of the U.S.; interstate waters; all other waters where the use, degradation, or destruction of the waters could affect interstate or foreign commerce; tributaries to any of these waters, and wetlands adjacent to these waters. Wetlands are defined as those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Potentially jurisdictional wetlands must meet three wetland delineation criteria: hydrophytic vegetation, hydric soil types, and wetland hydrology. Wetlands that meet the delineation criteria may be jurisdictional under Section 404 of CWA pending USACE and EPA review.

As part of the review of a project, USACE must ensure compliance with applicable federal laws, including EPA Section 404(b)(1) Guidelines. USACE regulations require that impacts to waters of the U.S. are avoided and minimized to the maximum extent practicable, and that unavoidable impacts are compensated (33 CFR 320.4(r).

SECTION 401 WATER QUALITY CERTIFICATION

Under CWA Section 401, applicants for a federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the U.S. must apply for water quality certification from the state. Therefore, all projects with a federal component that may affect state water quality (including projects that require federal agency approval, such as a Section 404 permit) must comply with CWA Section 401. As part of the permitting process under Section 404, applicants would be required to apply for water quality certification from the Central Valley RWQCB.

FEDERAL ENDANGERED SPECIES ACT

Under the ESA of 1973, the Secretary of the Interior and the Secretary of Commerce jointly have the authority to list a species as endangered or threatened. ESA defines "endangered" species as any species in danger of extinction throughout all or a significant portion of its range. A "threatened" species is any species that is likely to become an "endangered" species, within the foreseeable future, throughout all or a significant portion of its range. "Candidate" species are those that are undergoing status review that has been announced in the Federal Register regardless of whether a petition for listing has been filed. "Proposed" species are those candidate species that USFWS has found warrant listing as endangered or threatened and were officially proposed as such in a Federal Register notice.

Section 9 of ESA prohibits the "take" of federally endangered or threatened wildlife species. To "take" is defined by ESA (Section 2[19]) to mean, "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct." Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns (50 CFR §17.3). Harass is defined as actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns (50 CFR §17.3).

All government agencies must review their actions and determine if a "may affect" situation occurs with respect to a federally listed or candidate species. If the agency makes a "may affect" determination, it is then required to formally consult with National Oceanic and Atmospheric Administration, Fisheries or the USFWS.

For federal agencies, the consultation is conducted under Section 7 of ESA. The agency submits a Biological Assessment to USFWS that evaluates the potential adverse effects to federally listed species. USFWS then prepares a BO that addresses the requirements that must be followed to avoid, minimize, and compensate for impacts to federally listed species and their habitats.

For projects that do not involve a federal action, ESA compliance is obtained through Section 10 for projects that will adversely affect (result in take of) a federally listed species. Section 10 compliance requires preparation of a habitat conservation plan by the project proponent and results in the issuance of an Incidental Take Permit from USFWS and/or NMFS. The purpose of the habitat conservation planning process associated with the permit is to ensure there is adequate minimization and mitigation of the effects of the authorized incidental take.

STATE

The three most important state laws regulating wildlife species, streams, and wetlands are the California Endangered Species Act (Section 2081), the Fish and Game code, and the Porter-Cologne Water Quality Control Act. The first two are administered by CDFW, and the latter is administered by the Regional Water Quality Control Board (Regional Water Board).

CALIFORNIA ENDANGERED SPECIES ACT

CESA (established in Fish and Game Code Section 2050) generally parallels the main provisions of the federal ESA and is administered by CDFW for most terrestrial species, with assistance from NMFS for most freshwater fishery species. CESA prohibits the taking of state listed species except as otherwise provided by state law. Unlike the federal ESA, CESA extends the take prohibitions to not only listed species but also for species petitioned for listing or candidate species. “Take” is defined in Section 86 of the Fish and Game Code as “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill.” Section 2081 of CESA identifies the following criteria that must be met for Fish and Game to authorize the take of endangered, threatened or candidate species:

- The taking of a listed or candidate species can be minimized and fully mitigated.
- The take would not jeopardize the continued existence of the species.
- Authorization for take must be based on the best scientific material that is reasonably available, and that due consideration will be given to the species’ ability to survive and reproduce.

CALIFORNIA FISH AND GAME CODE

ANIMALS AND PLANTS

Section 3503 makes it unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by the Fish and Game Code or any regulation made pursuant thereto. Section 3503.5 makes it unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by the Fish and Game Code or any regulation adopted pursuant thereto. Sections 1908, 3511, 4700, 5050 state that Fully Protected plant and animals or parts thereof may not be taken or possessed at any time. **Additionally, Section 4150 defines nongame mammals and states they may not be taken or possessed except as provided elsewhere in the Code and**

Sections 2080.1 and 2081 require an incidental take permit or consistency determination if the project will have the potential for take of a State-listed species.

SURFACE WATERS

Fish and Game Code Section 1602 requires any person, state or local governmental agency, or public utility to notify CDFW before beginning any activity that will do one or more of the following: 1) substantially obstruct or divert the natural flow of a river, stream, or lake; 2) substantially change or use any material from the bed, channel, or bank of a river, stream, or lake; or 3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into a river, stream, or lake. Fish and Game Code Section 1602 applies to all perennial, intermittent, and ephemeral rivers, streams, and lakes in the state.

Notification is generally required for any project that will take place in the vicinity of a river, stream, or lake. CDFW will determine whether a Lake or Streambed Alteration Agreement is required for the activity. An agreement will be required if the activity could substantially adversely affect an existing fish and wildlife resource. If an agreement is required, it will be prepared by CDFW in coordination with the applicant. The agreement will include measures, as necessary, to protect fish and wildlife resources while conducting the project.

PORTER-COLOGNE WATER QUALITY CONTROL ACT

This act (State Water Code Section 13020) mandates that all waters of the state be protected, that activities and factors affecting water quality be regulated to attain the highest water quality "within reason," and that the state be prepared to exercise its power and jurisdiction to protect water quality from degradation. Waters of the state are defined as any surface or groundwater within the boundaries of the state. The RWQCB issues permits, with varying conditions, to allow the discharge of dredge or fill material or a waiver of waste discharge into waters of the state. Any "isolated" waters not subject to CWA are still subject to the Porter-Cologne Water Quality Control Act, and still require mitigation pursuant to the state's no net-loss policy. In such a case, fill of isolated wetlands would be permitted through Waste Discharge Requirements rather than a Section 401 Water Quality Certification.

LOCAL

SACRAMENTO COUNTY GENERAL PLAN

The Sacramento County General Plan contains numerous goals, policies, concepts and strategies to protect and/or preserve biological resources. The following provides the applicable biological resources policies.

CO-58. Ensure no net loss of wetlands, riparian woodlands, and oak woodlands.

CO-59. Ensure mitigation occurs for any loss of or modification to the following types of acreage and habitat function:

- vernal pools,
- wetlands,
- riparian,
- native vegetative habitat, and
- special status species habitat.

CO-60. Mitigation should be directed to lands identified on the Open Space Vision Diagram and associated component maps (please refer to the Open Space Element).

CO-61. Mitigation should be consistent with Sacramento County-adopted habitat conservation plans.

CO-62. Permanently protect land required as mitigation.

CO-64. Consistent with overall land use policies, the County shall support and facilitate the creation and biological enhancement of large natural preserves or wildlife refuges by other government entities or by private individuals or organizations.

CO-65. Create a network of preserves linked by wildlife corridors of sufficient size to facilitate the movement of species.

CO-66. Mitigation sites shall have a monitoring and management program including an adaptive management component including an established funding mechanism. The programs shall be consistent with Habitat Conservation Plans that have been adopted or are in draft format.

CO-67. Preserves and conservation areas should have an established funding mechanism, and where needed, an acquisition strategy for its operation and management in perpetuity. This includes existing preserves such as the American River Parkway, Dry Creek Parkway, Cosumnes River Preserve and other plans in progress for riparian areas like Laguna Creek.

CO-68. Preserves shall be planned and managed to the extent feasible so as to avoid conflicts with adjacent agricultural activities (Please also refer to the Agricultural Element).

CO-69. Avoid, to the extent possible, the placement of new major infrastructure through preserves unless located along disturbed areas, such as existing roadways.

CO-70. Community Plans, Specific Plans, Master Plans and development projects shall:

- include the location, extent, proximity and diversity of existing natural habitats and special status species in order to determine potential impacts, necessary mitigation and opportunities for preservation and restoration.
- be reviewed for the potential to identify nondevelopment areas and establish preserves, mitigation banks and restore natural habitats, including those for special status species, considering effects on vernal pools, groundwater, flooding, and proposed fill or removal of wetland habitat.
- be reviewed for applicability of protection zones identified in this Element, including the Floodplain Protection Zone, Stream Corridor Ordinance, Cosumnes River Protection Combining Zone and the Laguna Creek Combining Zone.

CO-71. Development design shall help protect natural resources by:

- Minimizing total built development in the floodplain, while designing areas of less frequent use that can support inundation to be permitted in the floodplain,
- Ensuring development adjacent to stream corridors and vernal pools provide, where physically reasonable, a public street paralleling at least one side of the corridor with vertical curbs, gutters, foot path, street lighting, and post and cable barriers to prevent vehicular entry.
- Projects adjacent to rivers and streams shall integrate amenities, such as trail connectivity, that will serve as benefits to the community and ecological function.
- Siting of wetlands near residential and commercial areas should consider appropriate measures to minimize potential for mosquito habitation.
- Development adjacent to stream corridors and vernal pools shall be designed in such a manner as to prevent unauthorized vehicular entry into protected areas.

CO-75. Maintain viable populations of special-status species through the protection of habitat in preserves and linked with natural wildlife corridors.

CO-78. Plans for urban development and flood control shall incorporate habitat corridors linking habitat sites for special status species. (Please also refer to the Open Space Element for related policies.)

CO-83. Preserve a representative portion of vernal pool resources across their range by protecting vernal pools on various geologic landforms, vernal pools that vary in depth and size, and vernal pool complexes of varying densities; in order to maintain the ecological integrity of a vernal pool ecosystem.

CO-84. Ensure that vernal pool preserves are large enough to protect vernal pool ecosystems that provide intact watersheds and an adequate buffer, have sufficient number and extent of pools to support adequate species populations and a range of vernal pool types.

CO-85. Utilize proper vernal pool restoration techniques as approved by United States Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDF&G) and the Army Corps of Engineers (CORPS).

CO-86. Limit land uses within established preserves to activities deemed compatible with maintenance of the vernal pool resource, which may include ranching, grazing, scientific study and education.

CO-91. Discourage introductions of invasive non-native aquatic plants and animals.

CO-134. Maintain and establish a diversity of native vegetative species in Sacramento County.

CO-135. Protect the ecological integrity of California Prairie habitat.

CO-138. Protect and preserve non-oak native trees along riparian areas if used by Swainson's Hawk, as well as landmark and native oak trees measuring a minimum of 6 inches in diameter or 10 inches aggregate for multi-trunk trees at 4.5 feet above ground.

CO-139. Native trees other than oaks, which cannot be protected through development, shall be replaced with in-kind species in accordance with established tree planning specifications, the combined diameter of which shall equal the combined diameter of the trees removed.

CO-140. For projects involving native oak woodlands, oak savannah, or mixed riparian areas, ensure mitigation through either of the following methods: An adopted habitat conservation plan.

- Ensure no net loss of canopy area through a combination of the following: (1) preserving the main, central portions of consolidated and isolated groves constituting the existing canopy and (2) provide an area on-site to mitigate any canopy lost. Native oak mitigation area must be a contiguous area on-site which is equal to the size of canopy area lost and shall be adjacent to existing oak canopy to ensure opportunities for regeneration.
- Removal of native oaks shall be compensated with native oak species with a minimum of a one to one DBH replacement.
- A provision for a comparable on-site area for the propagation of oak trees may substitute for replacement tree planting requirements at the discretion of the County Tree Coordinator when removal of a mature oak tree is necessary.

- If the Plan Area is not capable of supporting all the required replacement trees, a sum equivalent to the replacement cost of the number of trees that cannot be accommodated may be paid to the County's Tree Preservation Fund or another appropriate tree preservation fund.
- If on-site mitigation is not possible given site limitation, off-site mitigation may be considered. Such a mitigation area must meet all of the following criteria to preserve, enhance, and maintain a natural woodland habitat in perpetuity, preferably by transfer of title to an appropriate public entity.
    - Equal or greater in area to the total area that is included within a radius of 30 feet of the dripline of all trees to be removed;
    - Adjacent to protected stream corridor or other preserved natural areas;
    - Supports a significant number of native broadleaf trees; and
    - Offers good potential for continued regeneration of an integrated woodland community.

CO-145. Removal of nonnative tree canopy for development shall be mitigated by creation of new tree canopy equivalent to the acreage of nonnative tree canopy removed. New tree canopy acreage shall be calculated using the 15-year shade cover values for tree species.

CO-146. If new tree canopy cannot be created onsite to mitigate for the nonnative tree canopy removed for new development, project proponents (including public agencies) shall contribute to the Greenprint funding in an amount proportional to the tree canopy of the specific project.

CO-147. Increase the number of trees planted within residential lots and within new and existing parking lots.

CO-149. Trees planted within new or existing parking lots should utilize pervious cement and structured soils in a radius from the base of the tree necessary to maximize water infiltration sufficient to sustain the tree at full growth.

LU-15. Planning and development of new growth areas should be consistent with Sacramento County-adopted Habitat Conservation Plans and other efforts to preserve and protect natural resources.

OS-1. Actively plan to protect, as open space, areas of natural resource value, which may include but are not limited to wetlands preserves, riparian corridors, woodlands, and floodplains associated with riparian drainages.

OS-2. Maintain open space and natural areas that are interconnected and of sufficient size to protect biodiversity, accommodate wildlife movement and sustain ecosystems.

OS-9. Open space easements obtained and offered as mitigation shall be dedicated to the County of Sacramento, an open space agency, or an organization designated by the County to protect and manage the open space. Fee title of land may be dedicated to the County, the open space agency, or organization provided it is acceptable to the appropriate department or agency (Please also refer to Section V of the Conservation Element for related policies).

CORDOVA COMMUNITY PLAN

The Cordova Community Plan contains the following policy related to biological resources.

ROS-7. Protect and preserve sensitive environmental areas and wildlife habitats including wetlands, riparian corridors, annual grasslands, and floodplains; and encourage restoration and educational opportunities (e.g., public walkways and informational signage) for such areas when appropriate.

MATHER FIELD SPECIFIC PLAN AND SPECIAL PLANNING AREA

The Mather Field Specific Plan and Special Planning Area Ordinance contain the following relevant policies related to biological resources.

603-19. PERFORMANCE STANDARDS FOR MATHER FIELD EXCEPT THE SINGLE FAMILY RESIDENCES AND PARKS SUBAREAS AS IDENTIFIED IN SECTION 603-20.3 AS "Site D."

BIOLOGICAL RESOURCES

Q. Individual developments within the Specific Plan area shall implement the mitigation strategies of any area-wide mitigation plans prepared by Sacramento County to avoid or reduce impacts upon wetlands and special status species to a less than significant level.

R. Prior to preparation of the comprehensive mitigation plan for biological resources, individual development proposals within the Specific Plan area (i.e., tentative maps, improvement plans, building permits) shall not be approved unless such proposals submit the following information:

a) A wetland delineation of the proposed development area prepared by a qualified biologist, or written verification from a qualified biologist that the development area does not contain wetlands.

b) A special status species survey of the proposed development area prepared by a qualified biologist, or written verification from a qualified biologist that the development area does not contain special status species occurrences/habitat.

c) A mitigation plan which describes the measures that will be implemented to avoid or reduce any project development impacts upon wetlands and special status species habitat to a less than significant level.

S. Individual development projects within the Specific Plan shall obtain all necessary U.S. Army Corps of Engineers permits pursuant to Section 404 of the Clean Water Act, and all necessary Streambed Alteration Agreements from the California Department of Fish and Wildlife pursuant to Section 1601-1603 of the California Fish and Game Code.

T. Existing on-site trees shall be protected and preserved to the maximum extent feasible. Consistent with General Plan policies, the removal of any oak or other native tree (excluding cottonwoods) necessary to accommodate future development of Specific Plan land uses shall be mitigated by planting replacement trees (in-kind species on an inch-for-inch basis) within the Specific Plan area.

U. No tree which supports an existing large stick nest and no dead standing tree (snag) with a cavity, shall be removed during the raptor breeding season (March 15 through August 31) unless a qualified biologist has surveyed the tree snag during the breeding season and found no evidence of raptor nesting activity. If the survey identifies an active raptor nest, the tree snag and nest shall be avoided while the nest is occupied with adults and/or young. Avoidance shall include establishment of a 300-foot diameter non-disturbance buffer zone around the nest site.

SACRAMENTO COUNTY TREE ORDINANCE

Sacramento County has identified the value of its native and landmark trees and has adopted measures for their preservation. The Sacramento County Tree Preservation and Protection Ordinance (Chapter 19.12 of the County Code) states that "it shall be the policy of the County to preserve all trees possible through its development review process." In addition, the "approving body shall have the authority to adopt mitigation measures as conditions of approval for projects to protect other species of trees." This protection is afforded to native oak trees, other native trees, and landmark trees (defined in Section 19.04.030 of the County Code as "an especially prominent or stately tree on any land in Sacramento County"). Furthermore, the Sacramento County General Plan Conservation Element Policy CO-138 states that the County "protect and preserve non-oak native trees along riparian areas if used by Swainson's Hawk, as well as landmark and native oak trees measuring a minimum of 6 inches in diameter or 10 inches aggregate for multi-trunk trees at 4.5 feet above ground."

County policy identifies a list of native oak and specific non-oak native trees, which are listed below.

- Valley Oak (*Quercus lobata*)
- Interior live oak (*Quercus wislinzenii*)
- Blue oak (*Quercus douglasii*)
- Coast live oak (*Quercus agrifolia*) (in Delta area)
- Oracle oak (*Quercus* X *morehus*)
- Native oak hybrids

- California sycamore (*Platanus racemosa*)
- Northern California black walnut (*Juglans californica* var. *hindsii*)
- Oregon ash (*Fraxinus latifolia*)
- Goodding's black willow (*Salix gooddingii*)
- Box elder (*Acer negundo*)
- White alder (*Alnus rhombifolia*)
- California buckeye (*Aesculus californica*)

None of these species occur within the Plan Area.

SWAINSON'S HAWK ORDINANCE

The CDFW requires that mitigation for foraging habitat be provided within the known foraging radius of a nesting Swainson's hawk. In 1997, in response to the need to mitigate for the loss of Swainson's hawk foraging habitat in Sacramento County, the Board of Supervisors adopted an ordinance that established a Swainson's Hawk Impact Mitigation Program (Chapter 16.130 of the Sacramento County Code). The Program has been amended several times; the latest amendment went into effect December 2009.

In adopting the Program, the Board of Supervisors found that "the most effective means of mitigation for the loss of suitable Swainson's hawk foraging habitat is the direct preservation, in perpetuity, of equally suitable foraging habitat on an acre-per-acre basis based on the Project's determined acreage impact." The 1,383-acre Mather Preserve has been established, in part, to mitigate the loss of foraging habitat from the Mather Field Specific Plan Area as a result of development, including development of the Plan Area

SOUTH SACRAMENTO COUNTY HABITAT CONSERVATION PLAN

The SSHCP is a regional approach to conserving species and addressing issues related to urban development, habitat conservation, open space preservation, and agricultural protection. To develop the SSHCP, the County is partnering with Rancho Cordova, Galt, the Sacramento Regional County Sanitation District, the Capital Southeast Connector Joint Powers Authority and the Sacramento County Water Agency. The intent of the SSHCP is to minimize regulatory hurdles and streamline the permitting process for projects that engage in development-related activities inside the SSHCP's Urban Development Area (UDA). The UDA corresponds to land within the County's Urban Services Boundary, and to land within the city limits of Rancho Cordova and Galt, and Galt's adopted sphere of influence. It is important to note that the SSHCP's UDA is not the same as the Sacramento County General Plan's Urban Development Area land use designation, which is the existing General Plan designation of the Mather South project area. The SSHCP would consolidate environmental efforts to protect and enhance vernal pool habitat and other aquatic and upland habitats to provide ecologically viable conservation areas in south Sacramento County for numerous species. The intent of the SSHCP is to provide a mechanism by which the County and its partners could be authorized to issue permits that allow landowners to

engage in specific development activities (covered activities) that could result in the incidental take of listed species (covered species). The intent is that the County and its partners would adopt a developer-paid fee-based program on loss of habitat acreage, habitat type, and long-term management costs. Fees would fund the habitat preservation, restoration and management elements of the SSHCP. The SSHCP EIS/EIR was certified as adequate and complete and the SSHCP was adopted by the County Board of Supervisors in September 2018. Following approval by all the SSHCP partners' hearing bodies, the final step would be issuance of permits by the resource agencies. There is currently no firm estimate of when permits would be issued, and the plan would be implemented.

The Mather South Plan Area is outside the boundary map of the SSHCP and is not provided coverage under the SSHCP.

SIGNIFICANCE CRITERIA

Standards for determining thresholds of significance were established based on the Appendix G of the State CEQA Guidelines and professional standards. Impacts to biological resources are considered significant if the project would result in the following:

1. Have a substantial adverse effect, either directly or through habitat modification, on any species identified as a special-status-species in local or regional regulatory guidance, plans, policies, or regulations or by CDFW or USFWS.

2. Have a substantial adverse effect on any riparian habitat or any other sensitive natural community identified in local or regional plans, policies, regulations or by the CDFW or USFWS.

3. Have a substantial adverse effect on protected surface waters, as defined by the Army Corps of Engineers Wetland Delineation Manual (1987 ed.) and/or as defined by Sections 401 and 404 of the Clean Water Act (including, but not limited to, seeps, vernal pools, swales, drainages, and perennial waterways) through direct removal, filling, hydrological interruption, or other means.

4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites.

5. Conflict with any local policies or ordinances protecting biological resources.

6. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or approved local, regional, or state habitat conservation plan.

METHODOLOGY

Potential impacts on biological resources resulting from project implementation were determined by overlaying the Mather South Project land use plan (refer to Chapter 1 Project Description Plate PD-9) with the habitat and species occurrence maps. For this analysis, it is assumed that permanent habitat loss would occur in all land use designations except for the Nature Preserve (33 acres), Mather Preserve (53.2 acres), and Open Space Drainage Corridor (55.6 acres) designations which comprise a total of approximately 142 acres of the 848-acre Plan Area. Review of biological reports and previous studies conducted for the Plan Area and the larger Mather Field Specific Plan Area, as listed in the Environmental Setting section, along with biological databases and the biological reconnaissance survey were used to determine species that may be present in the Plan Area or vicinity and affected by project activities. The analyses rely on the general definitions of significance.

ISSUES NOT DISCUSSED FURTHER

All issues are evaluated below.

IMPACTS AND ANALYSIS

2016 MATHER FIELD PROJECT EIR IMPACTS DETERMINATION

The Mather Field Project EIR evaluated impacts related to biological resources from implementation of the Mather Field Project which consisted of a realignment of Zinfandel Drive and trunk extension, creation of the Mather Preserve and the establishment of an Urban Development Area designation for the Mather South Plan Area, and conceptual development of the Mather South Plan Area. It should be noted that the Mather Field Project EIR's original analysis of biological resources impacts was based on a draft land use plan for the Mather South project that included a 126-acre Sports Complex and a 152-acre site for a university on 848 acres. From October 2015 to September 2016, County staff and the applicant for the Mather South project participated in a collaborative process with the Mather Stakeholder Group in which the Mather South draft land use plan was revised substantially and the university and Sports Complex were eliminated. The future alignment of Zinfandel Drive was also shifted to the east, resulting in the addition of 53 acres to the Mather Preserve. These changes were reflected in the Mather Field Project Revised Final EIR.

The EIR concluded less than significant program-level impacts with implementation of Mitigation Measures BR-1 and BR-2 to jurisdictional waters and less than significant project-level impacts with implementation of the Mather Preserve, IWMP, and Mitigation Measures BR-1 and BR-2 to jurisdictional waters from the Zinfandel and trunk extension; less than significant program-level and project-level impacts to native trees with implementation of Mitigation Measure BR-3; less than significant program-level and project-level impacts to non-native trees with implementation of Mitigation Measure BR-4; less than significant program-level impacts to riparian habitat and less than significant

project-level impacts to riparian habitat with implementation of Mitigation Measure BR-5; less than significant program-level impacts to vernal pool species with implementation of Mitigation Measure BR-2 and BR-6, and less than significant project-level impacts to vernal pool species with implementation of Mitigation Measure BR-2 and BR-7; less than significant programmatic impacts to valley elderberry longhorn beetle with implementation of Mitigation Measure BR-6 and less than significant project-level impacts to VELB with implementation of Mitigation Measure BR-9; less than significant program and project-level impacts to western spadefoot toad with implementation of Mitigation Measures BR-2 and BR-10; less than significant program and project-level impacts to western pond turtle with implementation of Mitigation Measure BR-11; less than significant impacts to Swainson's hawk with implementation of Mitigation Measure BR-12, less than significant impacts to nesting raptors with implementation of Mitigation Measure BR-13, less than significant impacts to golden eagle with implementation of Mitigation Measure BR-2, less than significant impacts to tricolor black birds with implementation of Mitigation Measure BR-2 and BR-14, less than significant impacts to short-eared owls with implementation of Mitigation Measures BR-2 and BR-15, less than significant impacts to burrowing owls with implementation of Mitigation Measures BR-2 and BR-16, less than significant impacts to ferruginous hawk with implementation of Mitigation Measure BR-2, less than significant impacts to northern harrier with implementation of Mitigation Measure BR-2, less than significant impacts to white tailed-kite with implementation of Mitigation Measure BR-2, less than significant impacts to loggerhead shrike; less than significant program and project-level impacts to American badgers with implementation of Mitigation Measures BR-2 and BR-17; less than significant program and project-level impacts to special-status plants with implementation of Mitigation Measures BR-18; less than significant impacts to Sanford's arrowhead with implementation of Mitigation Measures BR-19; less than significant programmatic impacts to critical habitat with implementation of Mitigation Measures BR-20 and BR-2; less than significant impacts to critical habitat with implementation of Mitigation Measures BR-21 and BR-2; less than significant program-level impacts to the Mather Core Recovery area with implementation of Mitigation Measures BR-2 and BR-20 and less than significant project-level impacts to the Mather Core Recovery area with implementation of Mitigation Measures BR-2 and BR-21; and less than significant program and project-level impacts with implementation of Mitigation Measures BR-22.

The discussion of impacts can be found on pages 7-18 through 7-71 of the Mather Field Project EIR and is hereby incorporated by reference. A list of Mitigation Measures BR-1 through BR-22 can be found on pages 7-72 through 7-104.

MATHER SOUTH PROJECT IMPACTS DETERMINATION

IMPACTS TO SPECIAL-STATUS-SPECIES

Multiple special-status species could be adversely affected by development of the Mather South Project. Below is an analysis for each species that has potential to occur in the Plan Area or be affected by project development.

IMPACT: LOSS OF VERNAL POOL INVERTEBRATES

Vernal pool tadpole shrimp, a species listed as endangered under ESA, is known to occur in the Plan Area. Three other special-status vernal pool invertebrate species, vernal pool fairy shrimp, midvalley fairy shrimp, and Ricksecker's scavenger beetle, have high potential to occur in the Plan Area because suitable habitat is present, and they have been documented within the Mather Field Specific Plan area, west of the Plan Area. Critical habitat for vernal pool fairy shrimp and vernal pool tadpole shrimp has been designated adjacent to the Plan Area (Plate BR-3). The Mather Preserve west of the existing Zinfandel Drive was specifically designed to include most of the critical habitat for the vernal pool invertebrates that exists within the Mather Field are; however, some of the designated critical habitat lies within portions of Mather Field that would be developed (e.g., Airport Commercial and Park/Recreation land uses). All the designated critical habitat is outside of the Plan Area and the project would not adversely modify this critical habitat. The Mather Preserve west of the Plan Area is also within the Mather Core Area identified in the vernal pool recovery plan (USFWS 2005); however, the Plan Area is not within the core area and would not affect any habitat within the core area thereby interfering with the recovery plan goals of preserving 95 percent of the vernal pool tadpole shrimp habitat and 85 percent of the vernal pool fairy shrimp within the core area. According to the Mather Field Project EIR, Mather Field contains a total of approximately 103 acres of suitable habitat for vernal pool tadpole shrimp and vernal pool fairy shrimp, of which approximately 73 acres, or 71 percent, has been preserved within the Mather Preserve. Approximately 8.37 acres of vernal pool invertebrate habitat retained within the Mather Preserve would be subject to indirect impacts

Vernal pools are present throughout the Plan Area; however, the highest density and, in general, highest functioning vernal pools in the Mather Field Specific Plan area are present between Mather Airport and Independence at Mather, west of the Plan Area. Therefore, within the larger planning context of Mather Field, of which Mather South is a part, the highest density and highest quality vernal pools would be retained within the Mather Preserve. As part of the Mather Field Specific Plan and SPA Amendment project approved in 2016, 53 contiguous acres of the Mather South Plan Area were added to the then-proposed Mather Preserve area to the west. The Mather South project would retain the expanded preserve boundary. The project would also preserve 33 acres of land in two smaller areas that are not contiguous with the Mather Preserve, as well as **avoid** 56 acres of drainage corridor that connects to the Mather Preserve.

The Plan Area contains approximately 24.36 acres of suitable habitat for vernal pool invertebrates. Project implementation would result in direct loss, through permanent fill, of approximately 14.53 acres, or 60 percent, of this suitable habitat (Table BR-~~5~~**4**) during site grading and other ground disturbance and this would result in direct take (killing) of these invertebrate species, if they are present, and loss of valuable habitat for these species. For purposes of this analysis, all vernal pools, vernal swales, and seasonal wetlands were considered suitable habitat for special-status vernal pool invertebrates (Plate BR-4). In addition, streams/creeks (i.e., Morrison Creek and its tributaries) were considered suitable habitat because they potentially function as dispersal corridors for these species. Consistent with the USACE/USFWS programmatic formal ESA

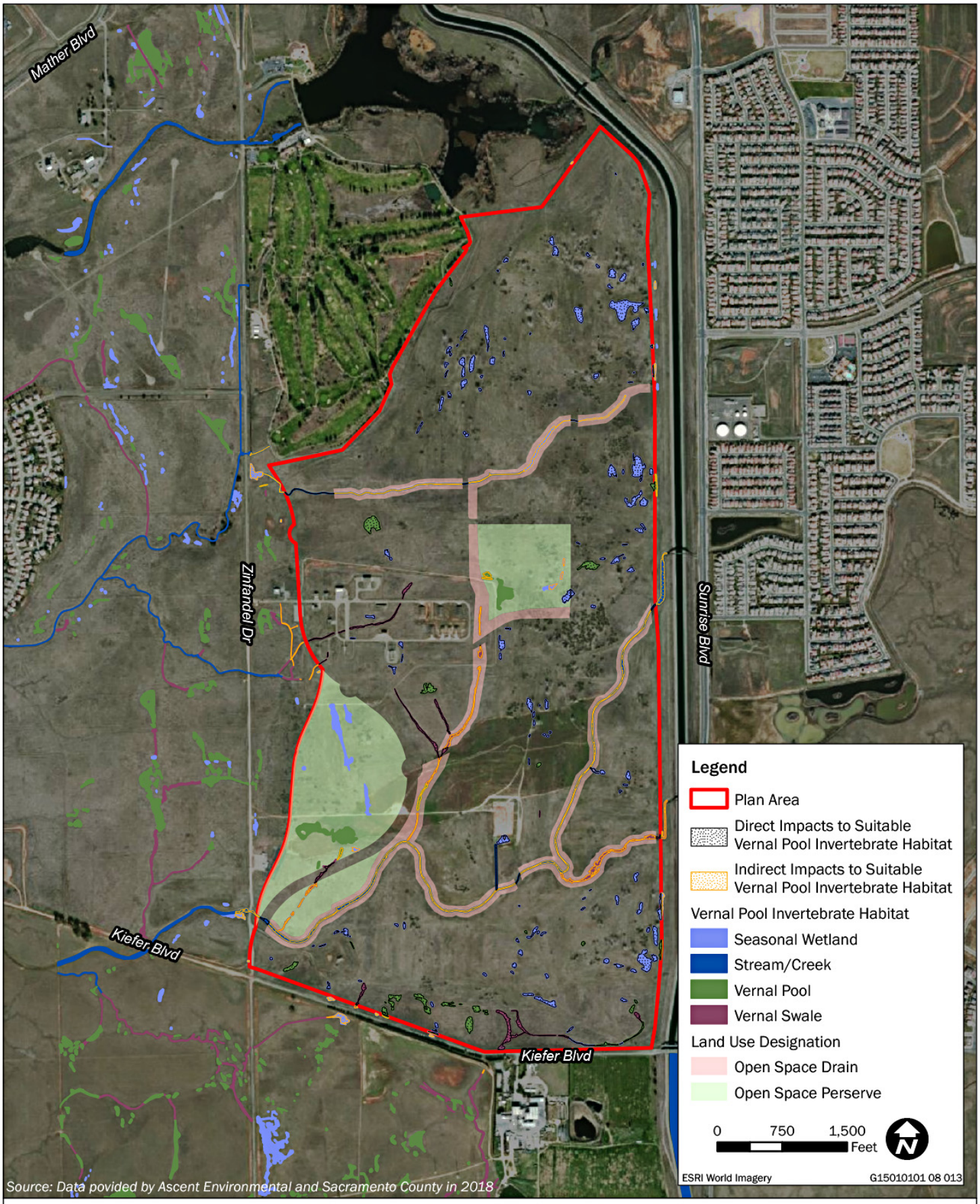


Plate BR-4: Impacts to Suitable Vernal Pool Invertebrate Habitat

ASCENT ENVIRONMENTAL

consultation for listed vernal pool crustaceans (USFWS 1996), if any part of a vernal pool would be destroyed, the whole pool was considered as a direct loss (Plate BR-4). Therefore, the project would contribute 14.53 acres **of direct impact** to the total of approximately 29.99 acres of vernal pool invertebrate habitat loss estimated in the Mather Field Project EIR.

Table BR-4: Acreage of Vernal Pool Invertebrate Habitat Direct and Indirect Impacts and Preservation[1]

Habitat	Direct Impact[2]	Open Space Preserve	Open Space Drain	Total	Indirect[4] Impact (onsite)	Indirect[4] Impact (offsite)
Vernal Pool	3.06	2.67	0.14[3]	5.87	0.33	0.17
Seasonal Wetland	9.15	1.48	0.69[3]	11.32	0.91	0.95
Vernal Swale	1.95	0.13	1.52[3]	3.59	1.65	0.42
Stream/Creek	0.37	0.01	3.20	3.58	0.00	0.00
Total	14.53	4.29	5.55	24.36	2.89	1.54

1. All acres are approximate and totals are subject to rounding.
2. If any part of a wetland would be filled, the whole wetland was calculated as a direct loss.
3. Although these wetlands would be retained within the Open Space Drain corridor, they were calculated as either direct or indirect loss and their acreage is also included in the indirect impact column.
4. If the wetland would be retained, but would be within 250-feet of development, or if development would occur within the watershed of that wetland, it was calculated as an indirect impact. If a preserved wetland would be within 250 feet of proposed development but the entire watershed of that wetland would be preserved, the entire wetland was considered preserved.

In addition to the direct removal of habitat, implementing the project could have indirect impacts on vernal pool invertebrate habitats, including reduction in water quality and altered hydrology caused by urban runoff, erosion, and siltation; intrusion of humans and domestic animals; litter and dumping; alteration of the wetland watershed area; and introduction of invasive plant species. Indirect effects could result in habitat degradation leading to lower reproductive success of special-status vernal pool invertebrates, and eventual elimination of these species from the affected habitat. As determined in Chapter 12 Hydrology, Drainage, and Water Quality, compliance with the requirements of The Sacramento County Stormwater Ordinance (Sacramento County Code 15.12), Land Grading and Erosion Control Ordinance (Sacramento County Code 16.44), and the State's General Stormwater Permit for Construction Activities, preparation and implementation of a site-specific stormwater pollution prevention plan (SWPPP) and Best Management Practices, implementation of Low Impact Development Standards, and implementation of the drainage plan outlined in the *Storm Drainage Master Plan for Mather South* (MacKay & Somps 2017), along with implementation of Mitigation Measure HY-1, project impacts on water quality would be less than significant. The project would also incorporate hydromodification mitigation basins for the on-site watersheds, which are designed according to the 2013 revised draft *Sacramento County Stormwater Quality Partnerships Hydromodification Management Plan* (HMP). These basins would capture the required Storm Water Quality Volume and summer nuisance flows, as described in Chapter 12, Hydrology, Drainage, and Water Quality. These detention basins are designed as combination water quality / hydromodification /

flood control basins. The storm drain pipes for each detention basin's shed areas discharge into a permanent wet water quality basin which treats the development runoff through gravitational settling and biological processes. The *Storm Drainage Master Plan for Mather South* (MacKay & Somps 2017) is consistent with the requirement of Mitigation Measure BR-6 of the Mather Field Project EIR to prepare a comprehensive drainage plan and demonstrates that the project can develop without impacting the predevelopment conditions in the downstream reaches of Morrison Creek, Todd Creek, Frye Creek, and Mather Lake and, therefore, project development would not result in hydromodification of offsite waters because of stormwater or nuisance runoff. However, indirect impacts from intrusion of humans and domestic animals; litter and dumping; alteration of individual wetland watershed area; and introduction of invasive plant species could still degrade habitat for vernal pool invertebrates in offsite wetlands and wetlands retained onsite.

Per the USACE/USFWS programmatic formal ESA consultation for listed vernal pool crustaceans (USFWS 1996), USFWS generally considers that vernal pool habitats within 250 feet of lands that would be developed may be subject to indirect effects; however, site-specific scientific analysis of terrain and hydrologic barriers may be used to demonstrate the immediate watershed is smaller (or larger) than 250 feet around a wetland. The watershed methodology uses LIDAR (light detection and ranging) to measure surface topography, and the GIS analysis with computer modeling to render surface watersheds for the wetlands in the affected area. This type of watershed analysis was completed for the Plan Area and adjacent lands to the west (Dudek 2016). Therefore, indirect impacts from the project were determined based on the site-specific watershed analysis. A wetland feature was determined to be subject to indirect effects if project development would overlap any portion of the feature's watershed. The indirect impact analysis includes wetlands that would be retained within open space and preserve land uses within the Plan Area, and wetlands adjacent to the west and north of the Plan Area. The preserve areas were designed to avoid development within the contributing watersheds of individual wetlands retained within the preserves, to the extent feasible; however, this was not possible in all cases and there are some wetlands in the onsite preserves and adjacent Mather Preserve that would be indirectly affected by project development within their watersheds. Wetland features to the east of the Plan Area were not considered subject to indirect effects from project implementation because they are separated from the project site by the Folsom South Canal, a regional bikeway, and Sunrise Boulevard. Wetlands to the south were not included in this watershed analysis as they would be filled if the NewBridge project is approved. All wetlands within 250 feet south of project development were considered subject to indirect project effects even though they are separated from the Plan Area by Kiefer Boulevard, an existing two-lane paved road. Wetlands within 250 feet to the south of the Plan Area would be directly affected by the proposed Newbridge project. Table BR-4 provides a summary of the approximate acreage of direct and indirect vernal pool invertebrate habitat impacts and preservation that would occur with project implementation. Plate BR-4 shows the extent of direct and indirect impacts to suitable vernal pool invertebrate habitat.

Direct loss of suitable habitat and direct take of special-status vernal pool invertebrates, as well as indirect impacts that degrade habitat quality leading to a loss of habitat function, would be a potentially significant impact because it would eliminate occupied habitat and reduce habitat available to species that are already threatened or endangered thereby contributing to the ongoing decline of these species in the region and statewide.

Approximately 73 acres of suitable vernal pool invertebrate habitat will be permanently protected within the 1,381-acre Mather Preserve (through an endowment and conservation easements) and a final wetlands management plan has been prepared and adopted for the preserve (Sacramento County 2014). Management of the Mather Preserve will focus on wetland habitat and vernal pool fairy shrimp and vernal pool tadpole shrimp, but will also benefit other vernal pool invertebrates, including midvalley fairy shrimp and Ricksecker's scavenger beetle. Although the habitat preservation within the Mather Preserve and other open space preserves within the Plan Area provides partial mitigation for project impacts, programmatic consultation indicates that a combination of preservation and creation is needed to fully mitigate the loss of habitat for vernal pool branchiopods listed under ESA. Without the creation element of mitigation, there would be a net loss of habitat for these species. Based on standard mitigation ratios for federally listed vernal pool branchiopods, direct impacts would require preservation at a 2:1 ratio plus creation at a 1:1 ratio and indirect impacts would require preservation at a 2:1 ratio. Therefore, the direct loss of 14.53 acres of vernal pool invertebrate habitat from the Plan Area would require preservation of 29.06 acres of existing vernal pool invertebrate habitat and creation of 14.53 acres of vernal pool invertebrate habitat. Indirect impacts to 4.43 acres (2.89 acres onsite and 1.54 acres offsite) of vernal pool invertebrate habitat would require preservation of another 4.43 acres of vernal pool invertebrate habitat. Therefore, a total of 33.46 acres of vernal pool invertebrate habitat preservation would be required as mitigation for project impacts. The combination of preservation in the existing Mather Preserve and additional onsite preservation would satisfy the preservation requirements for project impacts. This is a potentially significant impact.

MITIGATION MEASURES

BR-1. Open Space Preserve and Open Space Drain Conservation Easements

Before issuance of grading permits, approval of improvement plans, or building permits, whichever occurs first, the Open Space Mather Preserve~~,~~ **and** Nature Preserve~~, and Open Space Drain~~ land use areas identified on the proposed land use plan shall be placed within a permanent conservation easement granted to a registered 501 (c)(3) conservation organization and incorporated into the existing Mather Preserve network as approved by the County, USACE, and USFWS. The County shall be the owner of preserved lands and shall establish an endowment to fund management of the wetland preserves and easement compliance monitoring. All wetland preserve areas shall be managed to maintain habitat suitability for vernal pool invertebrates, particularly vernal pool fairy shrimp and vernal pool tadpole shrimp, benefit plants and animals native to California, as well as to protect and enhance hydrologic functions and processes consistent with the final wetlands management plan. Habitat management of the

preserve shall include managing invasive plant species by reducing existing infestations and preventing establishment of new infestations consistent with the final wetlands management plan. Fencing and signage shall be installed at the boundary between the developed portions of the Plan Area and the Mather Preserve to identify the preserve as a protected sensitive resource area and prevent unauthorized trespassing into the preserve.

BR-1a. Prepare a Hardpan Restoration Plan

Prior to the start of construction activity for the sewer trunk line **and the water transmission main line** (within Zinfandel Drive), a hardpan restoration plan shall be developed by a qualified hydrogeologist and geotechnical expert and implemented for sewer trunk line **and water transmission main line** construction adjacent to the Mather Preserve. The detailed plan shall include identification and documentation of the hardpan depths during excavation of the sewer **and water line** trench, and appropriate backfill material to restore the hardpan functionality. The detailed hardpan restoration plan shall be included in the construction specifications for the proposed sewer trunk line.

BR-2. Compensate for Loss of Vernal Pool Invertebrate Habitat and Take of Federally Listed Vernal Pool Invertebrates

Before any groundbreaking activity within 250 feet (or lesser distance deemed sufficiently protective through site-specific watershed analysis with approval from USFWS) of vernal pool invertebrate habitat, project applicants for each distinct project phase shall purchase habitat creation credits at a USACE and USFWS approved mitigation bank, record a conservation easement over lands that include created/restored/rehabilitated vernal pool habitat and implement a final preserve management plan approved by the County, USACE, and USFWS, and or restore vernal pool habitat within the designated preserve areas, upon USFWS approval, to fully compensate for the project's direct and indirect impacts to habitat for federally listed vernal pool species. The combination of habitat creation credits and restoration shall be equivalent to 14.53 acres, at a minimum, to compensate for the direct loss of vernal pool habitat within the Plan Area. Additional preservation credits shall be purchased to compensate for indirect impacts if it is determined during ESA Section 7 consultation that onsite preservation and preservation within the Mather Preserve is not sufficient to satisfy the 2:1 preservation ratio necessary to compensate for direct and indirect impacts. The acreage and function of all wetlands that would be removed as a result of project implementation shall be replaced and restored on a "no-net-loss" basis.

If restoration within the Mather Preserve is implemented as part of compensatory mitigation, the restoration goal shall be to restore and enhance habitat for vernal pool species such that their ultimate functions and services are equal to or greater than the wetland features directly or indirectly affected by project implementation. This effort could include restoring vernal pools and/or other suitable aquatic features that have been damaged by prior activities such that a functional lift is achieved. If restoration is proposed as part of mitigation, the project applicant shall submit a vernal pool habitat

restoration plan to the County, USACE, and USFWS for review and approval before any ground disturbance within 250 feet (or lesser distance deemed sufficiently protective through site-specific watershed analysis with approval from USFWS) of vernal pool invertebrate habitat. The restoration plan must demonstrate how the aquatic functions that would be lost through project implementation will be replaced. The plan shall identify in-kind reference wetland habitats for comparison with restored wetlands (using performance standards and success criteria) to document success. The restoration plan shall include the following elements:

- monitoring protocol, including responsible parties, schedule, and annual report requirements;
- ecological performance standards, based on the best available science, that can be assessed in a practicable manner (e.g., performance standards proposed by Barbour et al. 2007). Performance standards must be based on attributes that are objective and verifiable;
- monitoring of plant communities as performance criteria (annual measure of success, during monitoring period) and success criteria (indicative of achievement of mitigation habitat requirement at end of monitoring period) for hydrologic function have become established and the creation site "matures" over time;
- GIS analysis of compensatory wetlands to demonstrate actual acreage of functioning wetland habitat;
- adaptive management measures or corrective measures to be applied if performance standards and acreage requirements are not being met;
- responsible parties for receiving and reviewing reports and for verifying success or prescribing implementation or corrective actions.

The restoration plan shall be approved by USFWS and USACE before completion of Section 7 consultation under ESA and issuance of any permits under Section 404 of the CWA for fill of wetlands.

Final mitigation ratios will be determined by USACE using their mitigation ratio checklist process and will be coordinated with USFWS during the ESA Section 7 consultation between USACE and USFWS; however, the minimum compensation ratios for impacts on federally listed vernal pool invertebrate habitat shall be as follows:

- 2 acres of preservation and 1 acre of creation/restoration/rehabilitation for each acre of direct impact
- 2 acres of preservation for each acre of indirect impact

BR-3. Secure Take Authorization for Federally Listed Vernal Pool Invertebrates and Implement All Conditions in the Biological Opinion

Before any groundbreaking activity within 250 feet (or lesser distance deemed sufficiently protective through site-specific watershed analysis with approval from USFWS) of vernal pool invertebrate habitat, project applicants for each distinct project phase shall secure take authorization from USFWS through ESA section 7 consultation between USACE and USFWS as part of the CWA Section 404 permit process. The applicant shall implement all conditions of the Section 404 permit and the biological opinion issued for the project, including compensatory mitigation at the ratios described under Mitigation Measure BR-2 or as required in the biological opinion, whichever is greater.

BR-4. Implement Worker Environmental Awareness Program

Project applicants shall retain a qualified biologist to conduct a worker environmental awareness program (WEAP) for construction crews before each phase of project construction. The WEAP training will be provided to all construction personnel regarding the need to avoid effects on sensitive biological resources (i.e., wetlands, non-wetland waters, special-status species habitats in and adjacent to the construction area, and active bird nests). The WEAP will include a brief review of the special-status species with the potential to occur on the project site (including their life history, habitat requirements, and photographs of the species). The training shall identify the portions of the project site in which the species may occur, as well as their legal status and protection. The program shall also cover the relevant permit conditions, BMPs, and mitigation measures that must be followed by all construction personnel to reduce or avoid effects on these resources during project construction. During WEAP training, construction personnel shall be informed of the importance of avoiding ground-disturbing activities outside of designated work areas. Training shall identify the steps to be taken if a special-status species is found within the construction area (i.e., notifying the crew foreman, who will inform the designated biologist). In addition, construction employees shall be educated about the importance of controlling and preventing the spread of invasive plants. An environmental awareness handout that describes and illustrates sensitive resources to be avoided during project construction and identifies all relevant permit conditions shall be provided to each crew member. The crew foreman will be responsible for ensuring that crew members adhere to the guidelines and restrictions. Education programs will be conducted for appropriate new personnel as they are brought on the job during the construction period.

BR-5. Protect Habitat in Preserve Areas and Avoided Habitats During Construction

Avoided and protected habitat in the Mather Preserve, Nature Preserves, and Open Space Drain areas shall be protected during construction activities through implementation of the following measures:

- A biological monitor approved by USFWS and CDFW shall be onsite during construction within 250 feet of vernal pool invertebrate habitat to be preserved to ensure no unauthorized take of listed species or destruction of habitat to be preserved occurs. The biologist shall have the authority to stop any activities that may result in such take or destruction until appropriate corrective measures have

been completed. The biologist also shall be required to report immediately any unauthorized impacts to the USFWS or CDFW, as appropriate depending on agency jurisdiction over the affected resource.

- The project applicant shall install fencing, stakes/flagging, or other appropriate barrier between the active construction work area and adjacent sensitive biological resource areas outside the work area, including in the Mather Preserve area and any sensitive resources that are to be retained onsite, to prevent inadvertent encroachment into these sensitive areas. The location of barrier installation shall be directed by the onsite biological monitor.

Implementation of Mitigation Measures BR-1 through BR-5 would reduce impacts on vernal pool invertebrates to **less than significant with mitigation** because project applicants would be required to avoid and minimize indirect impacts during construction and provide compensation for the loss and degradation of vernal pool invertebrate habitat through creation of new habitat and permanent preservation of valuable habitat for these species within the Mather Core Area and within designated critical habitat for listed vernal pool invertebrates such that no net loss of habitat acreage and function results. Preservation habitat included as part of compensatory mitigation is of higher value than habitat that would be lost because of project implementation because it is within the Mather Core Area and designated critical habitat whereas the Plan Area is not within the core area or designated critical habitat and the Mather Preserve generally contains higher density and higher functioning vernal pool habitats than the Plan Area. Additionally, the preserved habitat would be managed specifically for the benefit of vernal pool invertebrates though a wetlands management plan.

IMPACT: SPECIAL-STATUS PLANTS

Seven ~~Five~~ special-status plant species are known or have potential to occur in the Mather South Plan Area: slender orcutt grass, Sacramento orcutt grass, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, **dwarf downingia, pincushion navarretia** and legenere. Slender orcutt grass and Sacramento Orcutt grass (vernal pool grasses) are formally protected under ESA and CESA. The Mather Preserve west of existing Zinfandel Drive was specifically designed to include all the critical habitat for the vernal pool grasses (Plate BR-3) that exists within the Mather Field Specific Plan Area and the project would not adversely modify this critical habitat. While these two federally listed vernal pool grasses have not been identified in the Plan Area or elsewhere within Mather Field, suitable habitat is present and there is some potential for these species to occur in the Plan Area. Most of the wetlands in the Plan Area; however, are not characteristic of the types of pools where these vernal pool grasses and Bogg's Lake hedge-hyssop are typically found (i.e., large, deep, long-lasting pools). Vernal pools, swales, and seasonal wetlands in the Plan Area are more suitable for Ahart's dwarf rush and legenere. Protocol level botanical surveys were last conducted in the Plan Area from July through September 2002 and from April to June 2003. The methods and results of those surveys are presented in the Mather Field natural resources assessment (WRA 2004a). Because the surveys are over 15 years old, they cannot be relied upon to make an absence determination for special-status plants for which suitable habitat exists in the Plan Area.

Special-status plants that were found in the Plan Area during the 2002-2003 botanical surveys consist of Ahart's dwarf rush and legenere. Observations of legenere had been previously documented in Plan Area in the CNDDB. See Plate BR-2 for the locations of special-status plant observations in the Plan Area. Focused surveys for Ahart's dwarf rush were subsequently conducted by Carol Witham in 2006, 2007, and 2008 to search for this species in the pools where it was reported to occur by WRA. Ahart's dwarf rush was not relocated in these pools during the subsequent surveys; however, it is considered for this analysis to potentially be present and legenere is considered present. Both of these species have been documented adjacent to the Plan Area as has Bogg's Lake hedge-hyssop.

Project implementation would result in removal of the specific wetlands where Ahart's dwarf rush and legenere were previously observed, as well as approximately 13.93 acres of suitable wetland habitat for these and other special-status vernal pool plants. The loss of known special-status plant occurrences and potential habitat could reduce local and regional population numbers of plant species that are rare, increasing the potential that these species could become listed as threatened or endangered under CESA or ESA in the future. The loss of vernal pool grasses already listed as threatened/endangered could interfere with recovery goals for these species and further reduce their overall population numbers. Therefore, the loss of special-status plants would be a potentially significant impact.

MITIGATION MEASURES

BR-6. Implement BR-1 through BR-5

BR-7. Conduct Floristic Surveys and Compensate for Loss of Special-Status Plants

The County shall require project applicants, as a condition of project approval, before any groundbreaking activity within 250 feet of vernal pools, swales, and seasonal wetlands, to retain a qualified biologist familiar with the vernal pool flora of the region to conduct floristic surveys of wetland habitats **on the entire Mather South project site** with potential to support slender orcutt grass, Sacramento orcutt grass, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, **dwarf downingia, pincushion navarretia** and legenere. The surveys shall be carried out during the time of year when the target species are easily identified (generally, the blooming period) and at least two survey rounds, one in spring and one in summer, shall be conducted. Nearby reference populations shall be visited before surveys, if available, to confirm the target species have emerged and are in an identifiable state. All plants encountered during surveys shall be identified to the taxonomic level necessary to determine rarity status. Floristic surveys shall be conducted no more than 5 years prior and no later than the blooming period immediately preceding the approval of a grading or improvement plan or any ground disturbing activities, including grubbing or clearing in areas that could directly or indirectly affect potential habitat for target special-status plants.

If special-status plants are identified on the project site, the project applicants shall be required to implement the following measures to mitigate the potential loss of special-status plant species:

- Avoid special-status plant occurrences through project design to the extent technically feasible and appropriate. Avoidance shall be deemed technically feasible and appropriate if the habitat occupied by special-status plants may be preserved onsite while still obtaining the project purpose and objectives and if the preserved habitat features could reasonably be expected to continue to function as suitable habitat for special-status plants following project implementation.
- If after examining all feasible means to avoid impacts to potential special-status plant species habitat through project site planning and design, adverse effects cannot be avoided, then impacts shall be mitigated in accordance with guidance from the appropriate state or federal agency charged with the protection of the subject species (USFWS or CDFW). Wetlands that have been previously documented to support legenere and Ahart's dwarf rush have been identified for removal in the southern portion of the Plan Area and mitigation for loss of these plant occurrences shall be mitigated.
- Notify CDFW, as required by the California Native Plant Protection Act, of any special-status plants found on the project site. Notify the USFWS if any plant species listed under the Endangered Species Act are found.
- Develop a mitigation and monitoring plan to compensate for the loss of known legenere and Ahart's dwarf rush, and any additional special-status plant species found during preconstruction surveys. The mitigation and monitoring plan shall be submitted to CDFW or USFWS, as appropriate depending on species status, for review and comment. The County shall consult with these entities, as appropriate depending on species status, before approval of the plan to determine the appropriate mitigation measures for impacts on any special-status plant population. Mitigation measures may include preserving and enhancing existing onsite populations, creation of off-site populations on project mitigation sites through seed collection or transplantation, and/or preserving occupied habitat off-site in sufficient quantities to offset loss of occupied habitat or individuals. The preservation of existing occurrences of legenere and Ahart's dwarf rush in the Mather Preserve may be used as compensation for loss of habitat occupied by these species within the Plan Area; however, additional mitigation may be required, including transplantation of the plants to be removed, if the County, in consultation with CDFW determines that preservation of the Mather Preserve occurrences is not sufficient to fully compensate for losses resulting from project implementation.
- If transplantation is part of the mitigation plan, the plan shall include a description and map of mitigation sites, details on the methods to be used, including collection, storage, propagation, receptor site preparation, installation, long-term protection and management, monitoring and reporting requirements, remedial action responsibilities should the initial effort fail to meet long-term monitoring requirements, and sources of funding to purchase, manage, and preserve the sites. Transplantation to suitable wetland habitats within the Mather Preserve may be used as part of the mitigation plan for legenere and Ahart's dwarf rush, as well as any other special-status plants found in the Plan Area, if a qualified

restoration ecologist determines through site-specific analysis, in consultation with CDFW or USFWS, depending on species status, that currently unoccupied wetlands in the preserve are suitable to support the affected species. The following performance standards shall be applied:

- The extent of occupied area and the flower density in compensatory re-established populations shall be equal to or greater than the affected occupied habitat and shall be self-producing. Re-established populations shall be considered self-producing when:
    - plants re-establish annually for a minimum of 5 years with no human intervention, such as supplemental seeding; and
    - re-established populations contain an occupied area and flower density comparable to existing occupied habitat areas in similar reference habitat types.

Implementation of Mitigation Measure BR-6 and BR-7 would reduce impacts on known and potentially-occurring special-status plant species within the Plan Area to **less than significant with mitigation** because project applicants would be required to identify and avoid special-status plant populations to the extent feasible and provide compensation for the unavoidable loss of special-status plants through establishment of new populations, conservation easements, and permanent preservation of valuable habitat for these species within the Mather Core Area and designated critical habitat for vernal pool grasses.

IMPACT: LOSS OF WESTERN SPADEFOOT HABITAT

Western spadefoot has been previously documented in an onsite vernal pool and vernal pools, seasonal wetlands, and vernal swales throughout the Plan Area represent potentially suitable breeding habitat for this species. Western spadefoots rely on seasonal wetland habitats for breeding and spend the remainder of their life cycle aestivating in surrounding upland habitats. Grasslands, cottonwood woodland, and coyote brush scrub provide suitable upland habitat for western spadefoot. Project implementation would result in permanent removal of approximately 13.93 acres of suitable breeding habitat and approximately 691 acres of upland habitat for western spadefoot, which could result in direct take of western spadefoot and would result in loss of habitat for this species. The one Plan Area vernal pool known to support breeding western spadefoot would be retained within the Open Space Mather Preserve; however, there is potential for this species to be present in other onsite wetlands and throughout the upland habitats.

In addition to the direct removal of habitat, implementing the project could result in indirect impacts on western spadefoot, including mortality related to an increase in vehicular traffic, mortality from landscaping maintenance activities including mowing, raking, weed whacking, noise and vibration disturbance causing toads to break dormancy, and exposure to herbicides, pesticides, and other toxins. Because western spadefoot shares the same wetland habitats as the vernal pool invertebrates, they are

subject to the same indirect impacts to wetland habitats discussed under the vernal pool invertebrate habitat impact analysis. Indirect effects, including reduction in water quality and altered hydrology caused by urban runoff, erosion, and siltation; intrusion of humans and domestic animals; litter and dumping; and introduction of invasive plant species could result in habitat degradation leading to lower reproductive success of western spadefoot, and eventual elimination of this species from the affected habitat. Direct and indirect impacts to western spadefoot would be potentially significant because these effects could reduce local populations numbers of a species that is rare in the region and statewide and has already experienced substantial declines and ongoing habitat losses. Loss and degradation of habitat and reduction in population numbers could contribute to a trend toward state or federal listing for western spadefoot. This is a potentially significant impact.

MITIGATION MEASURES

BR-8. Implement BR-1 through BR-5

BR-9. Minimize Take of Western Spadefoot

As a condition of project approval and before ground disturbing activities, the County shall require future project proponents to retain a qualified biologist to conduct surveys for western spadefoot in areas of potential habitat that would be eliminated by the project. The surveys shall be conducted at the appropriate time of year to detect western spadefoot, generally the breeding season, according to methods approved by CDFW. If western spadefoot is found in habitat that will be eliminated or made unsuitable for western spadefoot, then adult and larval western spadefoot and egg masses shall be collected and relocated to suitable habitat in the Mather Preserve by a qualified biologist in coordination with CDFW.

Implementation of Mitigation Measures BR-8 and BR-9 would reduce impacts on western spadefoot to **less than significant with mitigation** because project applicants would be required to identify and salvage western spadefoot to minimize direct mortality and provide compensation for loss of western spadefoot habitat, commiserate with vernal pool invertebrate habitat compensation, so sufficient habitat for this species is preserved within the project vicinity to support the local breeding population such that project implementation would not inhibit recovery of the species or result in loss of viability of the species in the region.

IMPACT: LOSS OF VALLEY ELDERBERRY LONGHORN BEETLE HABITAT

Elderberry shrubs have been identified in the Plan Area during surveys conducted for the NSA Pipeline Project and the Zinfandel Drive/trunk sewer projects, as well as during reconnaissance level surveys conducted in 2018 (Plate BR-1). Exit holes were observed in some elderberry shrubs during the 2018 reconnaissance surveys. Because systematic surveys have not been conducted across the entire Plan Area, it is possible that additional elderberry shrubs are present that have not yet been mapped. Project development would result in removal of all, or nearly all, elderberry shrubs existing in the Plan Area and these shrubs could contain larvae of valley elderberry longhorn beetle. Indirect impacts from ground-disturbing activities or use of herbicides near

shrubs could also result if the health of elderberry shrubs containing valley elderberry longhorn beetle larvae is adversely affected. Direct removal of elderberry shrubs or disturbance of shrubs that affects their health or survival could result in take of federally listed valley elderberry longhorn beetle. This impact would be potentially significant.

MITIGATION MEASURE

BR-10. Compensate for Loss of Valley Elderberry Longhorn Beetle Habitat

- As a condition of project approval, a qualified biologist shall determine whether future project sites contain valley elderberry longhorn beetle habitat (i.e., elderberry shrubs). If so, a preconstruction survey shall be conducted by a qualified biologist within 165 feet of project disturbance areas before any construction activity. The surveys shall be conducted according to the protocol outlined in USFWS *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* (USFWS 2017b) (Framework).
- If elderberry shrubs are located 165 feet or more from project activities, direct or indirect impacts are not expected. Shrubs 165 feet or more away shall be protected during construction by establishing and maintaining a high visibility fence at least 165 feet from the drip line of each elderberry shrub to prevent inadvertent encroachment into valley elderberry longhorn beetle habitat.
- If elderberry shrubs located within 165 feet of project activities can be retained, project activities may occur up to 20 feet from the dripline of elderberry shrubs if precautions are implemented to minimize the potential for indirect impacts. An avoidance area shall be established at least 20 feet from the drip line of an elderberry shrub for any activities that may damage or kill the elderberry shrub (e.g., trenching, paving, etc.). The project applicant shall implement avoidance and minimization measures specified in the USFWS Framework (USFWS 2017b).
- To the extent feasible, all activities that could occur within 165 feet of an elderberry shrub, shall be conducted outside of the flight season of the valley elderberry longhorn beetle (March - July).
- Herbicides shall not be used within the drip line of shrubs to be retained. Insecticides shall not be used within 100 feet of elderberry shrubs. All chemicals shall be applied using a backpack sprayer or similar direct application method.
- If trimming elderberry shrubs is proposed for shrubs to be retained, trimming shall be conducted between November and February and shall not result in the removal of elderberry branches that are ≥1 inch in diameter. If trimming results in removing branches that are ≥1 inch in diameter, the project proponent shall mitigate for the loss of the valley elderberry beetle habitat according to the USFWS 2017 Framework.
- The project applicant shall comply with ESA and consult with USFWS and will compensate for the unavoidable loss of elderberry shrubs according to the USFWS 2017 Framework. The Framework uses presence or absence of exit

holes, and whether the affected elderberry shrubs are in riparian habitat to determine the number of elderberry seedlings or cuttings and associated riparian vegetation that would need to be planted as compensatory mitigation for affected valley elderberry longhorn beetle habitat. Compensatory mitigation may include purchasing credits at a USFWS-approved conservation bank, providing onsite mitigation, or establishing and protecting habitat for valley elderberry longhorn beetle as follows:

- For elderberry shrubs in riparian habitat:
    - For each shrub that is trimmed, the project proponent shall purchase two credits at a USFWS-approved bank.
    - For each shrub removed, the entire shrub may be transplanted to a USFWS-approved location in addition to the purchase of two credits.
- For elderberry shrubs in non-riparian habitat:
    - The project proponent shall purchase one credit at a USFWS-approved bank for each shrub that will be trimmed if exit holes have been found in any shrub on or within 165 feet of the project area.
    - If no exit holes are present and the shrub is not in riparian habitat, no further action is required.
    - If the shrub will be completely removed by the activity, the entire shrub shall be transplanted to a USFWS-approved location in addition to the purchase of one credit.

Implementation of Mitigation Measure BR-10 would reduce impacts on valley elderberry longhorn beetle to **less than significant with mitigation** because project applicants would be required to identify and avoid direct and indirect impacts to the extent feasible or provide compensation for loss of valley elderberry longhorn beetle habitat through USFWS-approved mitigation measures such that project implementation would not inhibit recovery of the species or result in loss of viability of the species in the region.

IMPACT: LOSS OF WESTERN POND TURTLE

Western pond turtles spend most of their life cycle in perennial aquatic habitats, such as lakes, ponds, marshes, rivers, and irrigation ditches and lay their eggs in uplands, typically within 650 feet, but up to 1,300 feet from aquatic habitats. Western pond turtles may also bask and overwinter in uplands. CDFW conservatively considers uplands within 1,650 feet of suitable aquatic habitat could potentially be used for nesting or overwintering. No suitable aquatic habitat is present in the Plan Area for western pond turtle, but the species has been documented at Mather Lake and there is potential for western pond turtle to nest, bask, or overwinter in those portions of the Plan Area that are within 1,650 feet of the lake. Therefore, project implementation has potential to

result in take of western pond turtle adults, eggs, and hatchlings. This impact would be potentially significant.

MITIGATION MEASURE

BR-11. Conduct Preconstruction Surveys For Western Pond Turtle and Avoid Individuals and Nests

Before any ground disturbing activities within 1,650 feet of Mather Lake, the project applicant shall consult with CDFW to establish appropriate avoidance procedures and procedures to apply if a western pond turtle, or active nest, is found within the construction area. The developer shall submit written evidence of the consultation and its conclusions to the County Environmental Coordinator. Unless CDFW recommends alternative mitigation through the consultation, the following measures shall apply:

- Twenty-four hours before the commencement of ground-disturbing activity (i.e. clearing, grubbing, or grading) within 1,650 feet of Mather Lake, a qualified biologist shall perform a survey for western pond turtle. The survey shall include all suitable upland and aquatic habitat which is within 1,650 feet of all proposed construction areas. The biologist shall supply a brief written report (including date, time of survey, survey method, name of surveyor and survey results) to the County before ground disturbing activity.
- If western pond turtles are found during the survey, activities shall not commence until the animal has moved out of the construction area on its own or CDFW grants permission for a qualified biologist to move the animal out of the construction area and into a suitable habitat area.
- If a western pond turtle is encountered during active construction, all construction shall cease until the animal has moved out of the construction area on its own or CDFW grants permission for a qualified biologist to move the animal out of the construction area and into a suitable habitat area. California Fish and Wildlife and the County Environmental Coordinator shall be notified within 24-hours that a turtle was encountered.
- If a nest with eggs or hatchlings is found during surveys or construction, all activity shall cease until appropriate procedures for avoidance or handling established during consultation with CDFW can be implemented. CDFW and the County Environmental Coordinator shall be notified within 24 hours of nest discovery.

Implementation of Mitigation Measure BR-11 would reduce impacts on western pond turtle to **less than significant with mitigation** because project proponents would be required to survey for and avoid western pond turtles and active nests through consultation with CDFW so that mortality and loss of reproduction is minimized to the extent feasible.

IMPACT: LOSS OF SWAINSON'S HAWK AND THEIR HABITAT

Evaluation of impacts to Swainson's Hawk and their habitat were analyzed in the Mather Field EIR based upon separate discussions of nesting and foraging habitat. This EIR is also organized in the same manner.

SWAINSON'S HAWK

The Swainson's hawk (Buteo swainsoni) is listed as a Threatened species by the State of California and is a candidate for federal listing as threatened or endangered. It is a migratory raptor typically nesting in or near valley floor riparian habitats during spring and summer months. Swainson's hawks were once common throughout the state, but various habitat changes, including the loss of nesting habitat (trees) and the loss of foraging habitat through the conversion of native Central Valley grasslands to certain incompatible agricultural and urban uses has caused an estimated 90% decline in their population.

Swainson's hawks feed primarily upon small mammals, birds, and insects. Their typical foraging habitat includes native grasslands, alfalfa and other hay crops that provide suitable habitat for small mammals. Certain other row crops and open habitats also provide some foraging habitat. The availability of productive foraging habitat near a Swainson's hawk's nest site is a critical requirement for nesting and fledgling success. In central California, about 85% of Swainson's hawk nests are within riparian forest or remnant riparian trees. CEQA analysis of impacts to Swainson's hawks consists of separate analyses of impacts to nesting habitat and foraging habitat.

IMPACT METHODOLOGY

NESTING HABITAT

For determining impacts to and establishing mitigation for nesting Swainson's hawks in Sacramento County, CDFW recommends implementing the measures set forth in the Fish and Wildlife Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California (November 1, 1994). These state that no intensive new disturbances, such as heavy equipment operation associated with construction, should be initiated within 0.25 mile of an active Swainson's hawk nest in an urban setting or within 0.5 mile in a rural setting between March 1 and September 15.

FORAGING HABITAT

CDFW recommends evaluating projects for foraging habitat impacts when they are within 10 miles of a known nest site.

Statewide, CDFW recommends implementing the measures set forth in the Fish and Wildlife Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (Buteo swainsoni) in the Central Valley of California (November 1, 1994) for determining impacts to Swainson's hawk foraging habitat unless local jurisdictions develop an individualized methodology designed specifically for their location. Sacramento County developed such a methodology and received confirmation from CDFW in May of 2006

that the methodology is a better fit for unincorporated Sacramento County and should replace the statewide, generalized methodology for determining impacts to foraging habitat.

Swainson's hawk foraging habitat value is greater in large expansive open space and agricultural areas than in areas which have been fragmented by agricultural-residential or urban development. The methodology for unincorporated Sacramento County is based on the concept that impacts to Swainson's hawk foraging habitat occur as properties develop to increasingly more intensive uses on smaller minimum parcel sizes. Therefore, the methodology relies mainly on the minimum parcel size allowed by zoning to determine habitat value. For the purpose of the methodology, properties with zoning of AG-40 and larger are assumed to maintain 100% of their foraging habitat value and properties with AR-5 zoning and smaller are assumed to have lost all foraging habitat value. Table BR-5 below illustrates the continuum between AG-40 and AR-5 that represents the partial loss of habitat value that occurs with fragmentation of large agricultural land holdings. The large, 50% loss of habitat value between AG-20 and AR-10 is due to the change in land use from general agriculture to agricultural-residential.

Table BR-5: Swainson's Hawk Foraging Habitat Value by Zoning Category

Zoning Category	Habitat Value Remaining
AG-40 and above (e.g., AG-80, 160 etc.)	100%
AG-20	75%
AR-10	25%
AR-5 and smaller (e.g., AR-2, 1 or RD-5, 7, 10, 15, 20 etc.)	0%

IMPACT EVALUATION

The Mather South Project would result in the development of a community with up to 3,522 residential dwelling units of various densities (multi-family, detached, and attached single-family), a 28-acre environmental education campus including 200 multi-family dwelling units, a 21-acre research and development park, two elementary schools, a 6-acre community center, 21 acres of commercial-retail with up to 225,000 square feet (sf) of retail space, 44 acres of parkland including 26 acres of neighborhood parks and a 17-acre community park, and 210 acres of open space areas that include a 53-acre portion of the Mather Preserve west of Zinfandel Drive, as well as other natural preserves and drainage corridors, stormwater quality and detention basins, landscape buffers, and public utility corridors all connected by multi-use pedestrian and bicycle trails. As described above in the table, properties with AR-5 zoning and smaller are assumed to have lost all foraging habitat value. This would be generally true of the entirety of the Plan Area after development with the exception of **the 53.31 acres of Natural Preserve added to the Mather Preserve on the west side of Zinfandel Drive (See Table PD-1 on page 1-9 and Plate PD-9 on page 1-14)** ~~open space areas~~. **The other open space areas would not have the size, management or continuity to be considered long-term foraging habitat. Therefore the project would have a 795 acre impact to Swainson's hawk foraging habitat.**

The Mather South project is a portion of the larger Mather Field Specific Plan area, which includes the 1,383 acre Mather Preserve. The Mather Preserve was required to be set aside for mitigation of impacts to biological resources as part of the overall redevelopment strategy of the former Air Force base. The preserve contains 76.9 wetted acres of wetlands, vernal pools, vernal swales, and streams, and 1,306.1 acres of upland habitat that is similar to the habitat that exists on the Mather South project site in terms of foraging habitat value.

Currently, there are numerous trees in the Plan Area that provide potential nest sites for Swainson's hawk. Project implementation would result in removal of these ~~trees and removal of approximately 592 acres of annual grassland foraging habitat~~, which could result in mortality of individuals and nest abandonment. A pair of Swainson's hawks were observed visiting a nest and defending territory in the Plan Area from April 29 to June 13, 2014 (Mather Stewardship Network 2014). Although eggs and young were not confirmed at the nest, nesting is probable in the Plan Area and has been documented nearby along White Rock Road. The CNDDB (2018) contains 14 nesting records between 1 and 5 miles of the Plan Area and 27 nesting records between 5 and 10 miles of the Plan Area. Project construction could disturb active nests on or near the construction area, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs. Additionally, construction noise can cause abandonment of nests up to 0.5 miles away in rural settings and 0.25 mile away in more urban settings. In addition, noise, lighting, and presence of humans and their pets could degrade the quality of nesting habitat on adjacent preserve lands after the project is built out. Approximately 1,381 acres of Swainson's hawk foraging habitat will be protected under a permanent conservation easement in the Mather Preserve to compensate for loss the of foraging habitat in the portions of Mather Field Specific Plan Area planned for development, including the Plan Area. However, even with this habitat preservation, there would be a net loss of foraging habitat available to pairs nesting within 10 miles. Loss of foraging habitat can displace nesting pairs of Swainson's hawks or reduce reproductive success of pairs nesting within 10 miles. Displacing a pair from its nesting territory could result in loss of reproduction for one or more years while the pair seeks a new nest site and new nesting territory and there is no guarantee they would find a new nesting territory that can support successful breeding. Reproductive success decreases for Swainson's hawks as distance from foraging habitat increases and availability of suitable nest trees is a limiting factor. Loss of active nests, chicks and eggs, displacement of breeding pairs, and loss of reproductive success due to loss of foraging habitat would contribute to the continuing decline of a species that is listed as threatened under CESA, has experienced an estimated 90 percent decline in statewide population numbers, and that is continuing to lose valuable habitat from its core population centers in the Sacramento Valley. The loss of nesting and foraging habitat increases the potential for this species becoming endangered and decreases the potential for recovery. Therefore, direct and indirect impacts on Swainson's hawk would be potentially significant.

MITIGATION MEASURE

BR-12. Avoid Swainson's Hawk Nests

- Implement Mitigation Measure BR-4: Worker Environmental Awareness Program
- Tree removal shall be conducted during the non-breeding season for Swainson's hawk (generally between September 1 and February 28)
- Before initiating any construction activities during the Swainson's hawk breeding season (March 1 through August 31), project proponents shall retain a qualified wildlife biologist with knowledge of Swainson's hawk to conduct nesting surveys to identify active nests on and within 0.5 mile of the Plan Area.
- Surveys shall be conducted in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000) or according to updated methodologies issued by CDFW. According to current guidelines, the biologist will use binoculars during the survey to inspect all large trees and document any Swainson's hawk nests that occur in the Plan Area or within 0.5 mile. If surveys conclude that Swainson's hawk nests occur onsite, and are occupied, the following minimization measures shall be implemented:
    - A no disturbance buffer shall be established around active nest sites. Project activity shall not commence within the buffer areas until a qualified biologist has determined, in coordination with CDFW, that the young have fledged, the nest is no longer active, or reducing the buffer would not likely result in nest abandonment. CDFW guidelines recommend implementation of 0.5-mile-wide buffer for Swainson's hawk, but the size of the buffer may be adjusted if a qualified biologist and the County, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during and after construction activities shall be required if the activity has potential to adversely affect the nest.

    - Active nests shall be monitored by a qualified biologist during construction activities that have potential to adversely affect nesting. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer will remain in place until the chicks have fledged or as otherwise determined appropriate by a qualified biologist. Once the young have fledged, project activities may proceed normally.

Implementing Mitigation Measure BR-12 **along with the preservation of the 1,383.2 acre Mather Preserve[1] as part of the larger Mather Field Project** would reduce significant impacts on Swainson's hawk but not necessarily to a less-than-significant level because there has already been rapid and widespread loss of foraging habitat for

[1] The Mather Preserve was protected under a perpetual conservation easement approved and recorded in June of 2019.

this species in the region, substantial loss of foraging habitat would occur in the local area through currently planned projects, and the Sacramento Valley supports one of the highest breeding concentrations of this species. There is a finite amount of land available within the foraging range of the local nesting population and even with preservation of foraging habitat to compensate for losses that would occur in the project area; there would still be an overall net loss of foraging habitat available to the local nesting population. This net loss would undoubtedly result in reduced reproductive success and displacement of nesting pairs thereby contributing to the decline of Swainson's hawk populations in the region. The impact on Swainson's hawk would remain **significant and unavoidable**.

IMPACT: LOSS OF TRICOLORED BLACKBIRD NESTING COLONIES

There is no suitable nesting habitat for tricolored blackbird in the Plan Area, so the project would have no direct impacts on this species; however, the species has been observed nearby at Mather Lake and may nest there. Tricolored blackbirds nest in large colonies and may forage up to approximately 3 miles from nest sites; however, mostly forage within 1 to 1.5 miles of an active nest colony. Large flocks of tricolored blackbirds were observed foraging in the Plan Area by the Mather Stewardship Network from May to June 2014 and the Plan Area is within 1.5 miles of potential nesting habitat at Mather Lake, and within 3 miles of known nesting colonies adjacent to Jackson Highway and Excelsior Road. Increased noise and human activity during construction that occurs during the breeding season (generally March through August) could disturb nesting tricolored blackbirds if an active colony is located near (within 0.25 mile) the construction area. These activities could result in nest abandonment and the incidental loss of fertile eggs or nestlings. The loss of foraging habitat from the Plan Area would not be expected to result in a loss of reproductive success for a nesting colony because the Mather Preserve and other existing and planned preserves in the vicinity would continue to provide adequate foraging habitat to support the local population and nesting colonies would not be displaced due to this loss of foraging habitat, but project construction could cause net abandonment if a colony is nesting at Mather Lake. Abandonment of an active tricolored blackbird colony and associated loss of numerous nests containing eggs or young could result in a substantial decline in the local nesting population of tricolored blackbirds and contribute to the statewide decline of this species that has recently been listed as threatened by the California Fish and Game Commission because of rapid declines in population numbers and substantial widespread habitat loss. Therefore, this impact would be potentially significant.

MITIGATION MEASURE

BR-13. Avoid Tricolored Blackbird Nesting Colonies

- Implement Mitigation Measure BR-4: Worker Environmental Awareness Program
- For any construction activities proposed within 0.25 mile of Mather Lake during the tricolored blackbird nesting season (March 15 to August 31), a qualified biologist shall survey Mather Lake and a 0.25-mile buffer no more than 48 hours before the onset of activities for signs of tricolored blackbird individuals or nesting/colonial activity.

- If construction activities are delayed or suspended for more than 15 days, an additional preconstruction tricolored blackbird survey will be conducted. If active tricolored blackbird nests are found within 0.25 mile of the project footprint during the nesting season (March 15 to August 31), then no construction activities shall proceed within 0.25 mile of the nest site until the end of the breeding season or until a qualified biologist, in consultation with CDFW, has determined that the young have fledged and moved out of the disturbance area. The buffer distance may be reduced if a qualified biologist, in consultation with CDFW, determines that such an adjustment would not be likely to affect the nesting colony.
- Monitoring of the nesting colony by a qualified biologist during construction activities shall be required if the biologist determines a particular activity has the potential to adversely affect the nest, particularly if the buffer has been reduced below 0.25 mile. If construction activities cause nesting birds to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases.

Implementing Mitigation Measure BR-13 would reduce potentially significant impacts on tricolored blackbird to **less than significant with mitigation** because these measures would require that active nests and nesting colonies in the project vicinity be identified and avoided or monitored so that project construction would not result in nest abandonment and loss of eggs or young.

IMPACT: LOSS OF BURROWING OWL

Project implementation would destroy potential nesting and wintering habitat for burrowing owl. This species has not been reported in the Plan Area, but nesting has been documented on the Mather Preserve west of the Plan Area (WRA 2004a, CNDDB 2018) and there are ground squirrel burrows and debris piles (from former military facilities) in the Plan Area that could be used by burrowing owls. Much of the site is heavily overgrown with dense grasses that reduce habitat quality for burrowing owls, and ground squirrel burrows are limited. Nonetheless, their potential presence cannot be ruled out without protocol-level surveys and banks of seasonal streams are often used by burrowing owls. Adults, eggs, and juveniles could be killed during site grading and other ground disturbance that destroys occupied burrows or nest sites. Burrowing owls need burrows at all times to survive and displacing individuals from their burrows can result in indirect impacts such as predation, increased energetic costs, increased stress, and risks associated with having to find and compete for burrows, all of which can lead to take or reduced reproduction. Construction disturbances could also cause pairs nesting nearby to abandon their nests resulting in mortality of chicks and eggs. The loss of occupied burrowing owl habitat or mortality of adults, chicks, or eggs would be a potentially significant impact.

MITIGATION MEASURES

BR-14. Conduct Burrowing Owl Surveys and Develop an Exclusion and Relocation Plan

Before any ground disturbing activities within 500 feet of potential burrowing owl habitat (i.e., annual grassland containing ground squirrels or debris piles, banks of streams/creeks) the project proponent shall hire a qualified biologist to conduct surveys in accordance with Appendix D of CDFW's Staff Report on Burrowing Owl Mitigation (2012). Survey methods shall include the following:

- An initial survey for burrows, owls, or their sign shall be conducted by walking transects through the entire project site and surrounding areas of potential habitat within 500 feet of the project footprint.
- Survey transects shall be spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines should be no more than 70 feet and should be reduced as needed to account for differences in terrain, vegetation density, and ground surface visibility. To efficiently survey projects larger than 100 acres, it is recommended that two or more surveyors conduct concurrent surveys. Surveyors should maintain a minimum distance of 160 feet from any owls or occupied burrows. It is important to minimize disturbance near occupied burrows during all seasons.
- If no occupied burrows or burrowing owls are found in the survey area, a letter report documenting survey methods and findings shall be submitted to the County Environmental Coordinator and no further mitigation is necessary.
- If occupied burrows, burrowing owls, or their sign are found, then a complete burrowing owl survey is required. This consists of a minimum of four site visits conducted on four separate days, which must also be consistent with the Survey Method, Weather Conditions, and Time of Day sections of Appendix D of CDFW's Staff Report on Burrowing Owl Mitigation (2012). Submit a survey report to the County Environmental Coordinator which is consistent with the Survey Report section of Appendix D of CDFW's Staff Report.
- If an active burrow is identified near a proposed work area and work cannot be conducted outside of the nesting season (February 1 to August 31), a qualified biologist will establish a no-activity zone that extends 150 to 1,500 feet around the burrow, depending on nesting stage and level of disturbance. If burrowing owls are present at the site during the non-breeding season (September 1 through January 31), a qualified biologist will establish a no-activity zone that extends a minimum of 150 feet around the burrow.
- If the designated no-activity zone for breeding or non-breeding burrowing owls cannot be established because an active burrow is located within the project work area, a wildlife biologist experienced in burrowing owl behavior will evaluate site-specific conditions and, in coordination with CDFW, recommend a smaller buffer (if possible) that still minimizes the potential to disturb the owls (and is deemed to still allow reproductive success during the breeding season). The site-specific buffer will consider the type and extent of the proposed activity occurring near the occupied burrow, the duration and timing of the activity, the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity to background activities. Additional measures may be identified by the designated

biologist or CDFW including regular monitoring of the owls by a qualified biologist, modified construction activity schedule in proximity to the owls, or establishment of a barrier between construction and the occupied burrow.

- If burrowing owls are present within the construction area and cannot be avoided during the non-breeding season (generally September 1 through January 31), owls will be relocated to suitable habitat outside of the project site using passive or active methodologies developed in consultation with CDFW and may include active relocation to the Mather Preserve if approved by CDFW and the County Environmental Coordinator. No burrowing owls shall be excluded from occupied burrows until a burrowing owl exclusion and relocation plan is developed by the project proponent and approved by the County and CDFW. Typically, owls maintain multiple burrows and refuge areas within their foraging area during the non-breeding season.
- Passive or active relocation also may be used during the breeding season (February 1 through August 30) if a qualified biologist, coordinating with CDFW, determines through site surveillance that the burrow is no longer occupied by burrowing owl adults, young, or eggs. Once the fledglings are capable of independent survival, the owls shall be relocated to suitable habitat outside the project site in accordance with a burrowing owl exclusion and relocation plan developed in consultation with CDFW, and the burrow shall be destroyed to prevent owls from reoccupying it. No burrowing owls shall be excluded from occupied burrows until a burrowing owl exclusion and relocation plan is approved by CDFW and the County Environmental Coordinator. Passive relocation shall be accomplished by installing one-way doors (e.g., modified dryer vents or other CDFW-approved method). The one-way doors shall be left in place for a minimum of 3 days and will be monitored daily to verify that the one-way door stays in place and that at the end of the 3 days, the owls have left the burrow. The burrow shall be excavated using hand tools, and a section of flexible plastic pipe (at least 3 inches in diameter) will be inserted into the burrow tunnel to maintain an escape route for any animals that may be inside the burrow.

BR-15. Compensate for Loss of Occupied Burrowing Owl Habitat

If active burrowing owl burrows, or burrow surrogates (e.g., debris piles, culvert pipes) are found on the site and are destroyed by project implementation, the project proponent shall mitigate the loss of occupied habitat in accordance with guidance provided in the CDFW 2012 Staff Report or the most recent CDFW protocols, which states that permanent impacts to nesting, occupied and satellite burrows, and burrowing owl habitat shall be mitigated such that habitat acreage, number of burrows, and burrowing owls impacted are replaced through permanent conservation of comparable or better habitat with similar vegetation communities and burrowing mammals (e.g., ground squirrels) present to provide for nesting, foraging, wintering, and dispersal. The project proponent shall retain a qualified biologist to develop a burrowing owl mitigation and management plan that incorporates the following goals and standards:

- Mitigation lands shall be selected based on comparison of the habitat lost to the compensatory habitat, including type and structure of habitat, disturbance levels, potential for conflicts with humans, pets, and other wildlife, density of burrowing owls, and relative importance of the habitat to the species range wide. The Mather Preserve may be used as mitigation habitat if it is demonstrated to support comparable habitat values and functions for burrowing owl as the habitat lost as a result of the project.
- If feasible, mitigation lands shall be provided adjacent or proximate to the site so that displaced owls can relocate with reduced risk of take. Feasibility of providing mitigation adjacent or proximate to the project site depends on availability of sufficient suitable habitat to support displaced owls that may be preserved in perpetuity. The Mather Preserve may be used as mitigation habitat if it is demonstrated to support comparable habitat values and functions for burrowing owl as the habitat lost as a result of the project and is sufficient to support owls displaced from the project site.
- If suitable habitat is not available in the Mather Preserve, or is not sufficient to fully compensate for the loss of habitat from the project site, additional mitigation may be accomplished through purchase of mitigation credits at a CDFW-approved mitigation bank, if available. If mitigation credits are not available from an approved bank, alternative mitigation sites and acreage shall be determined in consultation with CDFW.

Implementing Mitigation Measures BR-14 and BR-15 would reduce potentially significant impacts on burrowing owls to **less than significant with mitigation** because these measures would require that active burrows in or near the project site be identified and avoided or monitored so that project construction would not result in nest abandonment and loss of eggs or young, or displacement and mortality of wintering adults, and would require compensation for loss of wintering or breeding habitat.

IMPACT: DISTURBANCE OR LOSS OF GRASSHOPPER SPARROW, SHORT-EARED OWL, NORTHERN HARRIER, WHITE-TAILED KITE, COOPER'S HAWK, AND LOGGERHEAD SHRIKE NESTS AND FORAGING HABITAT

Northern harrier, white-tailed kite, and loggerhead shrike have been documented foraging and perching in the Plan Area and are likely nesting in the Plan Area based on behaviors observed by the Mather Stewardship Network in 2014. Short-eared owl **and Cooper's hawk** has been documented at Mather Field historically and grasshopper sparrow could potentially nest in the Plan Area. The loss of foraging habitat from the Plan Area would not be expected to result in a loss of reproductive success for any of these species because the Mather Preserve and other existing and planned preserves in the vicinity would continue to provide adequate foraging habitat to support local population numbers and individuals would not be permanently displaced from the area. This would also be true for ferruginous hawk, a species covered under the SSHCP for preservation of winter foraging habitat. Ferruginous hawk has no protective status and does not breed in California. Project construction could remove or disturb active nests of grasshopper sparrow, short-eared owl, northern harrier, white-tailed kite, or loggerhead

shrike potentially resulting in nest abandonment by the adults and mortality of chicks and eggs. Loss of chicks and eggs of these California species of special concern could reduce population levels and contribute to a trend toward these species becoming threatened or endangered in the future. This impact would be potentially significant.

MITIGATION MEASURE

BR-16. Conduct Preconstruction Surveys for Nesting Birds

- Implement Mitigation Measure BR-4: Worker Environmental Awareness Program
- Vegetation removal shall be carried out during the non-breeding season for birds and raptors (February 1 to August 31) to the extent feasible.
- Before initiating any ground disturbing during the nesting season for these species in the Sacramento area (generally February 1 to August 31), the project applicant shall retain a qualified wildlife biologist with knowledge of the relevant species to conduct nesting surveys within 14 days before the start of construction or vegetation removal.
- Surveys shall include a search of all trees, shrubs, wetlands, and grassland vegetation that provide suitable nesting habitat in the construction area and within 500 feet of the construction area.
- If an active nest is found in the survey area, a buffer shall be established around the nest site to avoid disturbance or destruction of the nest until the end of the breeding season (August 31) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the project site (this date varies by species). The extent of these buffers shall be determined by the biologist and shall depend on the bird species, level of construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species. No project activity shall commence within the buffer areas until a qualified biologist has determined, in coordination with CDFW, the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment.
- Monitoring of active nests by a qualified biologist during construction activities shall be required if the biologist determines a particular activity has the potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases.

Implementing Mitigation Measure BR-16 would reduce potentially significant impacts on nesting bird species of special concern to **less than significant with mitigation** because these measures require that active nests in the construction area or vicinity be identified and avoided or monitored so that project construction would not result in nest abandonment and loss of eggs or young.

IMPACT: LOSS OF AMERICAN BADGER HABITAT

Annual grassland and scrub, as well as open portions of cottonwood woodland throughout the Plan Area represents suitable habitat for American badger and two potential badger dens have been observed in the Plan Area and one in the adjacent Mather Preserve (WRA 2004a, Sacramento County 2014). Therefore, there is high potential for this species to den and forage in the Plan Area and project development could result in direct mortality of individuals or loss of natal dens resulting in death of young either directly through destruction of the den or indirectly through disturbance that causes the mother to abandon her kits. The loss of foraging habitat from the Plan Area is not expected decrease survival or reproduction of the species in the area because the Mather Preserve and other existing and planned preserves in the vicinity would continue to provide adequate foraging habitat to support the local population. American badger has experienced drastic declines, particularly in the Central Valley, and has been extirpated from many areas in southern California (Williams 1986). Loss of individuals within the project site could diminish the local population of this species and lower reproductive potential, which could contribute to further declines. This impact would be potentially significant.

MITIGATION MEASURE

BR-17. Protect Active American Badger Den Sites

- Implement Mitigation Measure BR-4: Worker Environmental Awareness Program
- Before construction activities within suitable habitat for American badger, a qualified biologist shall conduct surveys to identify any American badger burrows/dens. These surveys shall be conducted not more than 15 days before the start of construction. If occupied burrows are not found, further mitigation will be not required. If occupied burrows are found, CDFW shall be notified and impacts to active badger dens shall be avoided by establishing exclusion zones around all active badger dens, within which construction-related activities shall be prohibited until denning activities are complete or the den is abandoned. A qualified biologist shall monitor each den once per week to track the status of the den and to determine when a den area has been cleared for construction.

Implementing Mitigation Measure BR-16 would reduce potentially significant impacts on American badger to **less than significant with mitigation** because these measures require that active dens in the construction area or vicinity be identified and avoided and monitored so that project construction would not result in abandonment of young or direct mortality of individuals.

IMPACT: HAVE SUBSTANTIAL ADVERSE EFFECT ON RIPARIAN HABITAT OR A SENSITIVE NATURAL COMMUNITY

The Plan Area does not contain designated sensitive natural communities other than vernal pool communities, which are addressed under impacts to vernal pool invertebrate habitat and impacts to wetlands. Additionally, while cottonwood woodland is traditionally a riparian community, the cottonwood woodland in the Plan Area is not associated with the bed and bank of a river, stream, or other water body and is not connected to the

active floodplain of the American River. While the cottonwood woodland provides some habitat values of traditional riparian habitats (primarily nest trees), the hydrology that supports regeneration of riparian vegetation is lacking from cottonwood woodland habitat areas, the community does not support the structural diversity of typical riparian habitats, and the riparian vegetation is not associated with streambeds and banks as generally required for jurisdiction under Section 1602 of the California Fish and Game Code. Therefore, the project would not have a substantial adverse effect on riparian habitats and this impact is **less than significant**.

MITIGATION MEASURES

None required.

IMPACT: LOSS OF WETLANDS AND WATERS

Project implementation would result in direct fill of 14.53 acres of wetlands and other waters that constitute suitable vernal pool invertebrate habitat, as shown in Table BR-4. In addition to the 14.53 acres of fill shown in Table BR-4, the project would fill 0.56 acres of drainage ditches that qualify as wetlands under USACE criteria but are not suitable habitat for vernal pool invertebrates. Therefore, project implementation would result in direct loss of a total of approximately 15.09 acres of waters of the United States consisting of 14.72 acres of wetlands and 0.37 acre of other waters (stream/creek). The majority of stream/creek habitat in the Plan Area would be ~~preserved~~ **avoided** within the Open Space Drain land use and 4.29 acres of the wetland habitat would be preserved in the Open Space preserves. There is a total of 24.92 acres of potential waters of the United States in the Plan Area, of which approximately 9.83 acres would be preserved onsite.

As discussed under the analysis of impacts to vernal pool invertebrate habitat, project implementation could also have indirect effects on water quality and hydrology caused by urban runoff, erosion, and siltation. As determined in Chapter 12, Hydrology, Drainage, and Water Quality, compliance with the requirements of The Sacramento County Stormwater Ordinance (Sacramento County Code 15.12), Land Grading and Erosion Control Ordinance (Sacramento County Code 16.44), and the State's General Stormwater Permit for Construction Activities, preparation and implementation of a site-specific SWPPP and Best Management Practices, implementation of Low Impact Development Standards, and implementation of the drainage plan outlined in the Storm Drainage Master Plan for Mather South (MacKay & Somps 2017), along with implementation of Mitigation Measure HY-1, project impacts on water quality would be less than significant. The project would also incorporate hydromodification mitigation basins for the on-site watersheds, which are designed according to the 2013 revised draft Sacramento County Stormwater Quality Partnerships HMP. These basins would capture the required Storm Water Quality Volume and summer nuisance flows, as described in Chapter 12, Hydrology, Drainage, and Water Quality. These detention basins are designed as combination water quality / hydromodification / flood control basins. The storm drain pipes for each detention basin's shed areas discharge into a permanent wet water quality basin which treats the development runoff through gravitational settling and biological processes. The Storm Drainage Master Plan for

Mather South (MacKay & Somps 2017) is consistent with the requirement of BR-6 of the Mather Field EIR to prepare a comprehensive drainage plan and demonstrates that the project can develop without impacting the predevelopment conditions in the downstream reaches of Morrison Creek, Todd Creek, Frye Creek, and Mather Lake and, therefore, project development would not result in hydromodification of offsite waters because of stormwater or nuisance runoff. However, indirect impacts from intrusion of humans and domestic animals; litter and dumping; alteration of individual wetland watershed area; and introduction of invasive plant species could still degrade habitat for vernal pool invertebrates in offsite wetlands and wetlands retained onsite.

The permanent loss and degradation of USACE jurisdictional vernal pools and other wetland habitats and other waters of the United States (e.g., streams/creeks) that would occur with project implementation would result in a substantial adverse effect on Federally protected waters of the United States, including wetlands, as defined by Section 404 of the CWA and a substantial loss of wetland functions and values from the Morrison Creek watershed. Therefore, both direct and indirect impacts would be potentially significant.

MITIGATION MEASURES

BR-18. Implement BR-1 through BR-5

BR-19. Compensate for Loss of Wetlands/Waters not Compensated under BR-2

All necessary permits under Section 1602 of the California Fish and Game Code (Lake and Streambed Alteration Agreement) and Sections 401 and 404 of the CWA or the state's Porter-Cologne Act shall be obtained and all permit conditions implemented as will the conditions and requirements of all other state and federal permits obtained for the project.

The project applicant of any project that would result in removal of drainage ditches shall compensate for the permanent fill of waters of the United States and waters of the state. The minimum compensation ratio to achieve no net loss of functions and values for will be 1:1 (1 acre of wetland credit for every 1 acre of permanent impact). Compensation may be achieved through one or a combination of the following options:

- Purchase credits for created riparian stream channel at a locally approved mitigation bank. Written evidence will be provided to the resource agencies that compensation has been established through the purchase of mitigation credits.
- Compensate out-of-kind for loss of drainage ditch by implementing other compensatory mitigation for wetlands, as described in Mitigation Measure BR-2. The acreage required for compensation for loss of drainage ditches will be added to the acreage for mitigation of loss of vernal pool invertebrate habitat.

Implementation of Mitigation Measures BR-1 through BR-5 and BR-19 would reduce impacts on wetlands and waters to **less than significant with mitigation** because project applicants would be required to avoid and minimize indirect impacts during construction and provide compensation for the loss and degradation of wetlands and

waters through creation of new habitat and permanent preservation of wetland habitat in the same watershed as habitat loss (i.e., Morrison Creek watershed) such that no net loss of habitat acreage and function results within the watershed. Preservation habitat included as part of compensatory mitigation is of higher value than habitat that would be lost because of project implementation because it is within the Mather Core Area and designated critical habitat whereas the Plan Area is not within the core area or designated critical habitat and the Mather Preserve generally contains higher density and higher functioning wetland habitats than the Plan Area. Additionally, the preserved habitat would be managed specifically for the benefit of vernal pool invertebrates though a wetlands management plan.

IMPACT: INTERFERE WITH THE MOVEMENT OF ANY NATIVE RESIDENT OR MIGRATORY FISH OR WILDLIFE SPECIES OR IMPEDE USE OF WILDLIFE NURSERY SITES

Although the project would convert approximately 706 acres of undeveloped habitat to developed land uses, the Plan Area does not include areas mapped as important to wildlife movement. The open space preserve areas are designed to maintain the drainage corridors, which would allow wildlife species to move through the Plan Area from existing preserves (Anatolia) to the east to the Mather Preserve to the west, as well as planned preserves to the south. Therefore, the project would not interfere substantially with wildlife movement.

The Plan Area contains habitat for common nesting birds protected under California Fish and Game Code Section 3503 and the Migratory Bird Treaty Act. Therefore, impacts would be potentially significant.

MITIGATION MEASURE

BR-20. Implement BR-16

Implementing Mitigation Measure BR-16 would reduce potentially significant impacts on common nesting birds to **less than significant with mitigation** because these measures require that active nests in the construction area or vicinity be identified and avoided or monitored so that project construction would not result in nest abandonment and loss of eggs or young.

IMPACT: CONFLICT WITH SACRAMENTO TREE ORDINANCE

As noted in the Environmental Setting, a comprehensive tree inventory included as Appendix BIO-1, was conducted in the Plan Area in 2014 and identified 455 native trees with a DBH of 4 inches or greater (assumed to be 6 inches or greater now) of which 453 are Fremont cottonwood and two are Pacific willow. The Plan Area also contains 22 nonnative trees with a DBH of 6 inches or greater. **Although Fremont cottonwood is a native tree species, they are not suitable to be retained in an urban environment due to their weak branch strength, high root damage potential, and high allergy health hazard (https://selectree.calpoly.edu/tree-detail/Populus-fremontii).** Project implementation is expected to result in removal of nearly all native and nonnative trees from the Plan Area, though a few may be retained in the drainage corridor. In addition, County General Plan policies require that removal of nonnative tree canopy for

development shall be mitigated by creation of new tree canopy equivalent to the acreage of nonnative tree canopy removed. New tree canopy acreage shall be calculated using the 15-year shade cover values for tree species. Loss of native and nonnative trees could conflict with the Sacramento Tree Ordinance and General Plan policies. This impact would be potentially significant.

MITIGATION MEASURES

BR-21. Compensate for Native Tree Removal

Before initiating development projects, project applicants shall submit an arborist report for the project impact areas when appropriate habitat exists. The report shall include the species, diameter, dripline, and health of all trees 6 inches in diameter at breast height or larger and shall be prepared by an ISA certified arborist. The report shall include an exhibit that shows the trees and their driplines in proximity to the project improvements. The report shall identify any tree proposed for removal and shall quantify any encroachment from project equipment or facilities within driplines of native trees.

A) With the exception of the native trees removed and compensated for through Part B below, all healthy native trees that are 6 inches DBH or larger on the project site, all portions of adjacent off-site healthy native trees that are 6 inches DBH or larger which have driplines that extend onto the project site, and all off-site healthy native trees that are 6 inches DBH or larger which may be impacted by utility installation and/or improvements associated with this project, shall be preserved and protected as follows:

1. A circle with a radius measurement from the trunk of the tree to the tip of its longest limb shall constitute the dripline protection area of the tree. Limbs must not be cut back to change the dripline. The area beneath the dripline is a critical portion of the root zone and defines the minimum protected area of the tree. Removing limbs which make up the dripline does not change the protected area.

2. Chain link fencing or a similar protective barrier shall be installed one foot outside the driplines of the native trees before initiating project construction, to avoid damage to the trees and their root systems.

3. Any removal of paving or structures (i.e. demolition) that occurs within the dripline of a protected native tree shall be done under the direct supervision of a certified arborist. To the maximum extent feasible, demolition work within the dripline protection area of the native tree shall be performed by hand. If the certified arborist determines that it is not feasible to perform some portion(s) of this work by hand, then the smallest/lightest weight equipment that will adequately perform the demolition work shall be used.

4. No signs, ropes, cables (except cables which may be installed by a certified arborist to provide limb support) or any other items shall be attached to the native trees.

5. No vehicles, construction equipment, mobile home/office, supplies, materials or facilities shall be driven, parked, stockpiled or located within the dripline of the native trees.

6. Any soil disturbance (scraping, grading, trenching, and excavation) is to be avoided within the dripline of the native trees. Where this is necessary, an ISA Certified Arborist will provide specifications for this work, including methods for root pruning, backfill specifications and irrigation management guidelines.

7. Before grading, excavation or trenching within five feet outside the driplines of protected native trees, root pruning shall be required at the limits of grading or excavation to cut roots cleanly to a depth of the excavation or 36 inches (whichever is less). Roots shall be cut by manually digging a trench and cutting exposed roots with a saw, vibrating knife, rock saw, narrow trencher with sharp blades or other approved root-pruning equipment under the supervision of an ISA Certified Arborist.

8. All underground utilities and drain or irrigation lines shall be routed outside the driplines of native trees. If lines must encroach upon the dripline, they should be tunneled or bored under the tree under the supervision of a certified arborist.

9. Any herbicides placed under paving materials must be safe for use around trees and labeled for that use. Any pesticides used on site must be tree-safe and not easily transported by water.

10. Drainage patterns on the site shall not be modified so that water collects or stands within, or is diverted across, the dripline of the native tree.

11. No sprinkler or irrigation system shall be installed in such a manner that it sprays water within the dripline of the native tree.

12. Tree pruning required for clearance during construction must be performed by an ISA Certified Arborist or Tree Worker.

13. Landscaping beneath the native tree may include non-plant materials such as boulders, decorative rock, wood chips, organic mulch, non-compacted decomposed granite, etc. Landscape materials shall be kept two (2) feet away from the base of the trunk. The only plant species which shall be planted within the dripline of the native tree are those which are tolerant of the natural semi-arid environs of the trees. Limited drip irrigation approximately twice per summer is recommended for the understory plants.

B) To the maximum extent feasible, all onsite healthy native trees shall be protected and preserved. Any substantial (>20 percent) encroachment and/or removal of native trees shall be compensated by planting native trees equivalent to the DBH inches lost, based on the ratios listed below, at locations that are authorized by the Environmental Coordinator. On-site preservation of native trees that are less than 6 inches (<6 inches) DBH, may also be used to meet this compensation requirement. Encroachment of over

20 percent within the dripline radius of native trees will require compensatory mitigation based on the percentage of encroachment multiplied by the DBH. Encroachment over 50 percent will require compensation for the entire tree.

Equivalent compensation based on the following ratio is required:

- one preserved native tree < 6 inches DBH on-site = 1 inch DBH (subject to the approval of the Environmental Coordinator)
- one D-pot seedling (40 cubic inches or larger) = 1 inch DBH
- one 15-gallon tree = 1 inch DBH
- one 24-inch box tree = 2 inches DBH
- one 36-inch box tree = 3 inches DBH

Replacement tree planting shall be completed before the issuance of building permits or a bond shall be posted by the applicant to provide funding for purchase, planting, irrigation, and 3-year maintenance period, should the applicant default on replacement tree mitigation. The bond shall be in an amount equal to the prevailing rate of the County Tree Preservation Fund.

Before the approval of Improvement Plans or building permits, a Replacement Native Tree Planting Plan shall be prepared by a certified arborist or licensed landscape architect and shall be submitted to the Environmental Coordinator for approval. The Replacement Native Tree Planting Plan(s) shall include the following minimum elements:

1. Species, size and locations of all replacement plantings and < 6-inch DBH trees to be preserved;

2. Method of irrigation;

3. The Sacramento County Standard Tree Planting Detail L-1, including the 10-foot deep boring hole to provide for adequate drainage;

4. Planting, irrigation, and maintenance schedules;

5. Identification of the maintenance entity and a written agreement with that entity to provide care and irrigation of the trees for a 3-year establishment period, and to replace any of the replacement oak trees which do not survive during that period.

6. Designation of 20-foot root zone radius and landscaping to occur within the radius of oak trees < 6-inches DBH to be preserved on-site.

No replacement tree shall be planted within 15 feet of the driplines of existing native trees or landmark size trees that are retained on-site, or within 15 feet of a building foundation or swimming pool excavation. The minimum spacing for replacement native trees shall be 20 feet on-center. Examples of acceptable planting locations are publicly

owned lands, common areas, and landscaped frontages (with adequate spacing). Generally unacceptable locations are utility easements (PUE, sewer, storm drains), under overhead utility lines, private yards of single family lots (including front yards), and roadway medians.

Native trees <6 inches DBH to be retained on-site shall have at least a 20-foot radius suitable root zone. The suitable root zone shall not have impermeable surfaces, turf/lawn, dense plantings, soil compaction, drainage conditions that create ponding, utility easements, or other overstory tree(s) within 20 feet of the tree to be preserved. Trees to be retained shall be determined to be healthy and structurally sound for future growth, by an ISA Certified Arborist subject to the approval of the Environmental Coordinator.

If native tree replacement plantings are demonstrated to the satisfaction of the Environmental Coordinator to be infeasible for any or all trees removed, then compensation shall be through payment into the County Tree Preservation Fund. Payment shall be made at a rate of $325.00 per DBH inch removed but not otherwise compensated, or at the prevailing rate at the time payment into the fund is made.

MITIGATION MEASURES

BR-22. Replace Nonnative Tree Canopy

The removal of nonnative tree canopy shall be mitigated for with the creation of new tree canopy equivalent to the acreage of non-native tree canopy removed. New tree canopy acreage shall be calculated using the Sacramento County Department of Transportation 15-year shade cover values for tree species. Preference is given to on-site mitigation, but if this is infeasible, then funding shall be contributed to the Sacramento Tree Foundation's Greenprint program in an amount proportional to the tree canopy lost (as determined by the 15-year shade cover calculations for the tree species to be planted through the funding, with the cost to be determined by the Sacramento County Tree Foundation).

Implementing Mitigation Measures BR-21 and BR-22 would reduce impacts related to tree removal to **less than significant with mitigation** because these measures would require replacement of native trees and nonnative tree canopy consistent with the Sacramento Tree Ordinance and General Plan policies.

IMPACT: SPECIAL STATUS BATS

Although the potential for occurrence of pallid bat and western red bat in the Plan Area is low, suitable foraging and roosting habitat is present and these species may roost onsite. Given the wide range of habitats suitable for foraging within the County, the loss of foraging habitat within the Plan Area is not likely to be substantial. If roosts and maternity colonies are present in mature trees and structures within the Plan Area, the removal of these trees and structures could result in the loss of bats and reproductive capacity which could further reduce the population of bats in the region. Therefore, the loss of roosts or disruption of maternity colonies in the Plan Area would be a potentially significant impact.

Implementation of Mitigation Measure BR-23 would reduce potentially significant impacts on special-status bats to less than significant with mitigation because this measure requires conducting surveys for roost sites, identifying any roosts in the Plan Area, implementing procedures to reduce mortality, and compensation for lost roosts.

MITIGATION MEASURES

BR-23. Bat Roost and Colony Impact Minimization

The Applicant shall implement the following measures to minimize bat mortality due to roost disturbance or destruction.

- **If suitable roosting habitat for special-status bats will be affected by Project construction (e.g., removal of trees or buildings, modification of bridges/box culverts), a qualified wildlife biologist will conduct surveys for special-status bats during the appropriate time of year to maximize detectability to determine if bat species are roosting near the work area no less than 7 days and no more than 14 days before beginning vegetation removal, ground disturbance, and/or construction. Survey methodology may include visual surveys of bats (e.g., observation of bats during foraging period), inspection for suitable habitat, bat sign (e.g., guano), or use of ultrasonic detectors (e.g., Anabat, etc.). Visual surveys will include trees within 0.25 mile of Project construction activities if the potential roost could be disturbed by construction activity. If the potential roost is separated from the construction site by topographic, vegetation, structural, or other visual barriers or by areas of routine human disturbances that are greater than the project construction disturbances, surveys of those potential roosts will not be necessary. The type of survey will depend on the condition of the potential roosting habitat. If no bat roosts are found, then no further study is required.**

- **If evidence of bat use is observed, the number and species of bats using the roost will be determined. Bat detectors may be used to supplement survey efforts.**

- **If roosts are determined to be present and must be removed, the bats will be excluded from the roosting site before the facility is removed. A mitigation program addressing compensation, exclusion methods, and roost removal procedures will be developed and submitted to CDFW for approval, before implementation. Exclusion methods may include use of one-way doors at roost entrances (bats may leave, but not reenter), or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young). Loss of roosting habitat may be compensated with permanent, elevated bat houses or condos installed outside of, but near the construction area. Placement and height shall be determined based on**

species evicted or as determined by a qualified biologist in consultation with CDFW. Bat houses will be multi-chambered and be purchased or constructed in accordance with CDFW standards. The number of bat houses required will be dependent upon the size and number of colonies found, but at least one bat house will be installed for each pair of bats (if occurring individually), or of sufficient number to accommodate each colony of bats to be relocated

IMPACT: SOUTH SACRAMENTO HABITAT CONSERVATION PLAN

The draft SSHCP identifies eight Preserve Planning Units (PPUs). The Plan Area is within PPU 2 and the Mather Preserve is consistent with the preserve boundaries identified in the SSHCP for PPU 2 and connects with core preserve areas identified in the SSHCP to the south. The SSHCP identifies the Plan Area as an urban development area and does not provide incidental take coverage to the Mather South Project. However, project development would not interfere with implementation of the SSHCP or prevent attainment of the SSHCP Biological Goals and Measurable Objectives. Project design protects the natural segment of Morrison Creek that traverses the Plan Area consistent with the **SSHCP** ~~SSGCP~~ conservation strategy. Mitigation for potential impacts to species proposed for coverage under the SSHCP is included in this EIR and would not conflict with the SSHCP conservation strategy for covered species. Therefore, this impact would be **less than significant**.

MITIGATION MEASURES

~~No mitigation is required.~~**BR-24. Implement Applicable SSHCP Avoidance and Minimization Measures.**

The Project Applicant shall implement SSHCP AMMs EDGE-8 (Outdoor Lighting), EDGE-10 (Prevent Invasive Species Spread), and BMP-2 (Erosion Control). If equivalent or more effect mitigation is required as part of the Project's State and federal permits, those mitigation measures may be implemented subject to the final determination of the Sacramento County Environmental Coordinator.

BIOLOGICAL IMPACTS ASSOCIATED WITH OFFSITE IMPROVEMENTS

Because detailed construction plans are not available and specific locations for offsite infrastructure are unknown, impacts associated with offsite improvements are discussed at a programmatic level. While some of the offsite improvements may occur within existing rights-of-way that do not provide suitable habitat for special-status or other sensitive biological resources, other offsite improvements may occur in areas that contain habitat for special-status species, or other sensitive resources including waters of the U.S., riparian habitat, and native trees. Additional environmental analysis would need to be completed before any of the offsite improvements can proceed unless such analysis has already been completed for the respective infrastructure project. A broad discussion of likely impacts to biological resources from implementation of offsite improvements required to support project development is provided below and these impacts would be potentially significant.

ROADWAY INFRASTRUCTURE

The project would be required to make offsite road improvements which may include intersection improvements and/or road widening. When development commences, SacDOT will determined where and what offsite improvements are required. A project specific CEQA analysis would be required once roadway improvements are identified and project-level designs are prepared. A cumulative analysis for biological resources impacts was included in the FEIR/EIS for the SSHCP. The roadways affected by the project are within the SSHCP Urban Development Area. In general, biological resources adjacent to local roadways may include: vernal pools/seasonal wetlands, creek crossings, special status species (vernal pool invertebrates, vernal pool plants, western spadefoot, burrowing owls, and tricolored blackbirds), native and non-native trees. Biological resources that could be affected by the offsite road improvements are expected to be the same as those existing in the Plan Area, however, it is possible that roadway improvements could affect habitat types or resources not found in the Plan Area, such as riparian or emergent marsh habitat at stream crossings or native oak trees. Specific impact amounts cannot be determined at this time for each biological resource type potentially affected by offsite roadway infrastructure.

ENERGY INFRASTRUCTURE

Improvements to the electric grid would be required to support project energy needs, including a new bulk substation (the Jackson Bulk Substation) to be constructed south of Jackson Highway and a new a 69 kV overhead sub-transmission line. The substation would also require construction of an access road and accessory improvements. This infrastructure is discussed in detail in Chapter 19 Potential Impacts and Their Disposition under “Energy.” As described in the evaluation, until detailed construction plans are available for necessary infrastructure, potential mitigation is unknown. Like the roadway improvements, offsite energy infrastructure would be expected to have potential to affect the same biological resources as those existing in the Plan Area but could affect habitat types or resources not found in the Plan Area, such as riparian or emergent marsh habitat at stream crossings or native oak trees. A discussion of possible mitigation is described in Chapter 19, but specific impact amounts cannot be determined at this time for each biological resource type potentially affected by offsite energy infrastructure. Therefore, biological resource impacts related to offsite infrastructure are **significant and unavoidable** at a program level.

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7 CLIMATE CHANGE

INTRODUCTION

The Mather Field Project EIR (2016) evaluated climate change and greenhouse gas emissions (GHG) for the Mather South Plan Area at the plan-level and that analysis is hereby incorporated by reference in this EIR and is summarized below where appropriate. This chapter presents a summary of climate change science and GHG emission sources in California; a summary of applicable regulations; quantification of project-generated GHG emissions and discussion about their contribution to global climate change; and analysis of the project's resiliency to climate change-related risks. In addition, mitigation measures are recommended to reduce the project's potential impacts.

During the NOP scoping process, no commenters raised concerns about GHG emissions. A copy of the NOP and comment letters received in response to the NOP are included in Appendix PD-2 of this Mather South Project Draft EIR.

ENVIRONMENTAL SETTING

THE PHYSICAL SCIENTIFIC BASIS OF GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of this radiation is reflected toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. The earth has a much lower temperature than the sun; therefore, the earth emits lower frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Human-caused emissions of these GHGs in excess of natural ambient concentrations are found to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely' that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic forcing (IPCC 2014).

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. Whereas most pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the lifetime of an GHG molecule is dependent on multiple variables and cannot be determined with any certainty, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, and other forms of sequestration. Of the total annual human-caused CO_2 emissions, approximately 55 percent is estimated to be sequestered through ocean and land uptake every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere (IPCC 2013:467).

The quantity of GHGs in the atmosphere that ultimately result in climate change is not precisely known, but is enormous; no single project alone would measurably contribute to an incremental change in the global average temperature, or to global, local, or micro climates. From the standpoint of CEQA, GHG impacts relative to global climate change are inherently cumulative.

EFFECTS OF CLIMATE CHANGE ON THE ENVIRONMENT

According to the Intergovernmental Panel on Climate Change (IPCC), which was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme, global average temperature is expected to increase by 3 to 7 degrees Fahrenheit (°F) by the end of the century, depending on future GHG emission scenarios (IPCC 2007). According to the California Natural Resources Agency (CNRA), temperatures in California are projected to increase by 2.7 °F by 2050 above 2000 levels and by 4.1-8.6 °F by 2100 (CNRA 2012).

Other environmental resources could be indirectly affected by the accumulative of GHG emissions and resulting rise in global average temperature. In recent years, California has been marked by extreme weather than its effects. According to CNRA's draft report, *Safeguarding California Plan: 2017 Update* (CNRA 2017), California experienced the driest four-year statewide precipitation on record from 2012 through 2015; the warmest years on average in 2014, 2015, and 2016; and the smallest and second smallest Sierra snowpack on record in 2015 and 2014 (CNRA 2017). In contrast, the northern Sierra Nevada range experienced its wettest year on record in 2016 (CNRA 2017). The changes in precipitation exacerbate wildfires throughout California with increasing frequency, size, and devastation. As temperatures increase, the increase in precipitation falling as rain rather than snow also could lead to increased potential for floods because water that would normally be held in the snowpack of the Sierra Nevada and Cascade mountains until spring would flow into the Central Valley concurrently with winter rainstorm events. This scenario would place more pressure on California's levee/flood control system (CNRA 2017).

Changes in temperature, precipitation patterns, extreme weather events, and sea-level rise have the potential to affect and decrease the efficiency of thermal power plants and substations, decrease the capacity of transmission lines, disrupt electrical demand, and threaten energy infrastructure with the increased risk of flooding (CNRA 2017).

The California Department of Transportation (Caltrans) owns and operates more than 51,000 miles along 265 highways, as well as three of the busiest passenger rail lines in the nation. Sea level rise, storm surge, and coastal erosion are imminent threats to highways, roads, bridge supports, airports, transit systems and rail lines near sea level and seaports. Shifting precipitation patterns, increase temperatures, wildfires, and increased frequency in extreme weather event also threaten transportation systems across the state. Temperature extremes and increased precipitation can increase the risk of road and railroad track failure, decreased transportation safety, and increased maintenance costs (CNRA 2017).

Water availability and changing temperatures, which affects prevalence of pests, disease, and species, directly impact drop development and livestock production. Other environmental concerns include decline in water quality, groundwater security, and soil health (CNRA 2017). Vulnerabilities of water resources also include risks to degradation of watersheds, alteration of ecosystems and loss of habitat, impacts to coastal areas, and ocean acidification (CNRA 2017).

Cal-Adapt is a climate change scenario planning tool developed by the California Energy Commission (CEC) that downscales global climate model data to local and regional resolution under two emissions scenarios: the RCP 8.5 scenario represents a business-as-usual future emissions scenario, and the RCP 4.5 scenario represents a lower GHG emissions future. According to Cal-Adapt, annual average temperatures in the project area are projected to rise by 5.9 to 8.7 °F by 2099, with the range based on the low and high emissions scenarios (Cal-Adapt 2018).

Regulatory Setting

Federal Plans, Policies, Laws, and Regulations

Supreme Court Ruling

The EPA is the federal agency responsible for implementing the federal Clean Air Act (CAA) and its amendments. The Supreme Court of the United States ruled on April 2, 2009, that CO_2 is an air pollutant as defined under the CAA, and that EPA has the authority to regulate emissions of GHGs. The ruling in this case resulted in EPA taking steps to regulate GHG emissions and lent support for state and local agencies' efforts to reduce GHG emissions.

REGULATIONS FOR GREENHOUSE GAS EMISSIONS FROM PASSENGER CARS AND TRUCKS AND CORPORATE AVERAGE FUEL ECONOMY STANDARDS

In October 2012, EPA and the National Highway Traffic Safety Administration (NHTSA), on behalf of the Department of Transportation, issued final rules to further reduce GHG emissions and improve corporate average fuel economy (CAFE) standards for light-duty vehicles for model years 2017 and beyond (77 FR 62624). NHTSA's CAFE standards have been enacted under the Energy Policy and Conservation Act since 1978. This national program requires automobile manufacturers to build a single light-duty national fleet that meets all requirements under both federal programs and the standards of California and other states. This program would increase fuel economy to the equivalent of 54.5 miles per gallon (mpg) limiting vehicle emissions to 163 grams of CO_2 per mile for the fleet of cars and light-duty trucks by model year 2025 (77 FR 62630) (NHTSA 2012).

In January 2017, EPA signed a determination to maintain the current GHG emission standards for model year 2022-2025 vehicles. However, on April 2, 2018, the new EPA Administrator and Department of Transportation announced a final determination that the current standards are not appropriate and should be revised. It is not yet known when these revisions are anticipated to occur (EPA 2018a).

Sales of battery electric vehicles in Sacramento County increased an average of 45 percent year-over-year between 2011 and 2017 (Center for Sustainable Energy 2017), exceeding the national average of 28 percent (NREL 2016).

GREENHOUSE GAS PERMITTING REQUIREMENTS

In 2010, EPA issued the Prevention of Significant Deterioration (PSD) and Title V Greenhouse Gas Tailor Rule (EPA 2011). This rule set mass emission-based permitting criteria specifically for carbon dioxide equivalent (CO_2e) emissions that define when permits under the New Source Review, PSD, and Title V Operating Permit programs are required for new and existing industrial facilities.

Step 3 of the GHG Tailoring Rule was issued by EPA in 2012, which requires a source that emits or has the potential to emit levels of CO_2e that exceed established mass emission criteria (i.e., 100,000 tons per year [90,718 metric tons (MT) per year]) of CO_2e, but that has minor source emissions of all other regulated pollutants, to apply for an operating permit.

STATE PLANS, POLICIES, LAWS, AND REGULATIONS

EXECUTIVE ORDER S-3-05

In 2005, Executive Order (EO) S-3-05 was signed into law and proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, statewide emissions

are to be reduced to 2000 levels by 2010, 1990 levels by 2020, and to 80 percent below 1990 levels by 2050.

Assembly Bill 32, the California Global Warming Solutions Act of 2006

In September 2006, the California Global Warming Solutions Act of 2006, Assembly Bill (AB) 32, was signed into law. AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emission be reduced to 1990 levels by 2020. AB 32 also requires that "(a) the statewide greenhouse gas emissions limit shall remain in effect unless otherwise amended or repealed. (b) It is the intent of the Legislature that the statewide greenhouse gas emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases beyond 2020. (c) The [CARB] shall make recommendations to the Governor and the Legislature on how to continue reductions of greenhouse gas emissions beyond 2020." [California Health and Safety Code, Division 25.5, Part 3, Section 38551]

Senate Bill 375 of 2008

In September 2008, SB 375 was signed into law and aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a Sustainable Communities Strategy (SCS) or Alternative Planning Strategy, showing prescribed land use allocation in each MPO's Regional Transportation Plan. CARB, in consultation with the MPOs, is to provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in their respective regions for 2020 and 2035. The Sacramento Area Council of Governments (SACOG) serves as the MPO for Sacramento, Placer, El Dorado, Yuba, Sutter, and Yolo Counties, excluding those lands located in the Lake Tahoe Basin. The project site is in Sacramento County. SACOG adopted its Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) 2035 in 2012, and completed an update adopted on February 18, 2016. SACOG was tasked by CARB to achieve a 7 percent per capita reduction compared to 2012 emissions by 2020 and a 16 percent per capita reduction by 2035, which CARB confirmed the region would achieve by implementing its SCS (CARB 2013). In March 2018, CARB adopted the Target Update for the SB 375 targets taking SACOG to achieve a 7 percent and a 19 percent per capita reduction by 2020 and 2035, respectively (CARB 2018).

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of regulatory standards for vehicle model years 2017 through 2025. The new regulations strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains

and engines. The program's zero-emission vehicle regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025 (CARB 2016).

Senate Bill X1-2, the California Renewable Energy Resources Act of 2011 and Senate Bill 350, the Clean Energy and Pollution Reduction Act of 2015

SB X1-2 of 2011 requires all California utilities to generate 33 percent of their electricity from renewables by 2020. SB X1-2 sets a three-stage compliance period requiring all California utilities, including independently-owned utilities, energy service providers, and community choice aggregators, to generate 20 percent of their electricity from renewables by December 31, 2013; 25 percent by December 31, 2016; and 33 percent by December 31, 2020. SB X1-2 also requires the renewable electricity standard to be met increasingly with renewable energy that is supplied to the California grid from sources within, or directly proximate to, California. SB X1-2 mandates that renewables from these sources make up at least 50 percent of the total renewable energy for the 2011-2013 compliance period, at least 65 percent for the 2014-2016 compliance period, and at least 75 percent for 2016 and beyond. In October 2015, SB 350 was signed by Governor Brown, which requires retail sellers and publicly-owned utilities to procure 50 percent of their electricity from renewable resources by 2030.

Executive Order B-30-15

On April 20, 2015, EO B-30-15 was signed into law and established a California GHG reduction target of 40 percent below 1990 levels by 2030. The EO aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union, which adopted the same target in October 2014. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32, discussed above). California's new emission reduction target of 40 percent below 1990 levels by 2030 sets the next interim step in the State's continued efforts to pursue the long-term target expressed under EO S-3-05 to reach the goal of reducing emissions 80 percent below 1990 levels by 2050. This is in line with the scientifically-established levels needed in the U.S. to limit global warming below 2 degrees Celsius, the warming threshold at which major climate disruptions are projected, such as super droughts and rising sea levels.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, SB 32 and AB 197 were signed into law and serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-

30-15 for 2030, which set the next interim step in the State's continued efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050.

California Building Energy Efficiency Standards (Title 24, Part 6)

CCR Title 24, Part 6 is California's Energy Efficiency Standards for Residential and Nonresidential Buildings. Title 24, Part 6 was established by CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy-efficiency standards for residential and nonresidential buildings.

The 2019 Title 24, Part 6 Building Energy Efficiency Standards were adopted by the CEC on May 9, 2018 and will take effect on January 1, 2020. The standards are designed to move the State closer to its zero net energy goals for new residential development. It does so by requiring all new residences to install enough renewable energy to offset all the site electricity needs of each residential unit (CCR, Title 24, Part 6, section 150.1(c)14). CEC estimates that the combination of mandatory on-site renewable energy and prescriptively-required energy efficiency features will result in new residential construction that uses 53 percent less energy than the 2016 standards. Nonresidential buildings are anticipated to reduce energy consumption by 30 percent compared to the 2016 standards primarily through prescriptive requirements for high-efficacy lighting (CEC 2018). The building efficiency standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary in response to local climatologic, geologic, or topographic conditions, provided that these standards are demonstrated to be cost effective and exceed the energy performance required by Title 24, Part 6.

Low Carbon Fuel Standard

In January 2007, EO S-01-07 established a Low Carbon Fuel Standard (LCFS). The EO calls for a statewide goal to be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020, and that a LCFS for transportation fuels be established for California. The LCFS applies to all refiners, blenders, producers, or importers ("Providers") of transportation fuels in California, including fuels used by off-road construction equipment (Wade, pers. comm. 2017). The LCFS is measured on the total fuel cycle and may be met through market-based methods (e.g., providers exceeding the performance required by an LCFS receive credits that may be applied to future obligations or traded to Providers not meeting LCFS).

Climate Change Scoping Plan

In December 2008, CARB adopted its first version of its *Climate Change Scoping Plan,* which contained the main strategies California will implement to achieve the mandate of AB 32 (2006) to reduce statewide GHG emissions to 1990 levels by 2020. In May 2014,

CARB released and subsequently adopted the *First Update to the Climate Change Scoping Plan* to identify the next steps in reaching the goals of AB 32 (2006) and evaluate the progress made between 2000 and 2012 (CARB 2014). After releasing multiple versions of proposed updates in 2017, CARB adopted the final version titled *California's 2017 Climate Change Scoping Plan* (2017 Scoping Plan) in December (CARB 2017). The 2017 Scoping Plan indicates that California is on track to achieve the 2020 statewide GHG target mandated by AB 32 of 2006 (CARB 2017:9). It also lays out the framework for achieving the mandate of SB 32 of 2016 to reduce statewide GHG emissions to at least 40 percent below 1990 levels by the end of 2030 (CARB 2017). The 2017 Scoping Plan identifies the GHG reductions needed by each emissions sector.

The 2017 Scoping Plan also identifies how GHGs associated with proposed projects could be evaluated under CEQA (CARB 2017:101-102). Specifically, it states that achieving "no net increase" in GHG emissions is an appropriate overall objective of projects evaluated under CEQA if conformity with an applicable local GHG reduction plan cannot be demonstrated. CARB recognizes that it may not be appropriate or feasible for every development project to mitigate its GHG emissions to zero and that an increase in GHG emissions due to a project may not necessarily imply a substantial contribution to the cumulatively significant environmental impact of climate change.

Senate Bill 743 of 2013

SB 743 changes the way that public agencies evaluate the transportation impacts of projects under CEQA. The proposed revisions to the State CEQA Guidelines would establish new criteria for determining the significance of a project's transportation impacts that will more appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of GHGs.

As detailed in SB 743, the Governor's Office of Planning and Research (OPR) was tasked with developing potential metrics to measure transportation impacts and replace the use of delay and level of service (LOS). More detail about SB 743 is provided in the setting Chapter 17, "Traffic and Circulation."

In November 2017, OPR released its proposed changes to the CEQA Guidelines, including the addition of Section 15064.3 that would implement SB 743 (OPR 2017a:77-90a). In support of these changes, OPR also published its *Technical Advisory on Evaluating Transportation Impacts in CEQA*, which recommends that the transportation impact of a project be based on whether it would generate a level of vehicle miles traveled (VMT) per capita (or VMT per employee) that is 15 percent lower than existing development in the region (OPR 2017b:12-13). OPR's technical advisory explains that this criterion is consistent with Section 21099 of the California Public Resources Code, which states that the criteria for determining significance must "promote the reduction in greenhouse gas emissions" (OPR 2017b:18). It is also consistent with the statewide per capita VMT reduction target developed by Caltrans in its Strategic Management Plan, which calls for a 15 percent reduction in per capita VMT, compared to 2010 levels, by 2020 (Caltrans 2015:11). Additionally, the California Air Pollution Control Officers

Association (CAPCOA) determined that a 15 percent reduction in VMT is typically achievable for projects (CAPCOA 2010:55). CARB's *First Update to the Climate Change Scoping Plan* also called for local governments to set communitywide GHG reduction targets of 15 percent below then-current levels by 2020 (CARB 2014:113).

~~At the time of writing this Draft EIR, the CNRA has not yet adopted OPR's proposed addition of Section 15064.3 to the CEQA Guidelines.~~ **In December 2018, the CNRA certified and adopted the the CEQA Guidelines update package, including Section 15064.3 implementing Senate Bill 743. Beginning on July 1, 2020, the provisions of Section 15064.3 apply statewide.**

Executive Order B-48-18: Zero-Emission Vehicles

In January 2018, EO B-48-18 was signed into law and requires all State entities to work with the private sector to have at least 5 million zero-emission vehicles (ZEVs) on the road by 2030, as well as install 200 hydrogen fueling stations and 250,000 electric vehicle charging stations by 2025. It specifies that 10,000 of the electric vehicle charging stations should be direct current fast chargers. This EO also requires all State entities to continue to partner with local and regional governments to streamline the installation of ZEV infrastructure. The Governor's Office of Business and Economic Development is required to publish a *Plug-in Charging Station Design Guidebook* and update the *2015 Hydrogen Station Permitting Guidebook* (Eckerle and Jones 2015) to aid in these efforts. All State entities are required to participate in updating the *2016 Zero-Emissions Vehicle Action Plan* (Governor's Interagency Working Group on Zero-Emission Vehicles 2016) to help expand private investment in ZEV infrastructure with a focus on serving low-income and disadvantaged communities. Additionally, all State entities are to support and recommend policies and actions to expand ZEV infrastructure at residential uses through the Low Carbon Fuel Standard Program, and recommend how to ensure affordability and accessibility for all drivers.

Sacramento County General Plan

The Sacramento County General Plan contains the following GHG-related policy:

LU-115. It is the goal of the County to reduce greenhouse gas emissions to 1990 levels by the year 2020. This shall be achieved through a mix of State and local action.

The Sacramento County General Plan includes the following policies in the Safety element related to addressing wildfires and mitigating their risks (Sacramento County 2017):

SA-23. The County shall require that all new development meets the local fire district standards for adequate water supply and pressure, fire hydrants, and access to structures by firefighting equipment and personnel.

SA-26. The County and fire districts shall develop programs to provide citizens with self-preparedness and community readiness skills for large or extended accidental, natural, and terrorist emergencies/incidents.

SA-27. The County shall require, where appropriate, the use of fire resistant landscaping and building materials for new construction developments that are cost effective.

SA-28. The County shall encourage and require, to the maximum extent feasible, automatic fire sprinkler systems for all new commercial and industrial development to reduce the dependence on fire department equipment and personnel.

SA-30. The County, medical community, and fire districts shall work to improve EMS response system that includes first responder emergency care and transportation services.

Mather Field Specific Plan and Special Planning Area

The following policies related to GHG emissions and would apply to the Mather South Project:

603-13.1 ENVIRONMENTAL IMPACT MITIGATION MEASURES. Pursuant to the Revised Final Environmental Impact Report released on June 9, 2016 for the Mather Field Special Planning Area, the following policies are applicable to redevelopment or future development, as noted below. Refer to the adopted Mitigation Monitoring and Reporting Program for the full text of the mitigation measures referenced below. These policies are based upon the adopted Mitigation Measures, and are not all inclusive of the required Mitigation Measures for development in the Mather Field Special Planning Area, nor do they replace the adopted Mitigation Measures.

(a) Future applicants for residential projects shall reduce residential GHG emissions to below the significance threshold of 1.33 MT per capita, pursuant to Mitigation Measure CC-1.

(b) Future applicants for commercial and industrial projects shall reduce commercial emissions to below the significance threshold of 7.87 MT CO_2 per Kft^2, pursuant to Mitigation Measure CC-2.

Sacramento County Climate Action Planning

The Sacramento County **Phase 1** Climate Action Plan was adopted on November 9, 2011 by the Sacramento County Board of Supervisors **concurrently with the adoption of the 2030 General Plan, and the General Plan Update EIR included the 2020 greenhouse gas emissions significance thresholds.** The **Phase 1** plan includes a GHG inventory for the unincorporated areas of Sacramento County, a GHG emission reduction target, and goals and implementation measures developed to help the County reach these goals.

Reduction strategies address GHG emissions associated with transportation and land use, energy, water, waste management and recycling, and agriculture and open space. The County's goals related to transportation and energy use include the following:

- Increase the average fuel efficiency of County-owned vehicles powered by gasoline and diesel and encourage increased fuel efficiency in community vehicles;
- Increase the use of alternative and lower carbon fuels in the County vehicle fleet and facilitate their use in the community;
- Reduce total vehicle miles traveled per capita in the community and region;
- Improve energy efficiency of existing and new buildings in unincorporated County;
- Improve energy efficiency of County infrastructure operation (roads, water, waste, buildings, etc.); and
- Decrease use of fossil fuels by transitioning to renewable energy sources.

The Phase 1 CAP is a strategy and framework document. The County adopted the Phase 2A CAP (Government Operations) on September 11, 2012. Neither the Phase 1 CAP nor the Phase 2A CAP are "qualified" plans through which subsequent projects may receive CEQA streamlining benefits. The Communitywide CAP (Phase 2B) has been in progress for some time (https://planning.saccounty.net/PlansandProjectsIn-Progress/Pages/CAP.aspx) but is currently on hold pending in-depth review of CAP-related litigation in other jurisdictions. The commitment to a Communitywide CAP is identified in General Plan Policy LU-115 and associated Implementation Measures F through J on page 117 of the General Plan Land Use Element. This commitment was made in part due to the County's General Plan Update process and potential expansion of the Urban Policy Area to accommodate new growth areas. General Plan Policies LU-119 and LU-120 were developed with SACOG to be consistent with smart growth policies in the SACOG Blueprint, which are intended to reduce VMT and GHG emissions. The Mather South project is located inside the existing Urban Policy Area. Nevertheless, Sacramento County has applied a consistent methodology for climate change impact analysis across the entire Jackson Highway corridor planning area for the four proposed individual master plans.

As allowed under CEQA Guidelines Section 15183.5(b), lead agencies may choose to analyze and mitigate significant greenhouse gas emissions in a plan for the reduction of greenhouse gas emissions or similar document. The analysis contained in this EIR is based on the project-specific Greenhouse Gas Reduction Plan prepared for the project consistent with CEQA Guidelines Sections 15183.5(b) and 15064.

SIGNIFICANCE CRITERIA

This issue of global climate change is inherently a cumulative issue, as the GHG emissions of individual projects cannot be shown to have any material effect on global

climate. Thus, the project's impact to climate change is addressed only as a cumulative impact. CEQA Guidelines Section 15064 and relevant portions of Appendix G recommend that a lead agency consider a project's consistency with relevant, adopted plans, and discuss any inconsistencies with applicable regional plans, including plans to reduce GHG emissions. In Appendix G of the State CEQA Guidelines, two questions are provided to help assess if the project would result in a potentially significant impact on climate change. These questions ask whether the project would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.

2. Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of GHGs?

Sacramento County has developed thresholds of significance based on the County's GHG inventory (see Table CC-1)[1]. **The 2020 significance thresholds were described on pages 12-36 through 12-40 in the General Plan Update FEIR, which was subject to thorough public review and was certified as adequate and complete on November 9, 2011. The staff report for the November 9, 2011 Board of Supervisors hearing in which the 2030 General Plan and Phase 1 Climate Action Plan were adopted clearly identifies the reliance on the FEIR, and the Phase 1 CAP refers to the General Plan Update EIR on page 12. The Phase 1 CAP was adopted via Resolution No. 2011-0833. These previously published materials are hereby incorporated by reference in their entirety. Therefore, the 2020 significance thresholds were adopted for general use through certification of the General Plan Update FEIR**. As shown below, separate thresholds have been included for residential energy, commercial energy, and transportation. The purpose of this division is to provide additional information about the source of emissions. When making a final determination of significance, these thresholds can be combined to generate a total emissions threshold; it is this total threshold that will ultimately determine whether impacts are found to be significant.

Also note that the transportation sector is expressed in per capita, which is not applicable to nonresidential projects. The County determined that, in general, nonresidential projects redistribute existing trips made by passenger vehicles – they do not generate new trips. The majority of trips to and from a commercial project are generated by residential uses. Residential projects are already required to account for transportation emissions, so including them for commercial projects as well would result in double-counting. Therefore, only the truck-trips generated by a commercial project itself will be subject to analysis. An exception to this rule is any commercial project which is a regional draw or unique draw, and thus may cause the redistribution of existing trips in a manner that will increase total existing VMT.

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[1] Greenhouse gas emissions thresholds **for 2030** have not been formally adopted by the County and are not readily available on the County's website. Thresholds were provided to Ascent Environmental for use in this analysis.

It should be noted that the 2020 significance thresholds cited above for the Mather Field EIR were those in use by the County at the time the Mather Field project was undergoing environmental review, and SB 32 had not yet been signed into law. **As stated on page 12-36 of the General Plan Update FEIR, the 2020 thresholds require periodic updating to reflect changes to GHG inventory and any changes in the regulatory environment.** The 2030 significance thresholds in Table CC-1 below reflect an update to the 2020 thresholds consistent with the reduction target established by SB 32 **of 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050**, based on the same methodology used to develop the 2020 significance thresholds. **In the absence of a qualified Phase 2B Communitywide CAP, these project-specific thresholds were developed based on the substantial evidence contained in the County's emissions inventory and regulatory requirements.**

The County's 2005 GHG emissions inventory was updated in 2015 as part of the comprehensive Communitywide CAP (Phase 2B) preparation. Differences between the 2005 and 2015 emissions inventories include the following, as further described in detail in the November 15, 2016 Technical Memorandum regarding 2015 Greenhouse Gas Emissions Inventory and Forecasts (https://planning.saccounty.net/PlansandProjectsIn-Progress/Pages/CAP.aspx):

- **The use of different Global Warming Potential (GWP) values between inventories;**
- **Adjustments in calculation methodologies (equations and emission factors)**
- **Differences in data sources between the two inventories; and**
- **Changes in actual activity levels within the County since 2005 (e.g., population increase, number of buildings, building energy use, and vehicle travel).**

Table CC-1 below provides a comparison of the 2005 inventory and the 2015 inventory.

Table CC-1: Comparison of 2005 and 2015 GHG Emissions Inventories

Sectors	2005 Inventory ($MTCO_2e$/year)	2015 GHG Inventory ($MTCO_2e$/year)	Difference ($MTCO_2e$/year)	Percent change from 2005
Residential Energy	1,033,142	1,193,311	+160,169	+16%
Commercial and Industrial Energy[1]	772,129	890,603	+118,474	+15%
On-Road Vehicles	2,066,970	1,671,596	-395,374	-19%
Off-Road Vehicles	236,466	196,769	-39,697	-17%
Solid Waste	201,350	352,909	+151,559	+75%
Water-Related	5,885	15,222	+9,337	+159%
Wastewater	70,662	27,253	-43,409	-61%
Agriculture	197,132	254,710	+57,578	+29%
High-GWP Gases	203,528	251,085	+47,554	+23%
Sacramento International Airport[2]	200,404	NA	NA	NA
Total[3]	4,787,264	4,853,647	+66,383	+1.4%

Notes: Totals may not add due to rounding; $MTCO_2e$ = metric tons of carbon dioxide equivalent; GWP = Global Warming Potential; NA = Not applicable

1. The 2005 Inventory separated Industrial and Commercial sectors, and thus they are combined here for comparison to the 2015 inventory, which did not separate industrial from commercial.

2. Aircraft emissions were not included in the 2015 Inventory, but they were included in the 2005 inventory and are included for reference purposes only.

3. Totals do not include aircraft emissions reported in the 2005 inventory.

Source: Sacramento County, 2011; 2015 inventory prepared by Ascent Environmental in 2016.

The buildout year for the project is 2032, for which Sacramento County has not developed GHG emission thresholds. To evaluate the project in light of the 2050 statewide GHG reduction goal identified in EO B-30-15, the 2030 thresholds were extrapolated using a 7 percent reduction, as shown below in Table ~~CC-1~~**CC-2**. The reduction in thresholds is based on the mass emissions reduction needed to be achieved by the County to meet the 2050 GHG emissions goals. Detailed calculations for the threshold determination can be found in Appendix AQ-GHG-1.

Table CC-~~1~~2: Greenhouse Gas Significance Thresholds (Annual Metric Tons CO_2e)[1]

Sector	2005 Baseline	2020 Target	2020 Thresholds	2030 Mass Emission Target[2]	2030 Thresholds	2032 (project-specific derived) Thresholds[1]
Residential Energy	1,033,142	878,275	1.33 per capita	527,243	0.78 per capita	0.73 per capita
Commercial & Industrial Energy	772,129	656,914	7.87 per 1,000 sq ft	395,760	4.59 per 1,000 sq ft	4.28 per 1,000 sq ft
Transportation	2,046,617	1,757,236	2.67 per capita	1,055,172	1.57 per capita	1.47 per capita
Trucks	488,806	414,470	0.10 per 100 VMT	245,974	0.08 per 100 VMT	0.07 per 100 VMT

Notes: CO_2e = carbon dioxide equivalent; sq ft = square feet; VMT = vehicle miles traveled.

1 2032 thresholds are not adopted by Sacramento County but are interpolated based on 2030 thresholds and keeping the County aligned with GHG reduction goal of 80 percent below 1990 levels by 2050 per EO B-30-15.

2 Mass emission target does not include GHG emissions associated with area sources, water treatment and conveyance, or waste generation.

Source: Smith, pers. comm., 2017

Thresholds applicable to construction activities have not been developed. Emissions resulting from the usage of off-road vehicles is only 4.7 percent of the total inventoried emissions in Sacramento County, which include emissions from recreational and industrial equipment in addition to construction fleets. Although emissions from the operation of newly constructed buildings adds to existing building stock resulting in a cumulative year-on-year increase in emissions, the level of construction activity required to build the new buildings in a region does not result in a cumulative increase in emissions because of their temporary nature. Though construction activity may increase or decrease in a given year because of market demand, the average amount of construction undertaken does not tend to increase over time, according to historical construction fleet emissions data. For this reason, even without mitigation, the amount of annual emissions resulting from construction is expected to decrease over time as a result of the implementation of existing regulations (such as the low carbon fuel standard) and improving fuel efficiency. Standard mitigation applied for the purpose of reducing other air pollutants (see Chapter 4 Air Quality) will further reduce GHG emissions. For the foregoing reasons, it was determined that construction emissions would not contribute to a significant climate change impact, and no threshold is necessary.

ISSUES NOT DISCUSSED FURTHER

All issues are evaluated below.

METHODOLOGY

In line with the thresholds and methods recommended by Sacramento County, the analysis of the Mather South Project's operational GHG emissions is divided into two separate emission sectors: Energy Use and Transportation.

The methods used to estimate emissions from these two sectors are described in greater detail below. It should be noted that GHG emissions are also generated through other emissions sectors such as area source (e.g., landscaping equipment), water-related, and waste generation. However, these sectors are not included in the determination of County-adopted GHG thresholds, thus they are not compared to a mass emission or per capita threshold. GHG emissions associated with these sectors are shown for disclosure purposes and methods are discussed under "Other Emissions" below. Construction-related emissions are provided in Appendix AQ-GHG-1 for informational purposes but are not included in GHG emissions calculations, per Sacramento County guidance. Construction-related GHG emissions are considered to meet County thresholds of significance if operational GHG emissions meet thresholds.

Sacramento County's adopted GHG thresholds are for 2020, as noted in Table CC-~~1~~**2**. However, the buildout year of the project is 2032. For the purposes of this analysis, and per guidance from Sacramento County, the project's GHG emissions were evaluated for a partial buildout scenario in 2020 and a full buildout scenario in 2032. The partial buildout scenario includes a VMT estimate using a straight-line regression between the existing (i.e., 2015) VMT estimate and the full buildout conditions (i.e., 2035) to obtain anticipated VMT in 2020. This assumes five years of project development has occurred, or 29 percent of the total project buildout. The amount of residential and nonresidential development that is included in this partial buildout scenario is included in Table CC-~~2~~**3**. The full buildout scenario conservatively assumes the 2035 VMT conditions in 2032 and all land uses are fully built out. All land uses included in the full buildout scenario are also included in Table CC-~~2~~**3**.

Table CC-~~2~~3: Project Land Uses and Population Estimates

Land Use	2020				2032			
	Units	Sq Ft (1000)	Population[1]	Acres	Units	Sq Ft (1000)	Population[2]	Acres
Single-Family Housing	664	NA	1,725	102	2,291	NA	5,936	353
Low-Rise Apartments	130	NA	338	13	449	NA	1,163	45
Mid-Rise Apartments	226	NA	587	10	781	NA	2,023	34
Retail	NA	53.6	NA	6	NA	185	NA	21
Office	NA	120.4	NA	9	NA	415.25	NA	30
Community Center	NA	4.4	NA	2	NA	15	NA	6

Land Use	2020				2032			
	Units	Sq Ft (1000)	Population[1]	Acres	Units	Sq Ft (1000)	Population[2]	Acres
Research & Development	NA	43.2	NA	3	NA	149	NA	12
Elementary School	NA	36.4	435	6	NA	NA	1,500[3]	22
Light Industrial	NA	10.4	NA	1	NA	35.75	NA	2
City Park	NA	NA	NA	13	NA	NA	NA	44
Total	**1,021**	**268.4**	**2,651**	**165**	**3,521**	**800**	**9,122**	**570**

Notes: Sq Ft = square feet; NA = not applicable.

[1] Population per housing unit is 2.6 based on SACOG housing and population projections for 2020.

[2] Population per housing unit is 2.59 based on SACOG's housing and population projections for 2036.

[3] Population for elementary school is for total students. Not included in per capita total because already included in residential population.

Totals may not sum exactly due to rounding.

Source: Ascent Environmental 2019

ENERGY USE EMISSIONS

Emissions of GHGs from energy use are associated with electricity consumption and combustion of natural gas. Residential and nonresidential land uses may require both electricity and natural gas to power common uses such as heating and cooling, lighting, and appliances.

For the 2020 partial buildout scenario, levels of electricity and natural gas consumption were estimated using default consumption rates in the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 for the types of land uses included in Table CC-2~~3~~**3** (CAPCOA 2016).

For the full buildout scenario in 2032, levels of electricity and natural gas consumption were estimated by adjusting the default consumption rates in CalEEMod Version 2016.3.2 for the types of land uses proposed in the MSCMP based on the anticipated energy consumption reduction determined by CEC for the 2019 Title 24 Building Energy Efficiency Standards. Single-family housing energy consumption was decreased by 7 percent and nonresidential building energy was reduced by 30 percent to account for efficiency improvement between the 2016 and 2019 Title 24 standards (CEC 2018).

GHG emissions were estimated for electricity consumption based on GHG emission intensity factors for Sacramento Metropolitan Utility District (SMUD) and assumed compliance with California's Renewables Portfolio Standard (i.e., 33 percent renewable energy portfolio by 2020 and 60 percent by 2030). The 2019 Title 24 Building Energy Efficiency Standards require single-family housing to generate their electricity demand from renewable sources such as solar photovoltaics. Emissions modeling accounted for

solar generation based on the 2019 Title 24 standards in the 2032 full buildout scenario. Assumptions and details regarding the estimated solar generation can be found in Appendix AQ-GHG-1. To estimate GHG emissions associated with natural gas, CalEEMod default energy usage rates and emission factors were used based on the project's land use types and climate region.

Emissions from energy consumption were summed separately for residential and nonresidential land uses. GHG emissions for energy consumption by residential land use (i.e., single- and multifamily units) were normalized by the number residents that would populate these uses and compared to the County's adopted 2020 threshold of 1.33 annual metric tons of CO_2e per capita per year ($MTCO_2e$ per capita/year) and the County's extrapolated threshold for 2032 of 0.73 $MTCO_2e$ per capita/year. GHG emissions for energy consumption by nonresidential land uses (i.e., commercial center, community center, elementary schools, Environmental Education Campus, Research and Development Campus) were normalized by floor area and compared to the County's adopted 2020 threshold of 7.87 $MTCO_2e$ per 1,000 square feet of floor area ($MTCO_2e$/Ksf) and the County's extrapolated threshold for 2032 of 4.28 $MTCO_2e$/Ksf.

TRANSPORTATION EMISSIONS

Transportation emissions are associated with the project-generated vehicular trips. Transportation-related emissions were compared to the VMT per capita thresholds. For comparison to Sacramento County's per-capita GHG thresholds of significance, the total population served by the project was also estimated.

Transportation-related emissions were calculated using VMT estimates provided by the traffic study of the proposed project (DKS 2018). VMT estimates were provided for existing-plus-project conditions, cumulative-no-project conditions, and cumulative-plus-project conditions. The cumulative scenario includes VMT associated with the proposed MSCMP as well as other large foreseeable development including the NewBridge Specific Plan, Jackson Township, and the West Jackson Highway Master Plan.

GHG vehicle emission factors for 2020 and 2032 were obtained from CARB's Mobile Source EMissions FACtor (EMFAC) 2017 model, version 1.0.2. EMFAC 2017 was also used to estimate the level of mobile-source GHG emissions that would be generated based on projected VMT under the 2020 partial buildout and 2032 full buildout scenarios. Emission rates were used to generate the total VMT-related emissions for the project in 2020 and 2032 to be compared to the Sacramento County per-capita thresholds for VMT. The population estimates were based on average household sizes for the Sacramento region as reported in SACOG's 2016 MTP/SCS for the partial buildout year of 2020 using 2020 estimates and the full buildout year of 2032 using 2036 estimates (SACOG 2016).

OTHER SECTORS

As discussed above, there are several GHG emissions sectors that not included in the County's GHG thresholds, but are quantified in this analysis. This includes GHG emissions associated with area sources, water, and solid waste.

GHGs from area sources were based on the number of residential units, the size of the nonresidential buildings, and the number of days of landscaping per year (i.e., 180). GHGs from electricity consumption specifically associated with the consumption of water, were based on residential and commercial water demand estimates provided by Sacramento County for the project. GHG emissions associated with the generation of solid waste were estimated using default parameters in CalEEMod. While these emission estimates were not part of the comparison to the County's recommended thresholds of significance, they were included in the emissions summary for informational purposes.

IMPACTS AND ANALYSIS

2016 MATHER FIELD PROJECT EIR DETERMINATION

The Mather Field Project EIR evaluated impacts related to climate change and GHG emissions from implementation of the Mather Field Project which consisted of a realignment of Zinfandel Drive and trunk extension, creation of the Mather Preserve and the establishment of an Urban Development Area designation for the Mather South Plan Area.

The EIR concluded that the Mather Field Project would result in less than significant impacts with implementation of Mitigation Measures CC-1 and CC-2 related to long-term GHG emissions over the existing conditions. The discussion of impacts can be found on pages 13-8 through 13-13 of the Mather Field Project EIR and is hereby incorporated by reference.

ADOPTED MATHER FIELD PROJECT EIR MITIGATION MEASURES

CC-1: RESIDENTIAL ENERGY SECTOR EMISSION REDUCTIONS

Add a policy to the Mather Field SPA requiring that future applicants for residential projects reduce residential GHG emissions to below the significance threshold of 1.33 $MTCO_2e$ per capita. In consultation with the Planning and Environmental Review Division and Sacramento Metropolitan Air Quality Management District, applicants shall submit a plan detailing a set of quantitative and/or qualitative measures that achieve the reduction in CO_2 emissions per capita, prior to the issuance of building permits or prior to obtaining any discretionary entitlements. This mitigation may be modified to conform with current Sacramento County climate change standards, including but not limited to a Green Building Program and Climate Action Plan. Additionally, applicants may choose to submit

revised, project-specific, residential energy-use emissions factors; however, the applicant will be required to provide adequate data to support the revised emission factor.

CC-2: Commercial Energy Sector Emission Reductions

Add a policy to the Mather Field SPA requiring that future applicants for commercial and industrial projects reduce commercial emissions to below the significance threshold of 7.87 $MTCO_2e$/Ksf/year. In consultation with the Planning and Environmental Review Division and Sacramento Metropolitan Air Quality Management District, applicants shall submit a plan detailing a set of quantitative and/or qualitative measures that achieve the reduction in CO_2 emissions per Ksf, prior to the issuance of building permits or prior to obtaining any discretionary entitlements. This mitigation may be modified to conform with current Sacramento County climate change standards, including but not limited to a Green Building Program and Climate Action Plan. Additionally, applicants may choose to submit revised, project-specific, commercial energy-use emissions factors; however, the applicant will be required to provide adequate data to support the revised emission factor.

Mather South Project Impacts Determination

Impact: Project Greenhouse Gas Emissions

Development of the Mather South Project would result in GHG emissions from energy consumption (e.g., electricity use, natural gas use, water use), mobile sources (i.e., project-generated VMT), and from waste generation at offsite landfills. Per Sacramento County guidance, emissions not associated with energy use or transportation (i.e., area sources, water, waste) were excluded in totals to be compared to Sacramento County thresholds but are shown in Tables CC-~~6~~**7** and CC-~~10~~**11** below for informational purposes only. Emissions estimates were categorized by residential land uses, nonresidential land uses, and transportation to be compare to Sacramento County thresholds of significance for 2020 and 2032. Emission estimates for each category are described separately below. The Mather South Project is also evaluated for consistency with adopted statewide and local plans intended to reduce GHG emissions.

2020 Partial Buildout Scenario

Energy-Related Greenhouse Gas Emissions from Residential Land Uses

The Mather South Project includes single-family homes, multifamily homes, and on-site residential units associated with the environmental education campus. Emissions were estimated based on the number of units that could be developed under the 2020 partial buildout scenario. Emissions associated with energy use and natural gas consumption were calculated for these land uses. Emissions are summarized below in Table CC-~~3~~**4** and compared to the 2020 threshold (1.33 $MTCO_2e$ per capita/year) for residential land uses. As shown in Table CC-~~3~~**4**, emissions associated with residential land uses would not exceed Sacramento County threshold of significance.

Table CC-~~3~~4: Summary of Residential Energy-Related Greenhouse Gas Emissions in 2020

	$MTCO_2e$/year	$MTCO_2e$/capita/year
Estimated Annual Residential GHG Emissions[1]	2,345	0.88
Residential Threshold of Significance	3,525	1.33[2]
Exceeds Threshold of Significance?		**No**

Notes: GHG = greenhouse gas; $MTCO_2e$/year = metric tons of carbon dioxide equivalent per year; $MTCO_2e$/capita/year = metric tons of carbon dioxide equivalent per capita per year.

[1] Total GHG emissions do not include emissions associated with water use or waste generation.

[2] Population under the partial buildout scenario would be 2,653.

Calculation details can be found in Appendix AQ-GHG-1.

Source: Modeling conducted by Ascent Environmental in 2019.

Energy-Related Greenhouse Gas Emissions from Nonresidential Land Uses

The Mather South Project includes nonresidential land uses, such as two elementary schools, an environmental education campus, a research and development campus, retail, community center, and parks. Emissions associated with energy use and natural gas consumption were calculated for the land uses shown in Table CC-~~2~~3. Emissions are summarized below in Table CC-4**5** compared to the 2020 threshold (7.87 $MTCO_2e$/Ksf) for nonresidential land uses. As shown in Table CC-4**5**, GHG emissions associated with nonresidential land uses would not exceed the Sacramento County thresholds of significance in 2020.

Table CC-45: Summary of Nonresidential Energy-Related Greenhouse Gas Emissions in 2020

	$MTCO_2e$/year	$MTCO_2e$/Ksf/year
Estimated Annual Nonresidential GHG Emissions[1]	672	2.50
Nonresidential Threshold of Significance	2,112	7.87
Exceeds Threshold of Significance?		**No**

Notes: GHG = greenhouse gas; $MTCO_2e$/year = metric tons of carbon dioxide equivalent per year; $MTCO_2e$/Ksf/year = metric tons of carbon dioxide equivalent per 1,000 square feet per year.

[1] Total GHG emissions do not include emissions associated with water use or waste generation.

Source: Modeling conducted by Ascent Environmental in 2019.

Transportation-Related Greenhouse Gas Emissions

A traffic study was conducted for the Mather South Project, which included project-generated VMT and trips for the existing (i.e., 2015) scenario and the existing-plus-project (i.e., 2035) scenario. To obtain 2020 VMT, the VMT estimates for 2015 and 2035 were extrapolated linearly. The population for all residential land uses developed under the 2020 partial buildout scenario was used to compare the estimated mobile emissions to the 2020 VMT threshold of 2.67 $MTCO_2e$ per capita. As shown in Table CC-~~5~~**6**, GHG emissions associated with transportation would exceed the Sacramento County threshold of significance.

Table CC-~~5~~6: Summary of Transportation-Related Greenhouse Gas Emissions in 2020

	$MTCO_2e$/year	$MTCO_2e$/capita/year
Estimated Annual Transportation GHG Emissions	12,722	4.79
Transportation Threshold of Significance	7,077	2.67
Exceeds Threshold of Significance?		**Yes**

Notes: GHG = greenhouse gas; $MTCO_2e$/year = metric tons of carbon dioxide equivalent per year; $MTCO_2e$/capita/year = metric tons of carbon dioxide equivalent per capita per year.

[1] Population assumed to be 2,651 as shown in Table CC-2.

Source: Modeling conducted by Ascent Environmental in 2019.

EMISSIONS TOTAL

Emissions from all sectors are summarized below in Table CC-~~6~~7.

Table CC-~~6~~7: Summary of Unmitigated Annual Greenhouse Gas Emissions Associated with the Project at Partial Buildout (2020)

Sector	GHG Emissions ($MTCO_2e$/year)	Mass Emissions GHG Limit ($MTCO_2e$/year)[1]	Reduction Needed ($MTCO_2e$/year)
Residential Energy	2,345	3,525	(1,180)
Nonresidential Energy	672	2,112	(1,440)
Transportation	12,722	7,077	5,645
Landscape Equipment	18	NA	NA
Waste Generation	574	NA	NA
Water Use	261	NA	NA
Project Total	16,592	NA	NA

Notes: GHG = greenhouse gas; $MTCO_2e$/year = metric tons of carbon dioxide equivalent per year; NA = not applicable. Parentheses indicate surplus in emission reduction needed.

[1] Mass emissions GHG limits are the equivalent of multiplying the County's 2020 thresholds by the project's population (for residential and transportation sectors) and thousand square feet (for nonresidential sector).

Source: Modeling conducted by Ascent Environmental in 2019.

2032 FULL BUILDOUT SCENARIO

ENERGY-RELATED GREENHOUSE GAS EMISSIONS FROM RESIDENTIAL LAND USES

The Mather South Project includes single-family homes, multifamily homes, and on-site residential units associated with the environmental education campus. Emissions were estimated based on the total units to be developed for each residence type. Emissions associated with energy use and natural gas consumption were calculated for these land uses. Emissions are summarized below in Table CC-~~7~~**8** and compared to the calculated 2032 threshold (0.73 $MTCO_2e$ per capita/year) for residential land uses. As shown in Table CC-~~7~~**8**, emissions associated with residential land uses would not exceed Sacramento County thresholds of significance.

Table CC-~~7~~8: Summary of Residential Energy-Related Greenhouse Gas Emissions in 2032[1]

	MTCO$_2$e/year	MTCO$_2$e/capita/year
Estimated Annual Residential GHG Emissions[2]	4,726	0.52
Residential Threshold of Significance	6,659	0.73
Exceeds Threshold of Significance?		**No**

Notes: GHG = greenhouse gas; MTCO$_2$e/year = metric tons of carbon dioxide equivalent per year; MTCO$_2$e/capita/year = metric tons of carbon dioxide equivalent per capita per year.

[1] Emissions estimates include solar photovoltaics as required under the 2019 Title 24, Part 6 Standards.

[2] Total GHG emissions do not include emissions associated with water use or waste generation.

Calculation details can be found in Appendix AQ-GHG-1.

Source: Modeling conducted by Ascent Environmental in 2019.

ENERGY-RELATED GREENHOUSE GAS EMISSIONS FROM NONRESIDENTIAL LAND USES

The Mather South Project includes nonresidential land uses, such as two elementary schools, an environmental education campus, a research and development campus, retail, community center, and parks. Emissions associated with energy use and natural gas consumption were calculated for these land uses. Emissions are summarized below in Table CC-~~8~~**9** and compared to the calculated 2032 threshold (4.28 MTCO$_2$e/Ksf) for nonresidential land uses. As shown in Table CC-~~8~~**9**, GHG emissions associated with nonresidential land uses would not exceed the Sacramento County thresholds of significance in 2032.

Table CC-~~8~~9: Summary of Nonresidential Energy-Related Greenhouse Gas Emissions in 2032

	MTCO$_2$e/year	MTCO$_2$e/Ksf/year
Estimated Annual Nonresidential GHG Emissions [1]	1,827	2.28
Nonresidential Threshold of Significance	3,961	4.28
Exceeds Threshold of Significance?		**No**

Notes: GHG = greenhouse gas; MTCO$_2$e/year = metric tons of carbon dioxide equivalent per year; MTCO$_2$e/Ksf/year = metric tons of carbon dioxide equivalent per 1,000 square feet per year.

[1] Total GHG emissions do not include emissions associated with water use or waste generation.

Source: Modeling conducted by Ascent Environmental in 2019.

TRANSPORTATION-RELATED GREENHOUSE GAS EMISSIONS

A traffic study was conducted for the Mather South Project, which included project-generated VMT and trips for the existing-plus-project (i.e., 2035) scenario. This analysis conservatively assumes that the full buildout VMT estimates would occur in 2032, the project's buildout year. The total population for all residential land uses of the project was used to compare the estimated mobile emissions to the 2032 VMT threshold of 1.47 MTCO$_2$e per capita. As shown in Table CC-~~9~~**10**, GHG emissions associated with transportation would exceed the Sacramento County threshold of significance.

Table CC-~~9~~10: Summary of Transportation-Related Greenhouse Gas Emissions in 2032

	$MTCO_2e$/year	$MTCO_2e$/capita/year
Estimated Annual Transportation GHG Emissions	22,766	2.50
Transportation Threshold of Significance	13,410	1.47
Exceeds Threshold of Significance?		**Yes**

Notes: GHG = greenhouse gas; $MTCO_2e$/year = metric tons of carbon dioxide equivalent per year; $MTCO_2e$/capita/year = metric tons of carbon dioxide equivalent per capita per year.

Source: Modeling conducted by Ascent Environmental in 2019.

EMISSIONS TOTAL

Emissions from all sectors are summarized below in Table CC-~~10~~**11**.

Table CC-~~10~~11: Summary of Unmitigated Annual Greenhouse Gas Emissions Associated with the Project at Full Buildout (2032)

Sector	GHG Emissions ($MTCO_2e$/year)	Mass Emissions GHG Limit ($MTCO_2e$/year)[1]	Reduction Needed ($MTCO_2e$/year)
Residential Energy	4,726	6,657	(1,933)
Nonresidential Energy	1,827	3,961	(2,134)
Transportation	22,766	13,410	5,289
Landscape Equipment	61	NA	NA
Waste Generation	1,894	NA	NA
Water Use	341	NA	NA
Project Total	31,614	NA	NA

Notes: GHG = greenhouse gas; $MTCO_2e$/year = metric tons of carbon dioxide equivalent per year; NA = not applicable. Parentheses indicate surplus in emission reduction needed.

[1] Mass emissions GHG limits are the equivalent of multiplying the County's extrapolated 2032 thresholds by the project's population (for residential and transportation sectors) and thousand square feet (for nonresidential sector).

Source: Modeling conducted by Ascent Environmental in 2019.

Energy-related emissions associated with the proposed residential land uses would result in 0.52 $MTCO_2e$ per capita, which is below the 0.73 $MTCO_2e$ per-capita threshold. Energy-related missions from nonresidential land uses would result in 2.28 $MTCO_2e$/Ksf, which is below the 4.28 $MTCO_2e$/Ksf threshold. There would be a surplus in emissions reductions needed for both the residential and nonresidential sectors, by 1,933 and 2,134 $MTCO_2e$/year, respectively. Emissions from project-generated VMT in 2032 would result in 2.50 $MTCO_2e$ per capita, which is above the 1.47 $MTCO_2e$ per-capita threshold. The surplus of emissions reductions from the residential and nonresidential sectors can be applied to GHG emissions reductions needed for the mobile sector. The additional reduction of 4,067 $MTCO_2e$/year would reduce the mobile sector's per capita emissions to 2.05 $MTCO_2e$, but would still require an additional reduction of 5,289 $MTCO_2e$/year to meet the threshold. Even with the additional

reductions in GHG emissions from the residential and nonresidential energy sectors, project-generated GHG emissions would exceed applicable Sacramento County thresholds of significance for transportation and result in a cumulatively considerable contribution to climate change. This impact would be potentially significant.

MITIGATION MEASURES

CC-1. Implement Mitigation Measure AQ-2. Emissions estimates account for all incorporated design measures (as indicated in the Air Quality Mitigation Plan [AQMP] in Appendix AQ-2 of this EIR). These include traffic calming measures and a neighborhood electric vehicle (NEV) network. The measures of the AQMP would reduce GHG emissions through reduced vehicle idling and fuel consumption, and switching to cleaner fuels (i.e., electricity).

CC-2. Reduce greenhouse gas emissions on-site. The project applicant shall incorporate the following mitigation measures into the project to reduce operational emissions of GHGs to the extent feasible.

TRANSPORTATION

Although the project has not committed to implementing Tier 1 or 2 of the California Green Building Standards, it is considered feasible mitigation and would involve the following design features for the project:

- For each single-family residential unit, install a listed raceway, associated overcurrent protective device and the balance of a dedicated 208/240-volt branch circuit at 40 amperes (amp) minimum, to pre-wire the home for electric vehicle charging. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or unit subpanel and shall terminate into a listed cabinet, box, or other enclosure near the proposed location of an Electric Vehicle (EV) charger. Raceways are required to be continuous at enclosed, inaccessible, or concealed areas and spaces. The service panel and/or subpanel shall provide capacity for a 40-amp minimum dedicated branch circuit. All electrical circuit components and Electric Vehicle Service Equipment (EVSE), including a receptacle or box with a blank cover, related to Section A4.106.8 of the California Green Building Standards Code shall be installed in accordance with the California Electrical Code.
- Multifamily residential buildings shall design at least 10 percent of parking spaces to include EVSE, or a minimum of two spaces to be installed with EVSE for buildings with 2-10 parking spaces. EVSE includes EV charging equipment for each required space connected to a 208/240-volt, 40-amp panel with conduit, wiring, receptacle, and overprotection devices.
- Nonresidential buildings shall design at least 10 percent of parking spaces to include EVSE, or a minimum of two spaces to be installed with EVSE for buildings with 2-10 parking spaces. EVSE includes EV charging equipment for

each required space connected to a 208/240-volt, 40-amp panel with conduit, wiring, receptacle, and overprotection devices.

- Nonresidential land uses with 20 or more on-site parking spaces shall dedicate preferential parking spaces to vehicles with more than one occupant and zero emission vehicles (ZEVs) (including battery electric vehicles and hydrogen fuel cell vehicles). The number of dedicated spaces should be no less than two spaces or 5 percent of the total parking spaces on the individual project site, whichever is greater. These dedicated spaces shall be in preferential locations such as near the main entrances to the buildings served by the parking lot and/or under the shade of structures or trees. These spaces shall be clearly marked with signs and pavement markings. This measure shall not be implemented in a way that prevents compliance with requirements in the California Vehicle Code regarding parking spaces for disabled persons or disabled veterans.
- Research the feasibility of a monetary incentive program for future residents to purchase electric vehicles.

BUILDING ENERGY

Although the project has not committed to implementing Tier 1 or 2 of the California Green Building Standards, it is considered feasible mitigation and would involve the following design features for the project:

- All project buildings shall be designed to include Cool Roofs in accordance with the requirements set forth in Tier 2 of the California Green Building Energy Code, Sections A4.106.5 and A5.106.11.2.
- All project buildings shall comply with requirements for water efficiency and conservation as described in the California Green Building Standards Code, Divisions 4.3 and 5.3.
- Multiple electric receptacles shall be included on the exterior of all nonresidential buildings and accessible for purposes of charging or powering electric landscaping equipment and providing an alternative to using fossil fuel-powered generators. The electrical receptacle shall have an electric potential of 100 volts. There should be a minimum of one electrical receptacle on each side of the building and one receptacle every 100 linear feet around the perimeter of the building.
- Ensure that all appliances and fixtures installed in buildings developed under the project are Energy Star®-certified if an Energy Star®-certified model of the appliance is available. Types of Energy Star®-certified appliances include boilers, ceiling fans, central and room air conditioners, clothes washers, compact fluorescent light bulbs, computer monitors, copiers, consumer electronics, dehumidifiers, dishwashers, external power adapters, furnaces, geothermal heat pumps, programmable thermostats, refrigerators and freezers, residential light fixtures, room air cleaners, transformers, televisions, vending machines, ventilating fans, and windows (EPA 2018). If EPA's Energy Star® program is discontinued and not replaced with a comparable certification program before

appliances and fixtures are selected, then similar measures which exceed the most current California Green Building Standards Code may be used.

- **All residential appliances, including all space and water heating and cooking appliances, shall** ~~Require all space and water heating~~ be solar- or electric-powered**. Use of natural gas for heating or cooking in residences shall be prohibited.** ~~and only allow natural gas usage for cooking appliances in residences, as feasible.~~
- Install high efficiency lighting (i.e., light emitting diodes) in all streetlights, security lighting, and all other exterior lighting applications.

WASTE GENERATION

- Create a local composting program for residents to achieve the statewide 75-percent waste diversion target.

Implementation of Mitigation Measure CC-2 would reduce GHG emissions associated with the mobile sector, however they would not be reduced to a level that would achieve the sector's target. Thus, the surplus of GHG emissions reductions achieved by the energy sector would be credited to the mobile sector. GHG emissions reductions achieved through implementation of Mitigation Measures CC-1 and CC-2 are shown below in Table CC-~~11~~**12**.

Table CC-~~11~~12: Summary of Greenhouse Gas Emission Reductions from Mitigation Measures in 2032

Sector	Annual GHG Emissions ($MTCO_2e$/year)	Mass Emissions GHG Threshold ($MTCO_2e$/year)	Reduction Needed ($MTCO_2e$/year)	Reduction Credited to Transportation Sector ($MTCO_2e$/year)	Threshold Met?
Mitigation Measures					
EV Charging	NA	NA	NA	2,404	NA
100 Percent Solar on All Nonresidential Buildings	NA	NA	NA	1,195	NA
100 Percent Solar on All Multifamily Residential Buildings	NA	NA	NA	555	NA
Tree Planting	NA	NA	NA	NA	NA
Emissions Sector Totals					
Residential Energy	4,726	6,659	(1,933)	1,933	Yes
Nonresidential Energy	1,827	3,961	(2,134)	2,134	Yes

Sector	Annual GHG Emissions ($MTCO_2e$/year)	Mass Emissions GHG Threshold ($MTCO_2e$/year)	Reduction Needed ($MTCO_2e$/year)	Reduction Credited to Transportation Sector ($MTCO_2e$/year)	Threshold Met?
Transportation	13,710	13,410	301	NA	No
Landscape Equipment	61	NA	NA	NA	NA
Waste Generation	1,061	NA	NA	834	NA
Water Use	341	NA	NA	NA	NA
Total	21,726	NA	NA	9,055	NA

Notes: GHG = greenhouse gas; $MTCO_2e$/year = metric tons of carbon dioxide equivalent per year; NA = not applicable; EV = electric vehicle. Parentheses indicate surplus in emission reduction needed.

Source: Modeling conducted by Ascent Environmental in 2019.

Although area-source (i.e., landscape equipment), waste generation, and water use are not captured under the County's GHG thresholds, reduction in these emissions sectors can be counted toward achieving the transportation sector's threshold.

As shown in Table CC-~~11~~**12** above, implementation of Mitigation Measures CC-1 and CC-2 would not reduce transportation-related GHG emissions to meet the recommended 2032 threshold. After mitigation is applied, GHG emissions associated with the transportation sector would be 13,710 $MTCO_2e$/year, or 1.49 $MTCO_2e$/capita/year. To reach the 1.47 $MTCO_2e$/capita/year threshold, an 301 $MTCO_2e$/year is required to be reduced to meet the threshold.

CC-3. Purchase carbon offsets. In addition to Mitigation Measures CC-1 and CC-2, the project developer shall offset the remaining GHG emissions that exceed the transportation mass emission threshold of 301 $MTCO_2e$/year for the lifetime of the project (i.e., 25 years) (SMAQMD 2018) by funding activities that directly reduce or sequester GHG emissions or, if necessary, obtaining carbon credits. This mitigation measure is consistent with guidance recommended by SMAQMD and CARB (SMAQMD 2018:6-12 and CARB 2017:152). This measure is also consistent with the State CEQA Guidelines, which recommend several options for mitigating GHG emissions. State CEQA Guidelines Section 15126.4(C)(3) states that measures to mitigate the significant effect of GHG emissions may include "off-site measures, including offsets that are not otherwise required…"

Mitigation Measure CC-3 requires the project developer to implement an off-site GHG emissions reduction program or to pay GHG offset fees to compensate for the project's transportation-related emissions in excess of 301 $MTCO_2e$/year. Based on the results shown in Table CC-~~11~~**12**, the total GHG emissions that would need to be offset by the project would be 7,519 $MTCO_2e$.

SMAQMD and CARB recommend that lead agencies prioritize direct investments in GHG reductions near the project site to provide potential local air quality and economic co-benefits. For example, direct investment in a local building retrofit program can pay for cool roofs, solar panels, solar water heaters, smart meters, energy-efficient lighting, energy-efficient windows, insulation, and water conservation measures for existing buildings within the geographic area of the project. Other examples of local direct investments include financing installation of regional electric vehicle charging stations, paying for electrification of public school buses, and investing in local urban forests. However, it is critical that any such investments in actions to reduce GHG emissions are real and quantifiable, as determined by the County, SMAQMD, or a consultant selected by the County.

Where development of a local offset is not feasible, the County shall allow project proponents to mitigate GHG emissions through the purchase of local or California-only carbon credits issued through **a** ~~the CAPCOA Rx program or~~ CARB-accredited offset project registry. Carbon offsets purchased through these programs meet the criteria of additionally and represent emissions reduction that would not otherwise occur, satisfying the CEQA mitigation requirements. Establishment of offsets or purchases of carbon credits to offset operation-generated GHG emissions should be made before recordation of small lot final maps and proof of purchase shall be provided by the applicant to the County.

Implementation of Mitigation Measure CC-1 requires the project to comply with all provisions included in the AQMP. This mitigation would be consistent with provisions of General Plan Policy AQ-4. Implementation of Mitigation Measure CC-2 would further reduce GHG emissions associated with residential and nonresidential building energy and transportation. However, GHG emissions would not be mitigated to a less-than-significant level through the provisions of the AQMP and Mitigation Measure CC-2 alone. Thus, the purchase of carbon offsets as discussed in Mitigation Measure CC-3 would reduce the transportation-related GHG emissions to reduce mass emissions by 301 $MTCO_2e$/year for the transportation sector by 2032. With implementation of Mitigation Measure CC-3, all GHG thresholds would be met and this impact would be reduced to a **less-than-significant** level.

Impact: Climate Change Effects on the Project

As discussed previously in this section, there is substantial evidence that human-induced increases in GHG concentrations in the atmosphere have led to increased global average temperatures (climate change) through the intensification of the greenhouse effect, and associated changes in local, regional, and global average climatic conditions.

Although there is a strong scientific consensus that global climate change is occurring and is influenced by human activity, there is less certainty as to the timing, severity, and potential consequences of the climate phenomena, particularly at specific locations.

Scientists have identified several ways in which global climate change could alter the physical environment in California (CNRA 2012, DWR 2006, IPCC 2014). These include:

- increased average temperatures;
- modifications to the timing, amount, and form (rain vs. snow) of precipitation;
- changes in the timing and amount of runoff;
- reduced water supply;
- deterioration of water quality; and
- elevated sea level.

Several of these changes may translate into a variety of issues and concerns that may affect the project area, including:

- increased frequency and intensity of wildfire as a result of changing precipitation patterns and temperatures;
- reliability in water supply associated with changes to precipitation and snowmelt patterns; and
- increased risk of flood associated with sea level rise.

Annual average temperatures in Sacramento County are projected to increase steadily. According to Cal-Adapt, the project area is projected to experience a temperature increase of 3.5°F by 2050 and 5.9°F by 2099 under the low-emissions scenario, and an increase of 4.1°F by 2050 and 8.7°F by 2099 under the high-emissions scenario, as compared to the 1961 to 1990 baseline period (Cal-Adapt 2018).

Increased temperature is expected to lead to secondary climate change impacts, including increases in the frequency, intensity, and duration of extreme heat days and multi-day heat waves/events in California. Cal-Adapt defines the extreme heat day threshold for Sacramento County as 103.5°F or higher. An extreme heat day is defined as day between April through October where the maximum temperature exceeds the 98th historical percentile of maximum temperature based on daily temperature data from 1961 to 1990 (i.e., 103.5°F). From the data collected from 1961 to 1990, Sacramento County has a historical average of 4 extreme heat days per year. Sacramento County is already experiencing an increase in the frequency of extreme heat days per year with a current average of 7 to 11 extreme heat days per year from 2010 to 2016, with 16 extreme heat days in 2015 (Cal-Adapt 2018).

Cal-Adapt data shows a range of projected increases in the number of extreme heat days by 2099, all of which are at least four times the historical (1961-1990) average in both emissions scenarios. The projected annual average number of extreme heat days under the low-emissions scenario is approximately 20 days per year in 2050 and 24 days per year at the end of the century. Under the high-emissions scenario, Cal-Adapt

predicts that the project area will experience 20 extreme heat days per year in 2050 and 43 days per year by 2099 (Cal-Adapt 2018).

The project would meet the 2016 Title 24 building energy standards, which require well-insulated buildings and high-efficiency heating, ventilation, and air conditioning units. The project would also plant shade trees throughout the project area, which would assist in mitigating the urban heat island effect that may intensify with the projected increase in extreme heat days.

Fire risk data for the State of California has been projected for years 2020, 2050, and 2085. The data models the areas within the State that are projected to experience increases in area burned compared to the expected burn rate without climate change. Based on these maps, the project is not located within an area projected to experience greater than expected wildland fire risks (Cal-Adapt 2018). However, wildfires within the Sierra Nevada and areas outside the County could affect air quality in Sacramento County. Wildland fires produce substantial emissions of particulate matter (smoke, soot), which may cause health effects including restricted breathing and aggravation of existing respiratory and cardiovascular diseases in the short-term, and alterations to immune systems and cancer from chronic exposure. Particulate matter from wildfire dissipates throughout the Central Valley, degrading air quality conditions for short or extended periods of time. The duration of wildfire-related particulate matter in the County's air is linked to wind patterns originating from the Sacramento-San Joaquin Delta. Colloquially known as the "Delta Breeze," oceanic winds are channeled through the Delta into Sacramento County, and help disperse air pollutants north of the Sacramento Valley; however, during about half of the days from July to September, a phenomenon called the "Schultz Eddy" prevents this from occurring. These natural phenomena affect the severity of wildfire-related air pollution in Sacramento County (SMAQMD 2016). For example, during the summers of 2013 through 2015, several wildfire incidents occurred in Northern California that increased levels of particulate matter within Sacramento County.

Sacramento Metropolitan Fire District (Metro Fire) is a combination of 16 smaller fire departments in the Sacramento area. Metro Fire's Community Wildfire Protection Plan (CWPP) works to improve the resiliency of the Sacramento area to wildfires. This is achieved through identifying community wildfire risk, delineating the wildland/urban interface, implementing vegetation best management practices, and providing education and outreach (Metro Fire 2012).

The Sacramento County General Plan includes several policies described above that address and mitigate wildfire risk. As determined by CALFIRE, the project is not located in an area anticipated to have an increase in fire risk because of climate change. Further, through implementation of Metro Fire's CCWP and the policies listed in the County's General Plan, wildland fire risk would be reduced.

The Sacramento County Water Agency (SCWA) would be the responsible water purveyor for the project and has prepared a Water Supply Assessment (WSA) to demonstrate that the planned water supplied of the SCWA are sufficient to meet the

demands of the project in addition to the existing and projected water supply obligations of SCWA (SCWA 2018). Water supply was evaluated for normal, single-dry, and multiple-dry years. The project lies entirely within the boundaries of SCWA's Zone 40/41 service area.

Based on the WSA, the project is anticipated to require 1,484 acre-feet of water per year. Water demands for the project have been addressed in the latest Zone 41 Urban Water Management Plan and the Zone 40 Water Supply Master Plan (SCWA 2011, 2016). The projected water demand in the UWMP is estimated in gallons per capita per day and based on the projected population as determined by SACOG for the year 2035. The project is located within SACOG's Blueprint Preferred Smart Growth area and within the build-out area identified in the Water Supply Master Plan; therefore, the population projection for the project area is included in the total population projection for SCWA. Thus, based on the WSA conducted for the project and the most current water supply projections, water supply would be adequate for the project (SWCA 2018).

With regards to increased flood risk, the project is not located in a coastal zone or within areas where an increase threat of flood may occur (Cal-Adapt 2018). However, Sacramento County is vulnerable to riverine flooding. Riverine flooding generally occurs as a result of prolonged rainfall, or rainfall combined with snowmelt and/or already saturated soils from previous rain events. Riverine flooding can occur anytime from November through April and is largely caused by heavy and continued rains. Intense storms may overwhelm local waterways, as well as threaten the integrity of flood control structures.

Sacramento County is considered highly likely to experience catastrophic flooding as a result of riverine flooding. Due to the County's relatively flat, generally low-lying terrain and numerous waterways, historically, flooding has constituted the most frequent natural hazard experienced by Sacramento County. While it is uncertain precisely how and to what extent climate change will affect flooding events in Sacramento County, it is reasonable to expect that an increase in flooding could have serious ramifications, because the area is already considerably vulnerable. More rapid and earlier snowmelt, or increased potential for high-intensity storm events, compared to historical trends, could potentially place additional strain on the components of flood control systems (e.g., levees, dams), and increase the likelihood of flooding in Sacramento County. The project area is not located in a zoned area by the U.S. Federal Emergency Management Agency, which means that the area would have protection from the 100-year flood when construction is complete (FEMA 2012). Thus, development of the project at the project area would be sufficiently protected by flood risk. Refer to Section 12, "Hydrology, Drainage, and Water Quality" for more details about flood protection around the project.

Based on currently available data, the project is not located within an area projected to experience a substantial increase in wildland fire risk or flooding as a result of climate changes in the future. Further water supply for the project would be adequate. Anticipated changes in future climate patterns are not anticipated to have any substantial adverse effects on the project. This impact would be **less than significant.**

MITIGATION MEASURES

No mitigation is required.

8 CULTURAL RESOURCES

INTRODUCTION

The Mather Field Project EIR (2016) evaluated the Mather South Plan Area (Plan Area) at the plan-level and that analysis is hereby incorporated by reference and summarized in this section where appropriate. This chapter describes the regulatory and environmental setting for cultural resources in the Plan Area, identifies and analyzes impacts related to cultural resources from implementation of the Mather South Project at a project-level of detail, and if necessary, recommends mitigation measures to reduce or eliminate significant impacts.

Several cultural resource studies have been conducted within the overall Mather Field Specific Plan Area, which includes the Mather South Project. The key sources of data and information used in the preparation of this section are listed below.

- detailed records search data,
- input from Native American tribes and historical organizations,
- a review of historical literature and previous cultural reports, and
- field surveys.

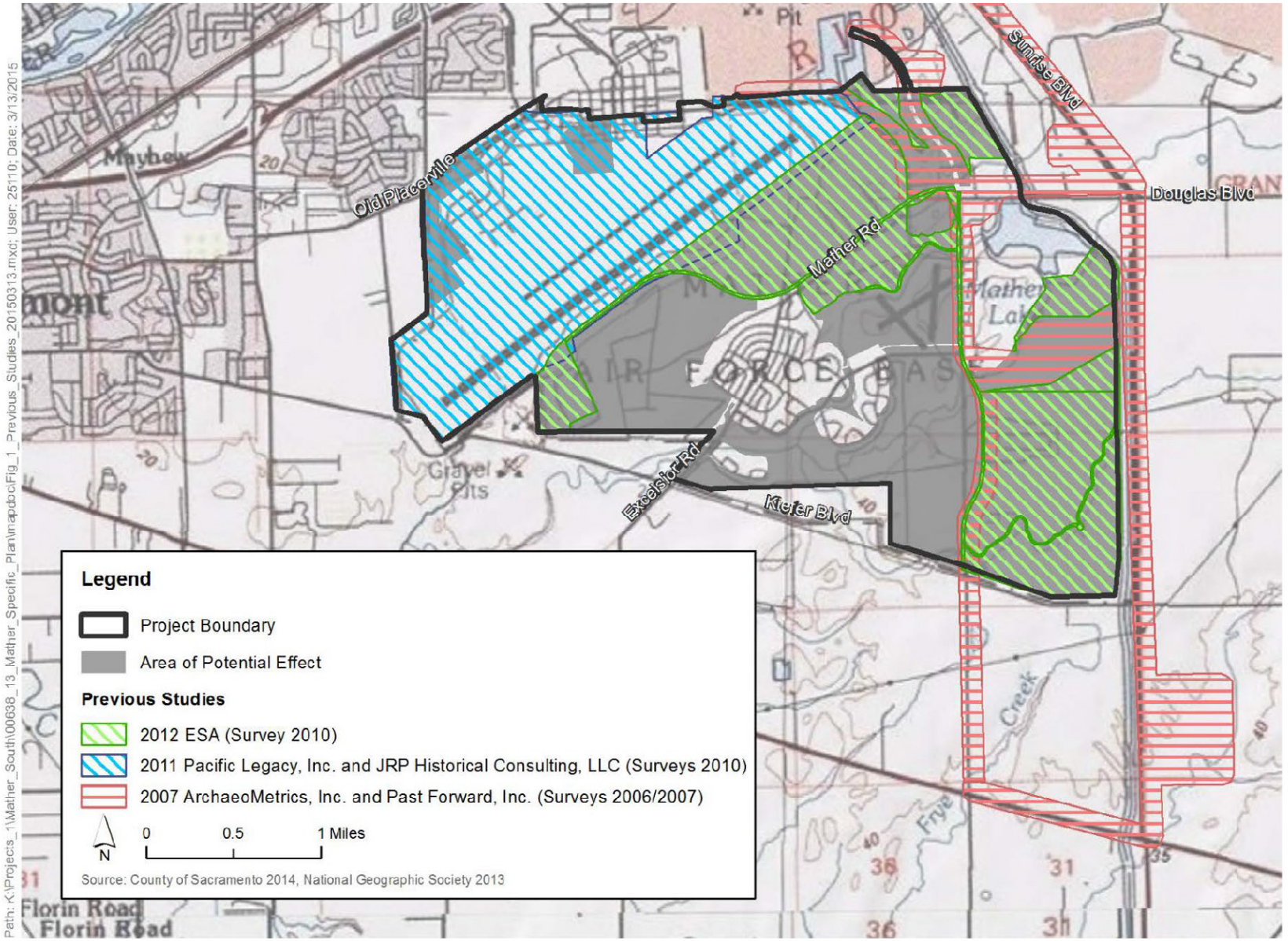
Plate CR-1, below, shows the Mather Field Project study area, the Area of Potential Effect (APE), and the previous cultural study coverage locations. The Plan Area is a subset of this area and highlighted in yellow.

During the NOP scoping process, one comment was received about the County's requirements, under AB 52 and SB 18, to notify local tribes of the project.

A copy of the NOP and comment letters received in response to the NOP are included in Appendix PD-2 of this Mather South Project Draft EIR.

ENVIRONMENTAL SETTING

Much of the information in this section is summarized from the *Mather Field Project Cultural Resources Survey Report*, (Survey Report) prepared by ESA, in June 2012 (ESA 2012). The Survey Report was prepared to support the processing of the Mather Field Specific Plan, Draft Environmental Impact Statement (EIS). Parenthetical citations indicate information from additional sources.



Source: County of Sacramento

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Plate CR-1: Mather Field Project Study Area and Cultural Resources Survey Coverage

PREHISTORY

Central Valley California archaeology has been described as a series of patterns that are non-temporal, integrative cultural units - the general life way shared by people within a given geographic region. Specifically, three such patterns, which overlap somewhat in adjoining areas, are recognized for Central Valley California: the Windmiller, Berkeley, and Augustine Patterns.

> The Windmiller Pattern, which may represent the advent of early Penutian speaking populations, extends from approximately 4,500 to 3,000 years before present. This pattern was focused primarily on the lower Central Valley and Delta regions and reflects the influence of a lacustrine or marsh adaptation.
>
> The Berkeley Pattern extends roughly from 3,000 to 1,500 years before present. The Berkeley Pattern has a greater emphasis on the exploitation of the acorn as a staple than the earlier Windmiller Pattern. The Berkeley Pattern initially may represent the spread of proto-Miwok and Costanoans, collectively known as Utians, from their hypothesized lower Sacramento Valley/Delta homeland.
>
> The Augustine Pattern extended temporally from circa 1,500 years before present to European contact. Augustine initially appears to be largely an outgrowth of the Berkeley Pattern but may have become a blend of Berkeley traits with those carried into the state by the migration of Wintuan populations from the north.

ETHNOLOGY

The Mather South Plan Area is believed to have been inhabited ethnographically by the Nisenan, also known as Southern Maidu, and the Plains Miwok. The Nisenan, together with the Maidu and Konkow, form the Maiduan language family of the Penutian linguistic stock. The traditional area of the Southern Nisenan is thought to have been located between the drainages of the Feather River and the American River. Within this region, the Nisenan are thought to have occupied the area from about Big Chico Creek to the American River or the Cosumnes River.

HISTORY

Prior to the Gold Rush, the first recorded non-Native presence in the area was in 1827 by Jedediah Smith whose trapping group explored the area in his search for a pass over the Sierra Nevada.

Johann August Sutter arrived in San Francisco in 1839 with a Mexican general passport for a small colony which grew into an enormous land grant of 48,000 acres at the junction of the Sacramento and American Rivers. Here he established New Helvetia (present day Sacramento). In 1839, Sutter built an adobe house which in four years grew into a wooden-walled trading post known as Sutter's Fort. In 1844 William A. Leidesdorff was granted 35,000 acres along the American River called "The Rancho Rio de las Americanos."

When gold was discovered in 1848, mining camps sprang up along the Sacramento and American rivers. Agricultural communities in the American River basin were established to feed the miners and expanded as miners left the gold fields and turned to farming and ranching.

History of Mather Air Force Base

All of the built environment cultural resources located in the Mather South Plan Area are related to the development of the former Mather Air Force Base (Mather AFB) property which has been used for aviation since 1918. As part of the *Historic Resources Inventory and Evaluation Report: Sacramento Mather Airport, Sacramento County, California*, JRP prepared a history of Mather AFB (JRP 2011), which is summarized below.

American aircraft were first used in combat during World War I. The Army Air Corps quickly assembled a string of training facilities in 1917 and 1918 to train pilots in the use of military aircraft. Mather AFB was one such facility. The Army Air Corps purchased about 800 acres of pasture land in Sacramento County, and built a small landing strip and temporary buildings sufficient to allow training to begin in June 1918 (JRP 2011: 4). Opened as Mills Field, the facility was soon renamed to honor Second Lieutenant Carl Spencer Mather, an Army Air Service test pilot killed that year in an aerial training mission. The war ended on November 11, 1918, and shortly thereafter the Air Corps shut down the training operations at Mather AFB (JRP 2011: 3-4, Pacific Legacy 2010: 11, ESA 2012: 3-14).

Between the two World Wars, Mather AFB remained in the ownership of the federal government and was used sparingly as an auxiliary airfield for larger Air Corps facilities elsewhere (JRP 2011: 5). No buildings remain from this relatively quiet interwar period (Pacific Legacy 2010: 11-12). From 1938 to 1941, the War Department established new bases throughout the nation (JRP 2011: 6). California was home to a disproportionately large number of these bases, reflecting the concern that the U.S. would soon be at war in the Pacific (Foster-Wheeler and JRP 2000: 7-19, 7-20). Mather AFB was reactivated in May 1941 and served various purposes during World War II. For much of the war, it was a Port of Debarkation, a take-off point for aircraft, equipment, and personnel bound for the Pacific (JRP 2011: 8, Pacific Legacy 2010: 12).

Following the conclusion of World War II, many bases, including Mather AFB, expanded in response to perceived threats from the Soviet Union and other potentially hostile nations (JRP 2011: 8). From 1958 to 1963, Mather AFB was home to a squadron of long-range bombers, many of which were nuclear armed, as part of the Strategic Air Command (SAC). The SAC presence began to diminish in 1963, and the 320th Bombardment Wing absorbed the 4134th. The new unit's primary operations were bombardment training and airborne refueling, and, consequently, ground alert operations ceased at Mather AFB. In the periods of 1965 to 1966 and 1972 to 1973, there were major reductions to the 320th. To serve operations in Southeast Asia, SAC relocated much of its Mather unit to new bases (JRP 2011: 9, Ravenstein 1984: 170-171). Through 1989, Mather AFB was home to a variety of aircraft, from refueling craft to navigational training craft.

In 1988, the Secretary of Defense created the Base Realignment and Closure Commission, which managed an orderly process for closing or realigning military bases whose original purpose was no longer needed. Over the next decade, dozens of military bases throughout the U.S. were closed, including numerous facilities in California. The Air Force officially closed Mather AFB in September 1993 (JRP 2011: 13, Pacific Legacy 2010: 12). Beginning in the mid-1990s, Sacramento County began to assign portions of the former base for non-military uses. In May 1995, the airport area reopened as a general aviation facility with an air cargo focus, operated by the Sacramento County Airport System. A portion of the base was designated as Mather Regional Park. In 1997, the Department of Veterans Affairs (VA) took over the old Mather hospital and currently operates it as a VA hospital (JRP 2011: 13).

Evidence of previous military training is present in the Mather South Plan Area, particularly in the central eastern portion of the site, by fox holes, trenches for communication wires, and observation posts (ESA 2012: 5-9). There are ten vernacular masonry buildings and seven concrete/earthen covered bunkers within the fence line of the site (ESA 2012: 5-2). Ten of these structures (six buildings and four bunkers) were built between 1957 and 1964, based on historic aerial photographs (ESA 2012: 5-2). All structures have been vandalized with graffiti, all of the copper wires have been pulled out of the walls and ceilings, and nearly all of the windows have been broken (ESA 2012: 5-3). The bunkers are also covered with graffiti, but the doors have been either welded shut or have a new, heavy-duty padlock inside an iron tube to prevent additional tampering (ESA 2012: 5-3).

REGULATORY SETTING

FEDERAL

SECTION 106 OF THE NATIONAL HISTORIC PRESERVATION ACT

Federal regulations for cultural resources are governed primarily by Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended). Section 106 of the NHPA requires Federal agencies to take into account the effects of their undertakings on historic properties and affords the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings. The ACHP's implementing regulations are the "Protection of Historic Properties" 36 Code of Federal Regulations (CFR) Part 800. The Federal agency first must determine whether it has an undertaking that is a type of activity that could affect historic properties. Historic properties are those that meet the criteria for or are listed in the National Register of Historic Places (NRHP).

NATIONAL REGISTER OF HISTORIC PLACES

"Historic properties," as defined by the ACHP, include any "prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in the NRHP maintained by the Secretary of the Interior" (CFR Section 800.16(I)). Eligibility for

inclusion in the NRHP is determined by applying the following criteria, developed by the National Park Service in accordance with the NHPA:

> The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association and:
>
> > (a) That are associated with events that have made a significant contribution to the broad patterns of our history; or
> >
> > (b) That are associated with the lives of persons significant in our past; or
> >
> > (c) That embody the distinctive characteristics of a type, period or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
> >
> > (d) That have yielded, or may be likely to yield, information important in prehistory or history.

STATE

Under the California Environmental Quality Act (CEQA), lead agencies must consider the effects of their projects on historic resources. CEQA defines a “historic resource” as a resource listed in, or determined to be eligible for listing in, the California Register of Historical Resources (CRHR), a resource included in a local register of historical resources, and any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant (Section 15064.5[a] of the CEQA Guidelines). Sacramento County does not currently have a local register. Public Resources Code (PRC) Section 5024.1 requires that any properties that can be expected to be directly or indirectly affected by a proposed project be evaluated for CRHR eligibility. According to PRC Section 5024.1(c)(1–4), a resource may be considered historically significant if it retains integrity and meets at least one of the following criteria. A property may be listed in the CRHR if the resource:

1. Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;

2. Is associated with the lives of persons important in our past;

3. Embodies the distinctive characteristics of a type, period, region or method of installation, or represents the work of an important creative individual, or possesses high artistic values; or

4. Has yielded, or may be likely to yield, information important in prehistory or history.

To be considered eligible, a resource must meet one of the above stated criteria and also retain integrity. Integrity has been defined by the National Park Service as consisting of seven elements: location, design, setting, materials, workmanship, feeling, and association.

Impacts to historical resources that materially impair those characteristics that convey its historical significance and justify its inclusion or eligibility for the NRHP or CRHR are considered a significant effect on the environment (CEQA guidelines 15065(a)(1)).

In addition to historically significant resources, which can include archaeological resources that meet the criteria listed above, an archeological site may meet the definition of a “unique archeological resource” as defined in PRC Section 21083.2:

> An archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:
>
> > (1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
> >
> > (2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.
> >
> > (3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

If it can be demonstrated that a project will cause damage to a unique archaeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. To the extent that they cannot be left undisturbed, mitigation measures are required (Section 21083.2 (a), (b), and (c)). Section 21083.2(g) describes a *unique archaeological resource* as an archaeological artifact, object, or site about which it can be clearly demonstrated that without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

State CEQA Guidelines Section 15064.5, subdivision (e), requires that excavation activities be stopped whenever human remains are uncovered and that the county coroner be called in to assess the remains. If the county coroner determines that the

remains are those of Native Americans, the Native American Heritage Commission (NAHC) must be contacted within 24 hours. At that time, the lead agency must consult with the appropriate Native Americans, if any, as timely identified by the NAHC. Section 15064.5 directs the lead agency (or applicant), under certain circumstances, to develop an agreement with the Native Americans for the treatment and disposition of the remains.

Senate Bill 18

Senate Bill 18 (Government Code Sections 65352.3 and 65352.4) requires that, before the adoption or amendment of a general plan proposed on or after March 1, 2005, a city or county must provide California Native American tribes an opportunity to participate in local land use decisions at an early planning stage, for the purpose of protecting, or mitigating impacts to, Native American places, features, and objects.

Assembly Bill 52

As of July 1, 2015, the "[a] project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment." (Pub. Resources Code, § 21084.2.). To help determine whether a project may have such an effect, the Public Resources Code requires a lead agency to consult with any California Native American tribe that requests consultation and is traditionally and culturally affiliated with the geographic area of a project. That consultation must take place before the determination of whether a negative declaration, mitigated negative declaration, or environmental impact report is required for a project. (Pub. Resources Code, § 21080.3.1.)

AB 52 adds tribal cultural resources to the categories of cultural resources in CEQA, which had formerly been limited to historic, archaeological, and paleontological resources. "Tribal cultural resources" are defined as either:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

   a. Included or determined to be eligible for inclusion in the California Register of Historical Resources (CRHR)

   b. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

(2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

As stated in Section 11 of AB 52, this act shall apply only to a project that has a notice of preparation or a notice of negative declaration or mitigated negative declaration filed on or after July 1, 2015. The Revised Notice of Preparation (NOP) for the Mather South

Project EIR was filed with the State Clearinghouse on January 5, 2017. Therefore, the Mather South EIR is subject to AB -52.

On January 12, 2017, email notifications were sent to tribes who had previously requested consultation through the AB-52 process, and responses requesting consultation were received from the Ione Band of Miwok, the United Auburn Indian Community of the Auburn Rancheria (UAIC), and Wilton Rancheria. County of Sacramento Office of Planning and Environmental Review (PER) provided additional information as requested and met with representatives from one of the tribes. Additional information about consultation efforts via the AB-52 process can be found below under "Consultation."

LOCAL

SACRAMENTO COUNTY GENERAL PLAN

Relevant policies from the Sacramento General Plan include the following.

CO-150. Utilize local, state and national resources, such as the NCIC [North Central Information Center], to assist in determining the need for a cultural resources survey during project review.

CO-151. Projects involving an adoption or amendment of a General Plan or Specific Plan or the designation of open space shall be noticed to all appropriate Native American tribes in order to aid in the protection of traditional tribal cultural places.

CO-155. Native American burial sites encountered during preapproved survey or during construction shall, whenever possible, remain in situ. Excavation and reburial shall occur when in situ preservation is not possible or when the archeological significance of the site merits excavation and recording procedure. On-site reinternment shall have priority. The project developer shall provide the burden of proof that off-site reinternment is the only feasible alternative. Reinternment shall be the responsibility of local tribal representatives.

CO-157. Monitor projects during construction to ensure crews follow proper reporting, safeguards, and procedures.

CO-158. As a condition of approval of discretionary permits, a procedure shall be included to cover the potential discovery of archaeological resources during development or construction.

CO-159. Request a Native American Statement as part of the environmental review process on development projects with identified cultural resources.

Cordova Community Plan

The Cordova Community Plan does not contain specific policies related to the protection of cultural resources.

Mather Field Specific Plan and Special Planning Area

The Mather Field Specific Plan and Special Planning Area contains the following policies that are applicable to the project.

603-19. PERFORMANCE STANDARDS FOR MATHER FIELD EXCEPT THE SINGLE FAMILY RESIDENCES AND PARKS SUBAREAS AS IDENTIFIED IN SECTION 603-20.3 AS "Site D." Should any cultural resources, such as structural features, unusual amounts of bone or shell, artifacts, human remains, or architectural remains be encountered during any development activities, work shall be suspended and the Department of Community Development, Planning and Environmental Review Division shall be immediately notified at (916) 874-6141. At that time, the Division of Planning and Environmental Review will coordinate any necessary investigation of the find with appropriate specialists as needed. The project applicant shall be required to implement any mitigation deemed necessary for the protection of the cultural resources. In addition, pursuant to Section 5097.97 of the State Public Resources Code and Section 7050.5 of the State Health and Safety Code, in the event of the discovery of human remains, all work is to stop and the County Coroner shall be immediately notified. If the remains are determined to be Native American, guidelines of the Native American Heritage Commission shall be adhered to in the treatment and disposition of the remains.

603-19.1. PERFORMANCE STANDARDS FOR MATHER FIELD SINGLE FAMILY RESIDENCES AND PARKS AS IDENTIFIED IN SECTION 603-20.3 AS "Site D." Same as 603-19.

Disclosure of Cultural Resources Information

Public disclosure of site-specific cultural resources information is expressly exempt from the California Public Records Act, Government Code Sections 6250-6270. Furthermore, information obtained during Native American consultation or through consultation with the local and state agencies, including the North Central Information Center (NCIC), should remain confidential and is exempt from public disclosure under Senate Bill 922. Additionally, Sacramento County staff has signed an "Agreement to Confidentiality" with the NCIC that states that site specific information will not be distributed or released to the public or unauthorized individuals. An authorized individual is a professional archaeologist or historian that qualifies under the Secretary of Interior's standards to view confidential cultural resources materials.

SIGNIFICANCE CRITERIA

In accordance with Appendix G of the State CEQA Guidelines, a project would be considered to have a significant effect if it would result in any of the conditions listed below.

- Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines, Section 15064.5.
- Cause a substantial adverse change in the significance of an archaeological resource as defined in CEQA Guidelines, Section 15064.5.
- Disturb any human remains, including those interred outside of formal cemeteries.
- Cause a substantial adverse change in the significance of a tribal cultural resource as defined in Public Resources Code 21074.

METHODOLOGY

Review of previous cultural resource studies, archival research, Native American consultation, and fieldwork were conducted to establish what cultural resources may be present within the Mather South Plan Area and, furthermore, may be adversely affected because of implementation of the project.

PRE-FIELD RESEARCH

PREVIOUS STUDIES FOR THE MATHER FIELD AREA

The information presented below and the analysis of impacts is based on the following studies.

- *Mather Specific Plan Project Sacramento County, California.* Draft Phase Cultural Resources Survey Report. Draft December 2012. Prepared for the United States Army Corps of Engineers, Sacramento District (ESA 2012).
- Historic Resources Inventory and Evaluation Report: Sacramento Mather Airport, Sacramento County, California. Davis, CA (JRP 2011).
- Revised Draft: Archaeological Resources Inventory and Evaluation of MAMP 3 and MAMP 4, Mather Airport, Sacramento County California. Sacramento, CA (Pacific Legacy 2010).
- Final Archaeological Resources Inventory and Evaluation Sacramento Mather Airport, Sacramento County, California. Final. January. Prepared for CDM, Sacramento, CA (Pacific Legacy 2011).
- Mather Specific Plan Project Sacramento County, California: Draft Phase, Cultural Resources Survey. Sacramento, CA (ESA 2012).

Previous survey coverage for these reports is illustrated in Plate CR-1. No previously recorded resources identified through the previous studies or the records search have been recommended or determined eligible for listing in the NRHP or CRHR.

NCIC Record Search

On April 4, 2014, ICF conducted an updated records search for the Mather Field Project study area, which included the Mather South Project Plan Area at the North Central Information Center (NCIC) of the California Historical Information System (CHRIS) at California State University, Sacramento. The NCIC maintains the State of California's official records of previous cultural resource studies and recorded cultural resources for Sacramento County. ICF consulted the CHRIS base maps of previously recorded cultural resources for the entire Mather Field APE, and a ¼-mile buffer around the Mather Field Project study area. Additional sources of information, consisting of previously conducted cultural resources surveys and historic maps (from the U.S. Geological Survey and General Land Office), were selectively reviewed to identify areas that have a high potential for the presence of historic and prehistoric sites. The following resources were reviewed:

- National Register of Historic Places (NRHP) and California Register of Historical Resources (CRHR).
- California Office of Historic Preservation Historic Property Directory (2010).
- California Inventory of Historic Resources (1976).
- Historic Properties reference map.

ICF also requested a new list of studies for the records search area; a total of 33 studies have been conducted. The updated records search identified no new sites in the Mather Field Project study area subsequent to the 2012 Survey Report. However, five new resources were located within the ¼-mile buffer (P-34-2216, P-34-2219, P-34-719, P-34-2224, and P-2225). These resources are all located outside of the project boundaries for the Mather Field Project and thus outside of the Mather South Plan Area.

Consultation

On January 12, 2017, PER staff sent a notice to the Native American Heritage Commission (NAHC) requesting that it consult its sacred lands file and send a list of individuals and organizations that may have knowledge of properties of cultural or religious importance to Native Americans located within the APE and vicinity of the Mather South Project. The NAHC responded, indicating that no sacred lands file resources occur in or near the Plan Area.

Per the requirements of SB 18, PER sent notification letters via certified mail on February 17, 2017 to the seven tribal entities with traditional lands or cultural places within the boundaries of the Plan Area identified by the NAHC. PER did not receive any inquiries for consultation as a result of the SB 18 notifications.

Per AB 52, PER sent email notification to tribes who had previously requested consultation through the AB 52 process. These notifications were sent on January 12, 2017 and coincided with the release of the revised NOP for this EIR. PER received requests for consultation from the Ione Band of Miwok Indians, UAIC, and Wilton Rancheria. PER provided additional project information and electronic copies of the cultural studies/surveys conducted to representatives from each of the tribes. Project meetings were conducted with representatives from UAIC on June 28, 2017 and August 30, 2017. UAIC representatives indicated that there were no concerns or issues at this time but requested to be notified if the project is revised or expands its boundaries. To date, the Ione Band of Miwok Indians and Wilton Rancheria have not provided responses for further consultation after continued follow-up. The County has closed the consultation process with these tribes.

Field Survey

On May 15 and May 27, 2014, and between January 13 and January 23, 2015, an ICF architectural historian, an ICF archaeologist, and ICF cultural resources specialists performed updated field surveys of the APE as presented in Plate CR-1. The surveys resulted in the identification of 73 resources within the Mather Field APE. Of these 73 resources, 23 resources are located adjacent to or within the Mather South Plan Area.

During the surveys, an ICF architectural historian conducted a survey of all built environment resources (i.e., buildings, structures, and linear features) constructed before 1989 located within the Plan Area. These buildings and structures were documented with photographs and written notes.

California Department of Parks and Recreation (DPR) 523 forms were completed for buildings, structures, objects and sites within the Plan Area. Copies of these DPR forms are provided in ICF's 2014 Addendum Report for the project. This technical study can be reviewed at 827 7th Street, Room 225, Sacramento, CA 95814.

Issues Not Discussed Further

All issues have been evaluated below.

Impacts and Analysis

2016 Mather Field Project EIR Impacts Determination

The Mather Field Project EIR evaluated impacts related to cultural resources from implementation of the Mather Field Project which consisted of a realignment of Zinfandel Drive and trunk extension, creation of the Mather Preserve and the establishment of an Urban Development Area designation for the Mather South Plan Area.

The EIR concluded less than significant impacts at a programmatic-level and for the Zinfandel Drive trunk extension related to archaeological resources, unidentified human remains, and historical resources with implementation of Mitigation Measure CR-1

which would require work stoppage and notification of a professional archaeologist. The discussion of impacts can be found on pages 8-18 through 8-25 of the Mather Field Project EIR and is hereby incorporated by reference.

Adopted Mitigation Measures

CR-1: UNANTICIPATED DISCOVERIES OF CULTURAL RESOURCES: If subsurface deposits believed to be cultural or human in origin are discovered during construction activities, including those activities related to and consistent with a wetlands management plan within the proposed (Mather) Preserve area, then all work must halt within a 200-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained at the Applicant's expense to evaluate the significance of the find. If it is determined due to the types of deposits discovered that a Native American monitor is required, the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites as established by the Native American Heritage Commission shall be followed, and the monitor shall be retained at applicant's expense.

Work cannot continue within the 200-foot radius of the discovery site until the archaeologist conducts sufficient research and data collection to make a determination that the resource is either 1) not cultural in origin; or 2) not potentially eligible for listing on the National Register of Historic Places or California Register of Historical Resources.

If a potentially-eligible resource is encountered, then the archaeologist and project proponent shall arrange for either 1) total avoidance of the resource, if possible; or 2) test excavations or total data recovery as mitigation. The determination shall be formally documented in writing and submitted to the NCIC as verification that the provisions of CEQA for managing unanticipated discoveries have been met.

In addition, pursuant to Section 5097.97 of the State Public Resources Code and Section 7050.5 of the State Health and Safety Code, in the event of the discovery of human remains, all work is to stop and the County Coroner shall be immediately notified. If the remains are determined to be Native American, guidelines of the Native American Heritage Commission shall be adhered to in the treatment and disposition of the remains.

Mather South Project Impacts Determination

Summary of Findings for Cultural Resources Located in the Mather South Plan Area

A total of 23 resources (buildings, structures, infrastructure remains, and previously identified sites) originally constructed before 1989 are located adjacent to or within the Mather South Plan Area. Resources constructed after 1989 are not included in this

study because of their age and ineligibility for listing as a historic resource. Table CR-1, below, provides a summary of the cultural resources identified adjacent to or within the Mather South Plan Area, noted in the ESA 2012 report and in the ICF 2014 and ICF 2015 Addendum Reports. Overall, the resources that remain onsite are related to the former Mather AFB.

Seventeen structures located adjacent to or within the Mather South Plan Area have been categorized according to the property types established in JRP's 2011 report and were fully evaluated under NRHP and CRHR Criteria. These buildings and structures were also evaluated in accordance with Section 15064.5(a) of CEQA. Through the evaluation, these buildings were found not to be significant resources eligible for listing in the NRHP or CRHR. The 17 structures in the APE are among dozens of extant buildings at the former Mather AFB. All buildings that remain were constructed during the Cold War-era expansion of the base during the 1950s and 1980s. These resources were not found to be significant additions to Mather AFB. There is no indication that they played an important role individually or as a group in supporting Mather AFB operations and do not appear to be significant under NRHP Criterion A or CRHR Criterion 1.

According the National Register Bulletin 15, *How to Apply the National Register Criteria for Evaluation,* NRHP Criterion B "is generally restricted to those properties that illustrate a person's important achievements" (U.S. DOI 1995: 14). To be found eligible under NRHP Criteria B or CRHR 2, the property must be directly tied to the important person and the place where the individual conducted or produced the work for which he or she is known. Military buildings and structures that were constructed onsite represent the collective efforts of many individuals, rather than the work of any single individual. Thus, the remaining Mather AFB buildings and structures ultimately lack the level of singular importance necessary for listing in the NRHP under Criterion B or the CRHR under Criterion 2. Most of these resources are unadorned buildings and structures typical of utilitarian architecture and engineering features found on military bases throughout California and elsewhere. Therefore, they do not appear to be significant under NRHP Criterion C or CRHR Criterion 3.

Because these building and structures are not likely to yield any information important in prehistory or history, they do not appear to be significant under NRHP Criterion D or CRHR Criterion 4.

The remaining 6 of the 23 resources identified are resources that ICF has categorized as minor, ubiquitous, or fragmentary infrastructure (MUFI). Essentially, they are remains of the Mather AFB infrastructure and no longer retain necessary associations to context, historic distinction, or integrity to be considered eligible for listing in the NRHP or CRHR. For this project, MUFI is defined as the following resource type:

- previously identified resources that no longer exist;
- building and structure ruins and foundations;
- air strips and landing pads;

- culverts; and
- fences, walls, gates, and gate posts.

These resources were fully evaluated under NRHP and CRHR Criteria in DPR 523 forms are located in Appendix D of the ICF 2014 Addendum Report and Appendix C of ICF 2015 Addendum Report.

Table CR-1: Identified Cultural Resources Adjacent or Within the Mather South Plan Area

Resource Reference Number	Previous Site Name	Mather Building Number	Original Use if known	Property Type/Note	Built Environment or MUFI	Year Built	OHP Status Code-6Z*
39		18003	Dog kennel		BE	1961	6Z
40		18002	Dog kennel office		BE	1961	6Z
41		18005	Water well		BE	1958	6Z
42		unknown		Structure remains	MUFI	n/a	6Z
43	MSP-MSB-01	108202 and 18021	Entry control office		BE	1958	6Z
44	MSP-MSB-10	18010	Munition maintenance office		BE	1958	6Z
45		18011	Electrical generator station		BE	1980	6Z
46	MSP-MSB-09	18015	Munitions inspection		BE	1958	6Z
47		18018	Missile assembly		BE	1975	6Z
48	MSP-MSB-08	18025	Storage igloo		BE	1958	6Z
49	MSP-MSB-07	18030	Storage igloo		BE	1958	6Z
50	MSP-MSB-06	18035	Storage igloo		BE	1958	6Z
51	MSP-MSB-05	18040	Storage igloo		BE	1958	6Z
52		18092	Security control tower	Structure remains	MUFI	1958	6Z
53	MSP-MSB-04	18050	Storage igloo		BE	1958	6Z

Resource Reference Number	Previous Site Name	Mather Building Number	Original Use if known	Property Type/Note	Built Environment or MUFI	Year Built	OHP Status Code-6Z*
54		18042, 18044, 18046	Storage igloos		BE	1975	6Z
55	MSP-MSB-02	18070	Munitions shop		BE	1958	6Z
56	MSP-MSB-03	18060	Munitions storage		BE	1958	6Z
57a/b		18080 and 18090	Explosives facilities	Structure remains	MUFI	1966	6Z
58		18051	Fire team facility		BE	1980	6Z
59				Culvert	MUFI	n/a	6Z
60				Culvert	MUFI	n/a	6Z
61	MSP-01			Fence posts	MUFI	n/a	6Z
*Found ineligible for NR, CR or Local designation through survey evaluation							

The project would require additional offsite improvements that would result in ground disturbing activities that have not been surveyed for cultural or tribal cultural resources because they would occur as mitigation for project-related traffic impacts, and as separate projects would require future supplemental environmental analysis.

Segments of roadway along Grant Line Road, Jackson Road, Sunrise Boulevard, and Zinfandel Drive would be widened to accommodate additional project-related traffic. Additionally, intersections within the traffic study area would be improved from two-way stops to either roundabouts or signalized controls. In some cases, lanes would be reconfigured to provide an additional turn lane. In the case of freeway capacity issues, an electronic traffic management system would be implemented which may result in future improvements to carrying capacity of parallel local facilities.

Implementation of traffic mitigation measures may result in environmental impacts because of construction activities and ground-disturbance, specifically including resource areas such as air quality, biological resources, cultural resources, and noise. Where mitigation and impacts are internal to the Plan Area, impacts are evaluated throughout the EIR. In the case of offsite impacts related to traffic improvements such as widening roads, installing signals and roundabouts, or reconfiguring lanes, additional environmental review would occur, and mitigation similar to that recommended for the project would likely be implemented to reduce impacts. All feasible mitigation would be required to be implemented consistent with state and federal requirements, as well as can be found in the County's General Plan, Grading Ordinance, Erosion and Sediment Control Plan, and any other relevant County regulation for the minimization of environmental impacts.

HISTORICAL RESOURCES

IMPACT: CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A HISTORIC RESOURCE

Based upon the conclusions of the studies discussed previously, a total of 23 cultural resources (archaeological and built environment resources) were identified adjacent to or within the Mather South Plan Area. The ICF Addendum Reports conclude that none of these resources meet the criteria for listing in the NRHP and/or the CRHR. There does not appear to be the potential for a historic district or a historic landscape for which these resources might be considered as contributing elements. Consequently, none of the 23 buildings, structures or objects are considered historic resources for the purposes of CEQA. Therefore, the Mather South Project would not result in any impacts to known historic resources; however, given the historic uses of the Plan Area, unknown historic resources may be uncovered during construction activities. This would be a potentially significant impact. With implementation of Mitigation Measure CR-1, the project would result in a ***less than significant impact with mitigation***.

MITIGATION MEASURE

CR-1. For any unexpected historic or cultural resources discovered during project construction, work shall be halted until a qualified archaeologist evaluates the resource encountered.

1. In the event of an inadvertent discovery of historic or cultural resources, all work must halt within a 200-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained at the Applicant's expense to evaluate the significance of the find. If it is determined due to the types of deposits discovered that a Native American monitor is required, the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites as established by the Native American Heritage Commission shall be followed, and the monitor shall be retained at the Applicant's expense.

    a. Work cannot continue within the 200-foot radius of the discovery site until the archaeologist and/or tribal monitor conducts sufficient research and data collection to determine that the resource is either 1) not cultural in origin; or 2) not potentially eligible for listing on the National Register of Historic Places or California Register of Historical Resources.

    b. If a potentially-eligible resource is encountered, then the archaeologist and/or tribal monitor, Office of Planning and Environmental Review staff, and project proponent shall arrange for either 1) total avoidance of the resource, if possible; or 2) test excavations or total data recovery as mitigation. The determination shall be formally documented in writing and submitted to the County Environmental Coordinator as verification

that the provisions of CEQA for managing unanticipated discoveries have been met.

2. Pursuant to Sections 5097.97 and 5097.98 of the State Public Resources Code, and Section 7050.5 of the State Health and Safety Code, if a human bone or bone of unknown origin is found during construction, all work is to stop and the County Coroner and Office of Planning and Environmental Review (PER) shall be immediately notified. If the remains are determined to be Native American, the coroner shall notify the Native American Heritage Commission within 24 hours, and the Native American Heritage Commission shall identify the person or persons it believes to be the most likely descendent from the deceased Native American. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposition of, with appropriate dignity, the human remains and any associated grave goods.

ARCHAEOLOGICAL RESOURCES

IMPACT: CAUSE SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A UNIQUE ARCHAEOLOGICAL RESOURCE

No archaeological resources were identified as a result of previous studies conducted; however, it is still possible that significant buried archaeological materials are present within the Mather South Plan Area. Disturbance or destruction of previously unknown resources may result from ground-disturbing construction activities. This would be a potentially significant impact. With implementation of Mitigation Measure CR-1 (above), environmental impacts to potentially significant cultural resources (including archaeological resources) would be ***less than significant with mitigation***.

MITIGATION MEASURE

Implement Mitigation Measure CR-1.

HUMAN REMAINS

IMPACT: DISTURB ANY HUMAN REMAINS, INCLUDING THOSE INTERRED OUTSIDE OF FORMAL CEMETERIES

There are no known human burial sites within the Mather South Plan Area; however, it is possible that buried human remains are present and have not been identified because of a lack of surficial evidence. It is possible that previously unknown human remains may be encountered during ground-disturbing construction activities associated with the project. This would be a potentially significant impact. Section 5097.94 of the Public Resources Code and Section 7050 of the California Health and Safety Code protect Native American burials, skeletal remains and grave goods, regardless of age and provide method and means for the appropriate handling of such remains. In the event that human remains are discovered during implementation of the Mather South

Project, strict adherence to mitigation as outlined in Mitigation Measure CR-1 (above) would reduce this impact to ***less than significant with mitigation***.

MITIGATION MEASURES

Implement Mitigation Measure CR-1.

TRIBAL CULTURAL RESOURCES

IMPACT: CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF A TRIBAL CULTURAL RESOURCE

To determine the possibility of impacts to tribal cultural resources, PER staff consulted with three separate tribal entities: The Ione Band of Miwok, the UAIC, and Wilton Rancheria. None of these tribes have indicated that tribal cultural resources are known within the Mather South Plan Area. Because no tribal cultural resources have been identified within the Plan Area to date, potential impacts would likely be less than significant. Nonetheless, the potential exists to uncover previously undiscovered tribal cultural resources during construction activities. Disturbance of these unknown resources would be a potentially significant impact. Implementation of Mitigation Measure CR-2 would reduce this impact to ***less than significant with mitigation***.

MITIGATION MEASURES

CR-2. If the lead agency determines that a project may cause a substantial adverse change to a tribal cultural resource, and measures are not otherwise identified in the consultation process provided in Section 21080.3.2 of the Public Resources Code, one of the following measures would be implemented to avoid and/or minimize the impact to tribal cultural resources:

1. Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

2. Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

    a. Protecting the cultural character and integrity of the resource.

    b. Protecting the traditional use of the resource.

    c. Protecting the confidentiality of the resource.

3. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

4. Protecting the resource.

9 ENERGY

INTRODUCTION

The Mather Field Project EIR (2016) evaluated the provision of electricity and gas service to the Mather South Plan Area at the plan-level and that analysis is hereby incorporated by reference in this document and summarized as appropriate below. This chapter was prepared pursuant to CEQA Guidelines Section 15126 and Appendix F of the CEQA guidelines, which require that EIRs include a discussion of the potential energy impacts of projects. The analysis considers whether the Mather South Project would result in inefficient, wasteful, and unnecessary consumption of energy.

During the NOP scoping process, no commenters raised concerns related to the energy. A copy of the NOP and comment letters received in response to the NOP are included in Appendix PD-2 of this Mather South Project Draft EIR.

ENVIRONMENTAL SETTING

PHYSICAL SETTING

ENERGY FACILITIES AND SERVICES IN THE PLAN AREA

Electric service in the Mather South Plan Area is provided by the Sacramento Municipal Utility District (SMUD), while natural gas services are provided by West Coast Gas Company, which is a regulated, full service, natural gas supplier and distribution utility. Natural gas facilities exist in the Plan Area along Douglas Road, Sunset Boulevard, and Kiefer Boulevard (southern plan boundary). There are existing electrical infrastructure facilities along Sunrise Boulevard, Zinfandel Drive, and Kiefer Boulevard. The site is located directly south of Jackson Road and north of four two SMUD 230 kilovolt (kV) transmission lines, and two Pacific Gas and Electric Company (PG&E) lines, that run through the proposed south-easterly portion of the West Jackson Highway Master Plan development area.

ENERGY TYPES AND SOURCES

California relies on a regional power system comprised of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Recent trends associated with energy use in California are discussed below.

Gasoline and diesel fuel sold in California for motor vehicles is refined in California to meet specific formulations required by the California Air Resources Board (CARB). Major petroleum refineries in California are concentrated in three counties: Contra Costa County in northern California, Kern County in central California, and Los Angeles County in southern California.

In 2014, approximately 35 percent of all natural gas consumed in the State was used to generate electricity. Residential land uses represented approximately 17 percent of California's natural gas consumption with the balance consumed by the industrial, resource extraction, and commercial sectors (EIA 2014). PG&E is the primary natural gas supplier in Sacramento County.

Power plants in California meet approximately 68 percent of the in-state electricity demand; hydroelectric power from the Pacific Northwest provides another 12 percent; and power plants in the southwestern U.S. provide another 20 percent (EIA 2014). The contribution of in-state and out-of-state power plants depends upon, among other factors, the precipitation that occurred in the previous year and the corresponding amount of hydroelectric power that is available. SMUD is the primary electricity supplier in Sacramento County.

As of July 2018, the California electricity system was powered by 29 percent renewables, including biomass, geothermal, small hydroelectric, solar, and wind (CEC 2018a). Details on California renewable energy policy is included below in the Regulatory Setting.

Alternative Fuels

A variety of alternative fuels are used to reduce demand for petroleum-based fuel. Conventional gasoline and diesel may be replaced (depending on the capability of the vehicle) with many transportation fuels, including biodiesel, electricity, ethanol, hydrogen, natural gas/methane, propane, and renewable diesel.

California has a growing number of alternative fuel vehicles through the joint efforts of California Energy Commission (CEC), CARB, local air districts, federal government, transit agencies, utilities, and other public and private entities. As of September 2016, California contained nearly 14,000 alternative fueling stations (AFDC 2017).

Commercial and Residential Energy Use in Sacramento County

SMUD purchases, generates, and distributes electric power to a 900-square mile services area in Sacramento County. Electricity purchased and produced by SMUD is generated from a variety of sources including hydro generation; cogeneration plants; advanced and renewable technologies such as wind, solar, and biomass/landfill gas power; and power purchased on the wholesale market. In 2016, non-residential customers in Sacramento County including the incorporated cities within the County, consumed 6,056 Gigawatt Hours (GWh) of electricity while residential customers consumed 4,795 GWh of electricity. In the same year, non-residential customers in Sacramento County consumed 104 million therms of natural gas and residential customers consumed 182 million therms of natural gas (CEC 2016).

Energy Use for Transportation

Transportation is the second largest energy consumer nationwide, accounting for 27 percent of the total national energy use (U.S. Department of Energy 2016). On-road vehicles are estimated to consume approximately 80 percent of California's transportation

energy demand, with cars, trucks, and buses accounting for nearly all of the on-road fuel consumption. Petroleum products (gasoline, diesel, jet fuel) account for almost 99 percent of the energy used in California by the transportation sector, with the rest provided by ethanol, natural gas, and electricity (Bureau of Transportation Statistics 2015).

Vehicle Miles Traveled and Gasoline Consumption

As noted in the Regulatory Setting of this section, several State mandates and efforts, such as Senate Bill (SB) 375, seek to reduce vehicle miles traveled (VMT) in California. Fuel consumption per capita in California decreased by nearly 11 percent from 2008 to 2011 (Bureau of Transportation Statistics 2015). Despite the progress in reducing per-capita VMT and per-capita fuel consumption, the continued projected increases in total fuel consumption and VMT can be attributed to the overall increase in population. In 2016, the daily VMT in unincorporated Sacramento County totaled 8,741,000, which accounts for 25 percent of the County's total daily VMT including state highways and incorporated cities within the County (Caltrans 2016). In 2016, the average fuel efficiency for a gasoline light duty automobile in Sacramento County was 27 miles per gallon. In Sacramento County, the average fuel efficiency for a gasoline light duty truck in Sacramento County was 23 miles per gallon (CARB 2018a).

Energy Use and Climate Change

Scientists and climatologists have produced evidence that the burning of fossil fuels by vehicles, power plants, industrial facilities, residences, and commercial facilities has led to an increase of greenhouse gases (GHG) in the earth's atmosphere and resulted in increases earth's temperature. For an analysis of GHG emissions and the project's impacts on climate change, refer to Chapter 7, "Greenhouse Gas Emissions and Climate Change."

Regulatory Setting

Federal

Energy Policy and Conservation Act, and CAFE Standards

The Energy Policy and Conservation Act of 1975 established nationwide fuel economy standards to conserve transportation fuels. Pursuant to this Act, the National Highway Traffic and Safety Administration, part of the U.S. Department of Transportation (DOT), is responsible for revising existing fuel economy standards and establishing new vehicle economy standards as part of the Corporate Average Fuel Economy (CAFE) program. Compliance with CAFE standards is determined based on each manufacturer's average fuel economy for the portion of their vehicles produced for sale. Under the program, DOT is authorized to assess penalties for noncompliance. Under the Energy Independence and Security Act of 2007 (described below), the CAFE standards were revised for the first time in 30 years.

Energy Policy Act of 1992

The Energy Policy Act of 1992 (EPAct) was passed to increase the use of clean energy and increase energy efficiency in the United States. The legislation covers a broad range of topics related to energy use including energy efficiency, alternative fuels, electric vehicles, radioactive waste, and energy conservation. The act provides tax incentives and marketing strategies for increase the use renewable energy technologies, establishes certain energy efficiency requirements for commercial buildings and establishes efficiency standards for commercial heating and air-conditioning equipment, electric motors, and lamps. EPAct also requires certain federal, state, and local government and private fleets to purchase a percentage of light-duty AFVs capable of running on alternative fuels each year.

Energy Policy Act of 2005

The Energy Policy Act of 2005 provides renewed and expanded tax credits for electricity generated by qualified energy sources, such as landfill gas; provides bond financing, tax incentives, grants, and loan guarantees for clean renewable energy and rural community electrification; and establishes a federal purchase requirement for renewable energy.

State

Warren-Alquist Act

The 1975 Warren-Alquist Act established the California Energy Resources Conservation and Development Commission, now known as CEC. The Act established state policy to reduce wasteful, uneconomical, and unnecessary uses of energy by employing a range of measures. The California Public Utilities Commission (CPUC) regulates privately-owned utilities in the energy, rail, telecommunications, and water fields.

Energy Action Plan

The first Energy Action Plan (EAP) emerged in 2003 from a crisis atmosphere in California's energy markets. The State's three major energy policy agencies (CEC, CPUC, and the Consumer Power and Conservation Financing Authority [established under deregulation and now defunct]) came together to develop one high-level, coherent approach to meeting California's electricity and natural gas needs. It was the first time that energy policy agencies formally collaborated to define a common vision and set of strategies to address California's future energy needs and emphasize the importance of the impacts of energy policy on the California environment.

In the October 2005 *Energy Action Plan II*, CEC and CPUC updated their energy policy vision by adding some important dimensions to the policy areas included in the original EAP, such as the emerging importance of climate change, transportation-related energy issues, and research and development activities. The CEC recently adopted an update to the EAP II in February 2008 that supplements the earlier EAPs and examines the State's ongoing actions in the context of global climate change.

State of California Energy Action Plan

CEC is responsible for preparing the State Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The current plan is the 1997 California Energy Plan. The plan calls for the State to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero-emission vehicles and addressing their infrastructure needs; and encouragement of urban design that reduces VMT and accommodates pedestrian and bicycle access.

Assembly Bill 2076: Reducing Dependence on Petroleum

Pursuant to Assembly Bill (AB) 2076 (Chapter 936, Statutes of 2000), CEC and CARB prepared and adopted a joint agency report in 2003, *Reducing California's Petroleum Dependence.* Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita VMT (CEC 2003). Further, in response to the CEC's 2003 and 2005 *Integrated Energy Policy Reports*, Governor Davis directed CEC to take the lead in developing a long-term plan to increase alternative fuel use.

Senate Bill 1078: California Renewables Portfolio Standard Program

SB 1078 (Chapter 516, Statutes of 2002) establishes a renewable portfolio standard (RPS) for electricity supply. The RPS requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 20 percent of their supply from renewable sources by 2017. This target date was moved forward by SB 1078 to require compliance by 2010. In addition, electricity providers subject to the RPS must increase their renewable share by at least one percent each year. The outcome of this legislation will impact regional transportation powered by electricity. As of 2018, the State has reported that 29 percent of electricity is sourced from certified renewable sources (see "Environmental Settings" section).

Senate Bill X1-2: California Renewable Energy Resources Act

SB X1-2 of 2011 requires all California utilities to generate 33 percent of their electricity from renewables by 2020. SB X1-2 sets a three-stage compliance period requiring all California utilities, including independently-owned utilities, energy service providers, and community choice aggregators, to generate 20 percent of their electricity from renewables by December 31, 2013; 25 percent by December 31, 2016; and 33 percent by December 31, 2020. SB X1-2 also requires the renewable electricity standard to be met increasingly with renewable energy that is supplied to the California grid from sources within, or directly proximate to, California. SB X1-2 mandates that renewables from these sources make up at least 50 percent of the total renewable energy for the 2011–2013 compliance period, at least 65 percent for the 2014-2016 compliance period, and at least 75 percent for 2016 and beyond.

Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) requires the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to be increased to 50 percent by December 31, 2030. This act also requires doubling of the energy efficiency savings in electricity and natural gas for retail customers through energy efficiency and conservation by December 31, 2030.

Assembly Bill 1007: State Alternative Fuels Plan

AB 1007 (Chapter 371, Statues of 2005) required CEC to prepare a state plan to increase the use of alternative fuels in California. CEC prepared the State Alternative Fuels Plan (SAF Plan) in partnership with CARB and in consultation with other state, federal, and local agencies. The SAF Plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes the costs to California and maximizes the economic benefits of in-state production. The SAF Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuel use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Executive Order S-06-06

Executive Order (EO) S-06-06, signed on April 25, 2006, establishes targets for the use and production of biofuels and biopower, and directs state agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The EO establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels within California by 2010, 40 percent by 2020, and 75 percent by 2050. The EO also calls for the State to meet a target for use of biomass electricity. The 2011 Bioenergy Action Plan identifies those barriers and recommends actions to address them so that the State can meet its clean energy, waste reduction, and climate protection goals. As of 2015, 3.2 percent of the total electricity system power in California was derived from biomass.

California Green Building Standards

California Code of Regulations, Title 24, Part 6, is California's Energy Efficiency Standards for Residential and Non-Residential Buildings. Title 24 was established by CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and non-residential buildings. In May 2018, the CEC adopted proposed changes for the 2019 Building Energy Efficiency Standards as part of the rulemaking process and, if adopted, would take effect on January 1, 2020. The proposed new standards are not officially adopted yet and require final approval from the California Building Standards Commissions; however, they are not anticipated to change substantially from what has been proposed thus far. The standards are designed to move the State closer to its zero net energy goals for new residential development. It does so by requiring all new residences to install enough renewable energy to offset all

the site electricity needs of each residential unit (CCR, Title 24, Part 6, section 150.1(c)14). CEC estimates that the combination of mandatory on-site renewable energy and prescriptively-required energy efficiency features will result in new residential construction that uses 53 percent less energy than the 2016 standards. Nonresidential buildings are anticipated to reduce energy consumption by 30 percent compared to the 2016 standards primarily through prescriptive requirements for high-efficacy lighting (CEC 2018b). The building efficiency standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary in response to local climatologic, geologic, or topographic conditions, provided that these standards are demonstrated to be cost effective and exceed the energy performance required by Title 24, Part 6.

Assembly Bill 32, Climate Change Scoping Plan and Update

In December 2008, CARB adopted its Climate Change Scoping Plan, which contains the main strategies California will implement to achieve reduction of approximately 118 million metric tons (MMT) of carbon dioxide-equivalent (CO_2e) emissions, or approximately 21.7 percent from the State's projected 2020 emission level of 545 MMT of CO_2e under a business-as-usual scenario (this is a reduction of 47 MMT CO_2e, or almost 10 percent, from 2008 emissions). In 2016, statewide GHG emissions from GHG emitting activities were 429 $MMTCO_2e$. As a result, California has reached the target established in Assembly Bill (AB) 32 to reduce statewide GHG emissions to 1990 levels (431 $MMTCO_2e$) by 2020 and has done so four years ahead of the target year.

On December 14, 2017, CARB approved the *2030 Climate Change Scoping Plan*, which lays out the framework for achieving the 2030 reductions as established in EO B-30-15 and SB 32 and AB 197 (discussed below). The Scoping Plan Update identifies reductions to be made by each sector to achieve a 40 percent reduction of 1990 levels of GHGs by 2030. The measures identified in the 2017 Scoping Plan Update will have the co-benefit of reducing California's dependency of fossil fuels and making land use development and transportation systems more energy efficient. More details about the statewide GHG reduction goals and Scoping Plan measures are provided in the regulatory setting of Chapter 7, "Greenhouse Gas Emissions and Climate Change."

Senate Bill 375

Senate Bill 375 (SB 375), signed by the Governor in September 2008, aligns regional transportation planning efforts, regional GHG emission reduction targets, and land use and housing allocation. SB 375 requires metropolitan planning organizations (MPOs) to adopt a Sustainable Communities Strategy or Alternative Planning Strategy, showing prescribed land use allocation in each MPO's Regional Transportation Plan. CARB, in consultation with the MPOs, is to provide each affected region with reduction targets for GHGs emitted by passenger cars and light trucks in their respective regions for 2020 and 2035. Implementation of SB 375 will have the co-benefit of reducing California's dependency of fossil fuels and making land use development and transportation systems more energy efficient.

In March of 2018, CARB approved the final staff recommendations for updated MPO reduction targets. The final recommended reduction targets established for SACOG are to achieve a 7 percent per-capita reduction compared to 2012 emissions from cars and trucks by 2020 and a 19 percent per-capita reduction by 2035 (CARB 2018b).

Executive Order B-30-15

Executive Order B-30-15 establishes a California GHG reduction target of 40 percent below 1990 levels by 2030. The executive order aligns California's GHG reduction targets with those of leading international governments such as the 28-nation European Union which adopted the same target in October 2014. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by 2020, as established in the California Global Warming Solutions Act of 2006 (AB 32, discussed above). California's new emission reduction target of 40 percent below 1990 levels by 2030 will make it possible to reach the ultimate goal of reducing emissions 80 percent below 1990 levels by 2050. Reductions in GHG emissions can also result in reduction in energy consumption from increasing energy efficiency (building and vehicles) and replacement of fossil fuel sources with renewable energy sources.

Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the State's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050. Achievement of these goals will have the co-benefit of reducing California's dependency of fossil fuels and making land use development and transportation systems more energy efficient.

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of zero-emission vehicles, into a single package of standards for vehicle model years 2017 through 2025. The new rules strengthen the GHG standard for 2017 models and beyond. This will be achieved through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's zero-emission vehicle regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the state. The program will have significant energy demand implications as battery, fuel cell, and/or plug-in hybrid electric vehicle sales increase overtime, creating new demand for electricity services both in residential and commercial buildings (e.g. charging stations) as well as demand for new EV and hydrogen fuel cell charging

stations. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 34 percent fewer global warming gases and 75 percent fewer smog-forming emissions than the statewide fleet in 2016 (CARB 2016).

LOCAL

SACRAMENTO COUNTY GENERAL PLAN

The Sacramento County General Plan contains the following policies and implementation measures which pertain to energy use.

EN-1. Develop standards which would reduce the energy required to maintain interior spaces in the comfort zone, including such standards as tree planting and proper orientation of dwellings.

EN-2. Inform the public of the need and of ways to conserve energy in the home.

EN-5. Reduce travel distances and reliance on the automobile and facilitate increased use of public transit through appropriate land use plans and regulations.

EN-6. Actively support the efforts of the Regional Transit District to expand and upgrade service and attract an increasing percentage of travel.

EN-7. Expand existing programs and develop new programs which promote and encourage vanpooling and carpooling.

EN-8. Promote and encourage increased percentages of more efficient cars.

EN-9. Inform the public of the need to reduce auto travel and encourage the use of public transit and other energy efficient modes of travel.

EN-10. Continue implementation of the Bikeways Master Plan and develop standards for neighborhood bikeways and pedestrian-ways, incorporating them into Neighborhood Planning Standards.

EN-11. Promote the location within the Sacramento area of those industries which are labor intensive, utilize solar energy systems, and are consistent with other policies in terms of environmental protection.

EN-12. Encourage industry located or locating in the Sacramento area to participate in cogeneration of power.

EN-14. Develop or revise design standards relating to building solar orientation, landscaping, impervious surfaces, and parking space requirements to conserve energy.

EN-16. Promote the use of passive and active solar systems in new and existing residential, commercial, and institutional buildings as well as the installation of solar swimming pool heaters and solar water and space heating systems.

EN-17. Support the development and improvement of solar space cooling systems.

EN-18. Develop and implement standards for the protection of the solar rights of property owners.

EN-19. Support the development and use of renewable sources of energy, including but not limited to biomass, solar, wind, and geothermal.

Cordova Community Plan

The Cordova Community Plan does not contain specific policies related to energy consumption.

Mather Field Specific Plan and Special Planning Area

There are no policies within the Mather Field Specific Plan or Special Planning Area that pertain to energy.

Significance Criteria

The following significance criteria are based on CEQA Guidelines Appendix F (energy), under which implementation of the project would have a potentially significant adverse impact if the project would:

1. Result in wasteful, inefficient, or unnecessary consumption of energy, during project construction or operation, as evidenced by a failure to decrease overall per-capita energy consumption or decrease reliance on fossil fuels such as coal, natural gas, and oil;

2. Fail to incorporate feasible renewable energy or energy efficiency measures into building design, equipment use, transportation, or other project features, or otherwise fail to increase reliance on renewable energy sources; or

3. Exceed the available capacities of energy supplies that require the construction of facilities.

Methodology

Construction

Development of the Mather South Project is anticipated to take place in four phases over a 14-year period from 2019 through 2032. Energy consumption associated with

construction of the project includes gasoline and diesel fuel use for construction worker commute trips, vendor haul trips, and off-road diesel equipment.

Construction-related energy consumption anticipated with the development of various land uses as part of the project was estimated, including the gallons of gasoline, and gallons of diesel fuel. Energy consumption estimates are included in Appendix EN-1. Construction-related energy consumption levels associated with project implementation were calculated using the California Emissions Estimator Model (CalEEMod) version 2016.3.2 computer program (CAPCOA 2017) and were estimated using project specific construction activity data for the phased development of the various land uses included in the project. Where specific information about construction activity was not known, CalEEMod default values based on the project's land uses and location of the project site were used. Transportation fuel consumption associated with construction worker commutes for all phases of construction activity were estimated using CARB's EMFAC2017 (i.e., average fuel use by vehicle class for passenger vehicles). Off-road fuel consumption was estimated using CalEEMod default off-road equipment used for each phase of construction and fuel use rates for this equipment from the South Coast Air Quality Management District CEQA Air Quality Handbook (SCAQMD 1993).

OPERATIONS

Energy use related to the Mather South Project would include electricity and natural gas use in new buildings and fuel consumptions related to increased vehicle activity under the project. Building energy would include energy consumed for space heating and cooling, appliances, facility and equipment operation, lighting, and other miscellaneous plug loads at residential units, the elementary school, the environmental education campus, the research and development campus and retail land uses. Transportation-related energy consumption includes the use of fuels and electricity to power cars, trucks, and public transportation. Energy would also be consumed by equipment and vehicles used during project construction and routine maintenance activities.

Energy use associated with building operations for the land uses included in the project was estimated using CalEEMod v. 2016.3.2 with appropriate adjustments made to account for the 2019 Building Energy Efficiency Standards under Title 24. The 2019 Title 24 Building Energy Efficiency Standards require single-family housing to generate their electricity demand from renewable sources such as solar photovoltaics. Emissions modeling accounted for solar generation based on the 2019 Title 24 standards. Assumptions and details regarding the estimated solar generation can be found in Appendix AQ-GHG-1. Table EN-2 below summarizes the levels of energy consumption associated with the operation of new buildings and facilities that would be built as part of project implementation. Considering the 14-year buildout of the project, this approach is conservative in that full project buildout is unlikely to occur under the 2019 Building Energy Efficiency Standards. As the Title 24 Building Energy Efficiency Standards continue to be updated on a triennial basis, project development which is to occur under future Building Energy Efficiency Standards is anticipated to result in further reductions in building energy use associated with the project.

Energy use associated with transportation activities as part of the project were estimated based on the traffic study which was conducted for the project using the traffic study annual VMT estimate. Transportation fuel-use associated with these activities were calculated by applying average fuel usage rates per vehicle mile to the total annual VMT estimates associated with the project (see Appendix TR-1, "Transportation Impact Report" for details on the assumptions behind the VMT modeling). CARB's EMFAC2017 model includes average fuel usage rates by vehicle class, fuel type (e.g., diesel, gasoline, natural gas, and electricity), speed bin, calendar year, and county. CARB's EMFAC2017 average fuel usage rates by vehicle class for Sacramento County were used in this analysis. DKS (project traffic consultant) provided daily VMT, by speed bin and vehicle class, attributable to project implementation.

The Mather South Community Master Plan (Appendix PD-1) contains multiple policies and design guidelines that would result in the conservation of energy. These policies were considered qualitatively as part of the analysis of the project's energy use. Because these policies are not necessarily required as part of final project development, they have not been included in the quantitative analysis of building energy use as part of this EIR.

Issues Not Discussed Further

All issues have been evaluated below.

Impacts and Analysis

2016 Mather Field Project EIR Determination

The Mather Field Project EIR evaluated impacts related to energy infrastructure from implementation of the Mather Field Project which consisted of a realignment of Zinfandel Drive and trunk extension, creation of the Mather Preserve and the establishment of an Urban Development Area designation for the Mather South Plan Area.

The EIR concluded that less-than-significant impacts related to the provision of electrical service with implementation of General Plan polices. The discussion of impacts can be found on pages 11-34 and 11-35 of the Mather Field Project EIR and is hereby incorporated by reference.

Mather South Project Impacts Determination

Impact: Result in wasteful, inefficient, or unnecessary consumption of energy

Appendix F of the State CEQA Guidelines requires the consideration of the energy implications of a project. CEQA requires mitigation measures to reduce "wasteful, inefficient and unnecessary" energy usage (Public Resources Code Section 21100, subdivision (b)(3)). Neither the law nor the State CEQA Guidelines establish criteria that

define wasteful, inefficient, or unnecessary use. Compliance with California Code of Regulations Title 24 Energy Efficiency Standards would result in the design and development of new buildings which would increase energy-efficiency compared to buildings built previously under past Title 24 Energy Efficiency Standards. However, these increases in energy efficiency and general compliance with the building code does not address all energy demand during construction and operation of a project. For instance, energy use associated with new commute trips, the transportation of goods to commercial land uses, or fuel use during project construction are not under the purview of the State's building code. The additional anticipated energy use by use type is discussed below.

CONSTRUCTION ENERGY USE

As discussed in Chapter 1 Project Description, project implementation would result in the development of new land uses including low- to high-density residential, commercial, public facilities, a research and development campus, an environmental education campus, parks, recreation, and open space areas. As shown in Table EN-1, construction activity associated with the development of these land uses would result in energy use during each phase of project construction. The construction of buildings, facilities and infrastructure associated with these land uses would result in fuel use from off-road construction equipment, fuel use for the transport of construction-related goods, and from construction workers commuting to and from the project site. Table EN-1 summarizes the levels of energy consumption from the construction of all land uses included for each phases of the project. Project construction would take place over a 14-year period and would be organized into four phases, with the final construction phase ending in 2032. For all phases of project construction, an estimated 843,129 gallons of gasoline and 1,250,649 gallons of diesel fuel would be needed. Over the project's 14-year buildout period, the average annual fuel use for construction would be 52,696 gallons of gasoline and 78,166 gallons of diesel. Energy use resulting from construction worker commute trips and construction equipment activity would be typical of that associated with construction of the new land uses included in the project.

Table EN-1: Construction Energy Use for Mather South Project

Construction Phase	Diesel Off-road Equipment (gallons)	Gasoline On-road (gallons)	Diesel On-road (gallons)	Diesel Total (gallons)
1	130,279	264,156	260,575	390,854
2	97,478	119,643	103,755	201,233
3	95,607	243,151	232,638	328,245
4	127,880	216,179	202,437	330,317
TOTAL	451,243	843,129	799,405	1,250,649
Source: Calculations by Ascent Environmental in 2018				

OPERATIONAL BUILDING ENERGY AND STATIONARY SOURCES

Energy demand associated with development of the Mather South Project would include natural gas and electricity for use in appliances (e.g., water heating, building heating and cooling, clothes washers, dishwashers). Electricity would be used for lighting in buildings as well as for street and public lighting. Energy would also be used in the form of fuels for use in stationary equipment (e.g., generators, landscaping equipment). Transportation-related energy consumption would include the use of fuels and electricity to power cars and trucks. This analysis estimates the energy use associated with the project as proposed before any mitigation measures would be applied to the project that would reduce the projects overall energy use.

All buildings to be developed as part of project implementation would be required to comply with the Title 24 Building Energy Efficiency Standards. As the project is developed through 2032, the Title 24 Building Energy Efficiency Standards are anticipated to be updated with increasingly stringent energy efficiency requirements. This would result in increased building energy efficiency overtime as buildings continue to be developed as part of the project. Although, buildings to be developed as part of project would be subject Title 24 Building Energy Efficiency Standards, project implementation would still result in an increase in overall energy use. Table EN-2 summarizes the levels of energy consumption associated with the operation of land uses that would be built. For all project land uses anticipated to result in energy consumption, an estimated 34,639 megawatt-hours per year of electricity and 51,991 million British thermal units per year of natural gas would be consumed. Operational energy use is anticipated to be typical of the residential, commercial, educational, and light industrial land uses included in the project.

Table EN-2: Operational Energy Use for Mather South Project

New Land Uses	Energy Use	Units
Environmental Education Campus		
Electricity	4,921	MWh/year
Natural Gas	8,596	MMBtu/year
Research & Development Campus		
Electricity	3,897	MWh/year
Natural Gas	4,086	MMBtu/year
Commercial (Retail and Community Center)		
Electricity	2,172	MWh/year
Natural Gas	1,185	MMBtu/year
Public Facilities		
Electricity	841	MWh/year
Natural Gas	1,364	MMBtu/year

New Land Uses	Energy Use	Units
Residential		
Electricity	22,809	MWh/year
Natural Gas	38,706	MMBtu/year
Total		
Electricity	34,639	MWh/year
Natural Gas	51,991	MMBtu/year
Notes: MWh/year = megawatt-hours per year; MMBtu/year = million British thermal units per year. Source: Calculations by Ascent Environmental in 2019		

Chapter 4.5, Sustainability and Resource Management, in the Mather South Community Master Plan includes various policies regarding building energy conservation which would serve to reduce energy use. Policy 4.5-14 encourages the incorporation of photovoltaic solar energy systems for multi-family, commercial/ industrial, and institutional uses in the project area. Policy 4.5-13 encourages the use green building design standards to reduce energy use, promotion of building designs which utilize heating and cooling, and encourages the inclusion of landscaping features such as tree canopies to help reduce building energy use. These policies would help to reduce overall building energy demand and reduce the project's overall energy use.

Chapter 6, Design Guidelines, in the Mather South Community Master Plan includes several guidelines which would serve to reduce building energy use in building to be developed as part of project implementation. Specifically, guideline DG 6-10 would encourage the use of the Leadership in Energy and Environmental Design (LEED) Green Building Rating System for new buildings to be developed as part of project implementation.

In addition to policies included in the Mather South Community Master Plan, the Mather South Project includes regulatory adjustments (i.e., 2019 Title 24 Building Energy Efficiency Standards) which increase energy efficiency for buildings and facilities to be developed as part of the project. Additionally, given the long buildout period for the Mather South Project, future development projects would be subject to updates to the State's Title 24 Building Energy Efficiency Standards.

OPERATIONAL TRANSPORTATION ENERGY USE

Project implementation would involve the development of new land uses over the buildout period of the project with project construction ending in 2032. Development of these new land uses would result in new vehicle trips, discussed in detail in Chapter 17 Traffic and Circulation. New vehicle trips associated with the project would result in energy use in the form of gasoline, diesel, compressed natural gas (CNG), and electricity. As shown in Table EN-3 below, project implementation is estimated to result in the annual consumption 1,836,388 gallons of gasoline, 397,563 gallons of diesel, 33,968 diesel equivalent gallons of natural gas, and 8,124 megawatt hours per year of electricity.

The Air Quality Mitigation Plan (AQMP), which has been developed as part of mitigation for this project, includes a series of mitigation measures which would result in increased energy efficiency for both transportation and building operations energy use as part of the project. Transportation energy considerations include pedestrian amenities and neighborhood design features which promotes walking as the primary mode for trips. Mitigation also includes the implementation of a Neighborhood Electric Vehicle (NEV) Network which would reduce the use of fossil fuel-based transportation modes. The Mather South Community Master Plan includes policies which reduce energy use in buildings and facilities as part of the project as well as provide policies for reductions in transportation energy use.

Table EN-3: Annual Operational Transportation Energy Use for the Mather South Project

Vehicle Type	Gasoline (gal/year)	Diesel (gal/year)	Natural Gas (DEG/year)	Electricity (MWh/year)
Passenger Vehicles	1,438,669	9,762	N/A	8,124
Trucks	383,353	375,932	8,805	N/A
Buses	14,367	11,869	25,163	N/A
Total	1,836,388	397,563	33,968	8,124

Notes: gal/year = gallons per year, DEG/year = diesel equivalent gallons per year, MWh/year = megawatt hours per year
Source: Calculations by Ascent Environmental in 2018

Chapter 4.4 of the Mather South Community Master Plan includes a Transportation Plan (See Appendix PD-1) including various policies which serve to reduce automobile use as the primary mode of transportation by promoting community design features which promote walking, biking, and public transit use as primary modes of transportation. Increased use of active transportation modes, including biking and walking as well as increased public transit, would result in reductions in VMT and subsequent energy use as part of project development. These include providing streetscape characteristics which promote active transportation modes, providing traffic calming measures to reduce vehicle speeds and discourage vehicle use, and providing adequate pedestrian and bicycle facilities throughout the project area. The Transportation Plan also includes policies for the implementation of an NEV Network (Policies 4.4-9 through 4.4-11) which would encourage the use of EVs within the neighborhood and reduce the use of fossil fuel-based transportation modes.

Energy efficiency policies included in the Mather South Community Master Plan and inclusions of the Title 24 Building Energy Efficiency Standards, which are required as part of project development, would ensure that project implementation would not result in the wasteful or inefficient use of energy. Energy use would be required during all phases of project construction. Project construction activity would result in gasoline consumption from construction worker commute trips, diesel fuel use from on-road diesel vehicles for vendor trips and off-road diesel construction equipment used in the construction of buildings, facilities and infrastructure. Operational activity associated with the project's land uses would generate new vehicles trips resulting in the

consumption of gasoline, diesel fuel, natural gas, and electricity. Buildings and facilities as part of the project's various land uses would result in the consumption of electricity from lighting and appliances as well as natural gas for water and space heating. This analysis estimates the energy use associated with the project as proposed with all design features but does not include reductions from proposed mitigation measures. As discussed above, the project would include design features included in the Mather South Project that would increase energy efficiency in the buildings and facilities associated with the project as well as increase the project's renewable energy use. The project would also include design features to reduce the project's anticipated annual VMT and, therefore, reduce transportation-related energy demand. Therefore, this impact would be **less than significant**.

MITIGATION MEASURES

No mitigation measures are required.

Although project implementation would not result in the wasteful, inefficient or unnecessary use of energy, it should be noted that with implementation of Mitigation Measures AQ-1, AQ-2 and CC-2 which are included as part of this EIR, the project would result in a further reduction of energy use associated with project construction and operational activities as well as increasing the project's use renewable energy. Mitigation Measure AQ-1 includes the implementation SMAQMD's Enhanced Exhaust Control Practices during project construction which are intended to reduce diesel PM and NO_X emissions. These practices would also result in a reduction in energy use associated with construction activity through the use of more fuel-efficient off-road construction equipment. Mitigation Measure AQ-2 includes the implementation of an Air Quality Mitigation Plan which includes incorporation of traffic calming measures and a NEV network into the project design. The Air Quality Mitigation Plan is intended to reduce criteria air pollutant emissions during operational activities as part of the project but would also result in reductions in energy use through reductions in project related VMT. Mitigation Measure CC-2 includes a series of strategies and design features to be included in the project to reduce greenhouse gas emissions and would also result in reductions in energy use and increased use of renewable energy sources. These strategies include installation of Electric Vehicle Service Equipment in both residential and nonresidential land uses as part of the project, water conservation design improvements, requirements for the use of Energy Star®-certified appliances in new development, requirements for the installation high efficiency lighting, and requirements for all space and water heating to be solar-powered or electric-powered, as feasible.

IMPACT: EXCEED THE AVAILABLE CAPACITIES OF ENERGY SUPPLIES THAT REQUIRE THE CONSTRUCTION OF FACILITIES.

Implementation of the Mather South Project would result in the development of new land uses (e.g., residential, commercial, educational) within the Plan Area which would result in new energy demand for both electricity and natural gas. As discussed in section 5.9.2 of the Mather South Community Master Plan, West Coast Gas would provide natural gas service within the project area through existing gas line facilities that are provided along Douglas Road, Sunset Boulevard, and Kiefer Boulevard (southern plan boundary).

Currently, there is no natural gas infrastructure serving the Mather South Plan Area. However, the approved Mather Field Project (PLNP2013-00044) includes the Zinfandel Drive and Trunk Sewer Extension which would be located adjacent to Zinfandel Drive. This roadway and trunk extension would extend to just south of the Mather Golf Course, which is the northwestern corner of the Plan Area (Plate PU-1) and anticipated to be complete in 2020. The development of the sewer line extension would also include a natural gas pipeline to service the Plan Area (Williams, pers. comm. 2018). Therefore, the natural gas infrastructure for Mather South Project has been considered in the planning of the project as part of the Zinfandel Drive and Trunk Sewer Extension Considering and would not exceed the available capacity for energy supplies.

With regard to electricity serving the Plan Area, new infrastructure and facilities would be required to service the project and has been considered as part of the planning. The project would require one new distribution substation which is proposed to be located in one of two locations within the project site. The substation would receive electricity from the Jackson Bulk Substation along a 69 kV overhead sub-transmission line that runs along the east side of Zinfandel Drive, or alternatively, along the east side of the Regional Bike Trail on the west side of the Folsom South Canal. The project would also include the installation of new subtransmission (69 kV) electrical lines along Douglas Road, Zinfandel Drive, and Kiefer Boulevard. The new substation and sub-transmission lines would require land easements to service the project. SMUD, in coordination with Sacramento County, has provided specific design considerations for the new electrical infrastructure and facilities required to service the project. For the substation, these considerations include parcel size requirements, SMUD's landscaping standards, setback and easement requirements, preferred land use locations (commercial or industrial), and soil and terrain considerations. For the substation, these considerations include setback and easement requirements. As discussed in Chapter 1 Project Description, the new electrical substation and new subtransmission lines have been integrated into the project site plans. The lead agency would work closely with SMUD during the development of the various land uses associated with the project to plan and develop appropriate electricity infrastructure to accommodate new land uses.

Project implementation would result in demand for new natural gas infrastructure along Zinfandel Road and would be installed during the Zinfandel Drive and Trunk Sewer Extension construction process as part of the Mather Field Project. Project implementation would also result in demand for new electricity infrastructure to service the project including a new substation and additional subtransmission (69kV) electrical lines along roadways adjacent to the project site. Development of electrical infrastructure supporting the project is anticipated to occur consistent with the phasing of project implementation with completion occurring in 2032. Given the size and location of the Mather South Project, the project would result in new energy demand which would exceed the existing energy needs associated with the currently undeveloped Plan Area. However, as discussed above, the planning and development of energy infrastructure to support project implementation has been integrated into the project planning process and integrated to the project site plans. Therefore, this impact would be **less than significant**.

10 GEOLOGY, SOILS, AND PALEONTOLOGICAL RESOURCES

INTRODUCTION

The Mather Field Project EIR (2016) evaluated the Mather South Plan Area at the plan-level and that analysis is hereby incorporated by reference and summarized below where appropriate. This chapter describes the regulatory and environmental setting for geology, soils, and paleontological resources in the Plan Area, identifies and analyzes impacts related to these resources from implementation of the Mather South Project at a project-level, and if necessary, recommends mitigation measures to reduce or eliminate significant impacts.

During the NOP scoping process, no commenters raised concerns related to geology, soils, or paleontological resources. A copy of the NOP and comment letters received in response to the NOP are included in Appendix PD-2 of this Mather South Project Draft EIR.

ENVIRONMENTAL SETTING

REGIONAL GEOLOGY

The present-day landscape of Sacramento County has been shaped over time by the ongoing processes of erosion and deposition. Material eroded from the ancestral Sierra Nevada, formed over 100 million years ago, was deposited onto the Sacramento Valley floor. Approximately 10 to 15 million years ago tectonic uplifts altered the geomorphology of the Sierra Nevada. Glaciation, volcanism, and erosion followed the uplifting, adding layers of sediment to the valley floor. Under the present geologic conditions, the alteration of the local geomorphology continues through stream erosion of the valley sediments and subsequent deposition in adjacent floodplains.

Sacramento County is situated in portions of two geomorphic provinces, primarily the Great Valley Province. A small area in the northeastern part of the County is in the Sierra Nevada province. The Great Valley province is further divided into four geomorphic subunits, including the Delta, the River Floodplain, the Alluvial Plain, and the Low Foothills. The Mather South Plan Area is located within the Alluvial Plain geomorphic subunit. The Alluvial Plain subunit is an extensive area of former floodplain that has been highly dissected by subsequent stream erosion. This geomorphic subunit is comprised of older, Quaternary deposits. This area is underlain by soil which is characterized by layers of hardpan or dense, impervious clay.

GEOLOGIC HAZARDS

SEISMIC HAZARDS

No known active faults (those that have experienced movement in the last 11,000 years) lie within or near the Mather South Plan Area (Plate GS-1). The nearest known active faults are located more than 40 miles west of the site in the San Francisco Bay Area and near Auburn to the northeast. Table GS-1 summarizes the distances to mapped, active regional faults that are shown on the California Geological Survey (CGS) 2010 Fault Activity Map.

Table GS-1: Approximate Distances to Regional Active Faults

Fault	Distance (miles)	MCE Magnitude[1]
Dunnigan Hills	41	6.50
https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx	https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx	https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx
Clayton/Marsh Creek	56	No data
Concord	58	6.50
West Napa	60	6.50
Cleveland Hill	60	6.50

[1] Estimated Maximum Credible Earthquake Magnitude, Mw

Source: ENGEO 2012

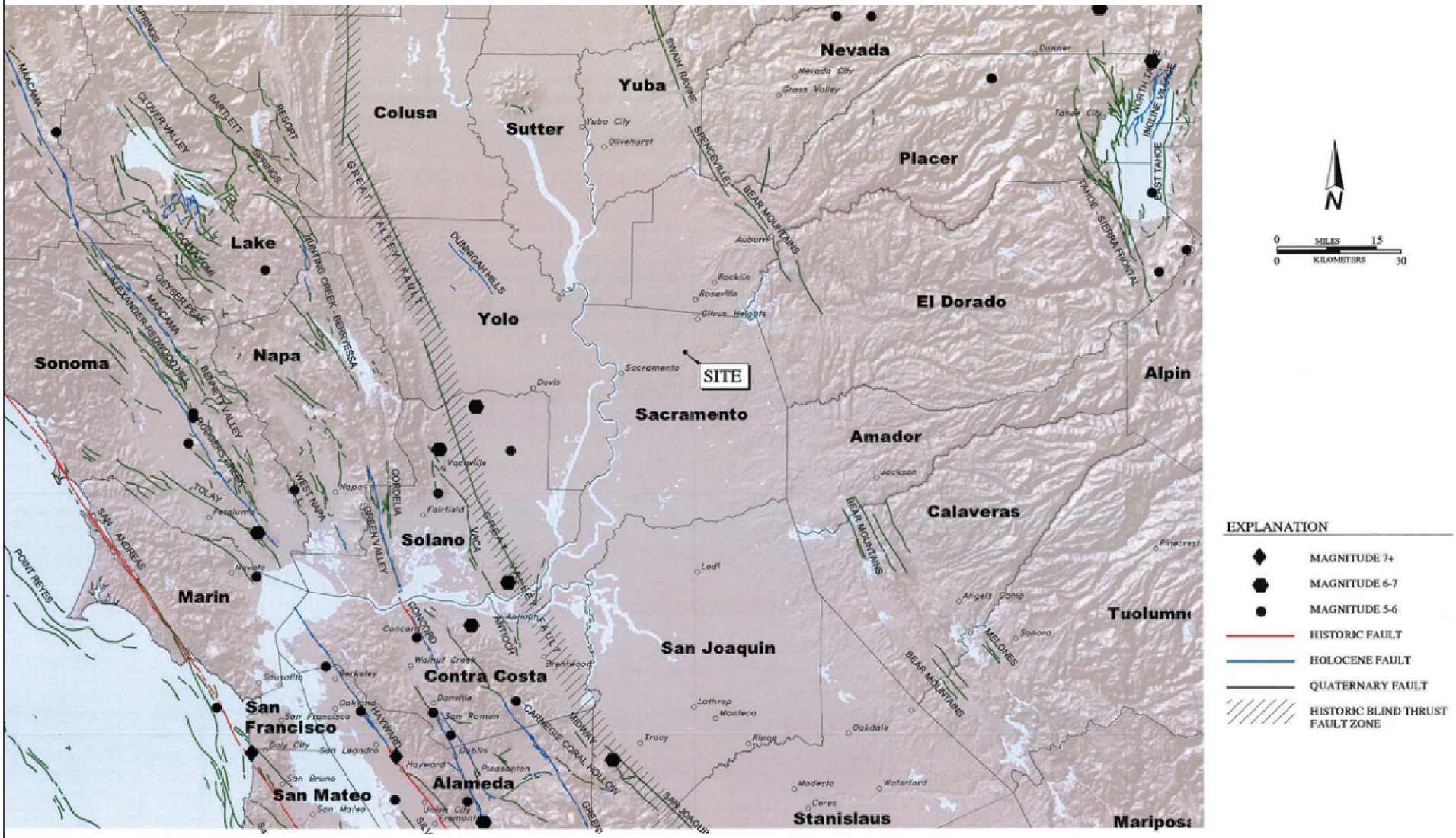
CGS has prepared a map of the state which shows the earthquake shaking potential of areas throughout California based primarily on an area's distance from known active faults. The map shows the east and central portions of Sacramento County in a relatively low intensity groundshaking zone, while the westernmost portion of the county is in a relatively moderate groundshaking zone (see Plates GS-1: Regional Faulting and Seismicity and GS-2: Earthquake Shaking Potential for California).

The county is in an area which is noted to have some of the lowest groundshaking potential in the State.

LIQUEFACTION

Liquefaction is a process whereby the strength and stiffness of a soil is reduced by earthquake shaking or rapid cyclic loading. Liquefaction occurs in saturated, typically cohesionless soils. Earthquake shaking can cause the pore water pressure to increase to a point where the strength of the soil decreases and the ability of a soil deposit to support foundations for buildings and bridges are significantly reduced.

The downtown and Delta regions of Sacramento County have the potential to exhibit liquefaction. However, the Mather South Plan Area is located within the Alluvial Plain of the county, which as described above is not generally prone to liquefaction potential. In addition, the Plan Area is located in an area that is generally not subject to strong groundshaking.



Source: County of Sacramento

X15010101 08 025

Plate GS-1: Regional Faulting and Seismicity

ASCENT ENVIRONMENTAL

SOILS AND SOIL HAZARDS

SOIL TYPES

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey, the Mather South Plan Area is underlain by five specific soil units (NRCS 2017). A brief description, as presented in the *Soil Survey of Sacramento County, California* (NRCS 1993) of each soil unit present within the Plan Area is provided below, and a soil map is shown on Plate GS-3. Characteristics of the soil types are also summarized in Table GS-2.

Table GS-2: Soil Characteristics in the Plan Area

Soil Type	Water Erosion Potential	Shrink-Swell Potential
191: Red Bluff Loam, 0 to 2 Percent Slopes	Slight	Low to Moderate
192: Red Bluff Loam, 2 to 5 Percent Slopes	Slight to Moderate	Low to Moderate
193: Red Bluff-Redding Complex, 0 to 5 Percent Slopes	Slight	Low to High
195: Red Bluff-Xerarents complex, 0 to 2 Percent Slopes	Slight	Low to Moderate
198: Redding Gravelly Loam, 0 to 8 Percent Slopes	Slight to Moderate	Low to High
Source: NRCS 1993		

191: RED BLUFF LOAM, 0 TO 2 PERCENT SLOPES

This unit is very deep and well drained and is located on intermediate terraces. This soil type is located in two small areas at the project boundary of the northwestern and northcentral portion of the Plan Area. Runoff is slow, permeability is moderately slow, and available water capacity is high. This soil type covers approximately 1.7 percent of the Plan Area and can be classified as Prime Soil when irrigated.

192: RED BLUFF LOAM, 2 TO 5 PERCENT SLOPES

This unit is very deep and well drained and is located on high terraces. This soil type is present within a small area of the southern portion of the Plan Area, centrally located between two other soil types found within the Plan Area. Runoff is slow or medium, permeability is moderately slow, and the available water capacity is high. This soil type covers approximately 2.2 percent of the Plan Area and can be classified as Prime Soil when irrigated.

193: RED BLUFF-REDDING COMPLEX, 0 TO 5 PERCENT SLOPES

This unit contains approximately 45 percent Red Bluff soil and 40 percent Redding soil. The unit is located on high terraces. This soil type is present primarily in the southern portion of the Plan Area, although it is also located in the northwest and central eastern portion of the Plan Area. Red Bluff soil is very deep and well drained, with slow runoff, moderately slow permeability, and high available water capacity. According to the soil survey, this unit type may provide wetland functions and values, which should be considered when plans are made for the enhancement of wildlife habitat or land use conversion. This soil type covers approximately 34.3 percent of the Plan Area.

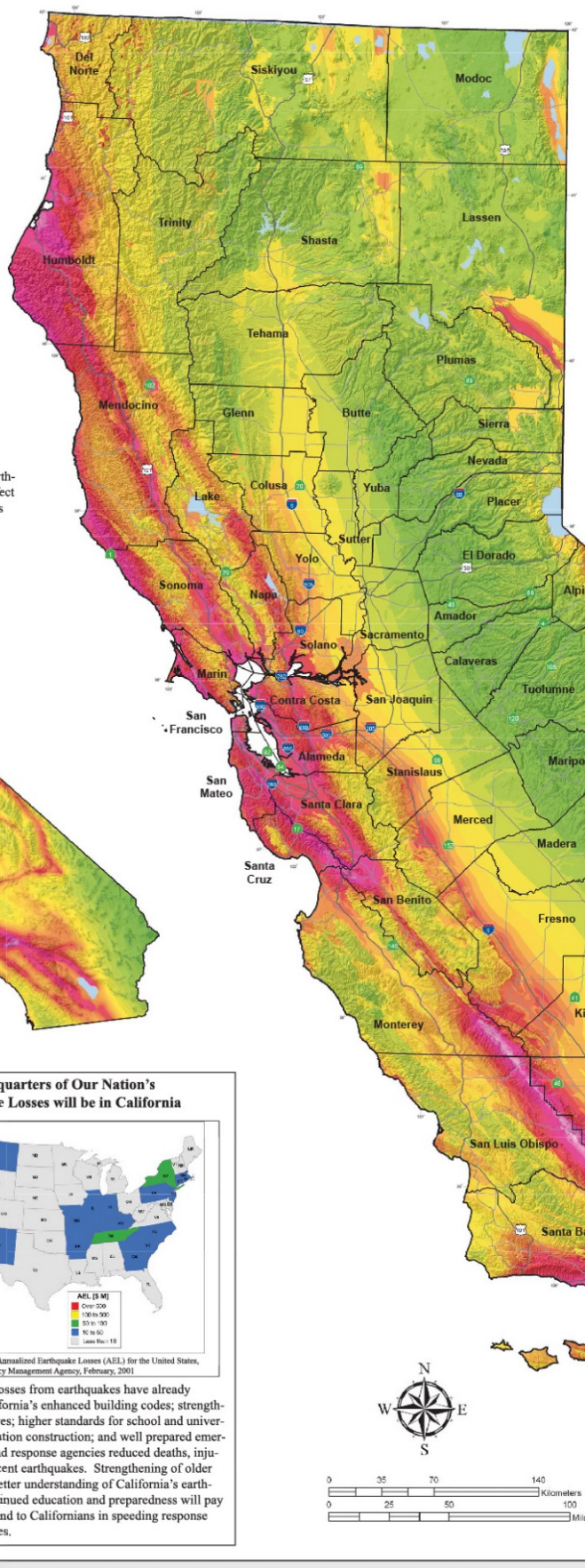
Earthquake Shaking Potential for California

2008

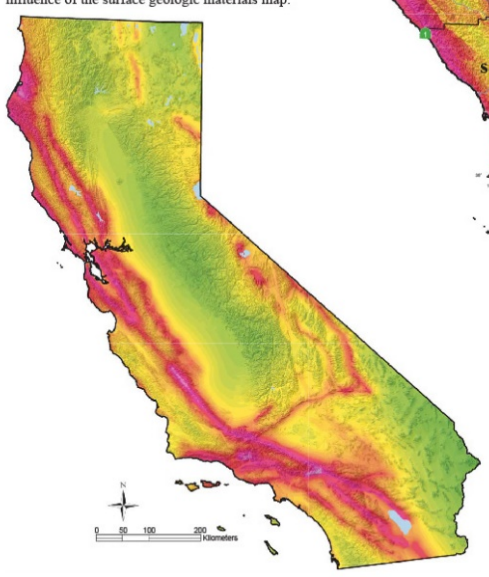
D. Branum[1], S. Harmsen[2], E. Kalkan[1], M. Petersen[2] and C. Wills[1]

[1]California Geological Survey, [2]United States Geological Survey

This map shows the expected relative intensity of ground shaking and damage in California from anticipated future earthquakes. The shaking potential is calculated as the level of ground motion that has a 2% chance of being exceeded in 50 years, which is the same as the level of ground-shaking with about a 2500 year average repeat time. Although the greatest hazard is in areas of highest intensity as shown on the map, no region is immune from potential earthquake damage. Expected earthquake damage in California in the next 10 years exceed $30 billion.



High frequency shaking potential: Earthquake shaking at 0.2 second period affects short, stiff structures and is also used in estimating future earthquake damage. Local soil conditions have less effect on high frequency shaking, so this map shows less influence of the surface geologic materials map.



Low frequency shaking potential: Earthquake shaking at 1.0 second period affects tall, relatively flexible buildings and correlates well with overall earthquake damage. Local soil conditions have greater effect on low frequency shaking, so this map shows more influence of the surface geologic materials map.

Level of Earthquake Hazard

These regions are near major, active faults and will on average experience stronger earthquake shaking more frequently. This intense shaking can damage even strong, modern buildings.

Increasing damage

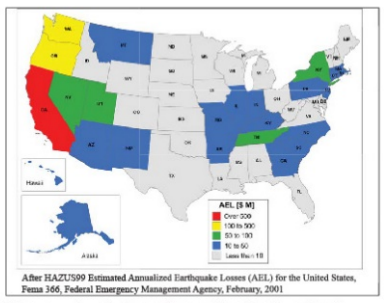
These regions are distant from known, active faults and will experience lower levels of shaking less frequently. In most earthquakes, only weaker, masonry buildings would be damaged. However, very infrequent earthquakes could still cause strong shaking here.

County Boundaries
Highways
Water

Important messages about earthquakes for Californians to remember:

- **Earthquakes have produced over $55 billion in losses in California since 1971. The next large earthquake may produce even greater losses, especially if it affects a major urban area. California's two largest urban centers lie in the State's highest hazard zones.**
- **A large earthquake in or near a major urban center in California will disrupt the economy of the entire state and much of the nation. Effective disaster planning by State and local agencies, and by private businesses, can dramatically reduce losses and speed recovery.**
- **Current building codes substantially reduce the costs of damage from earthquakes, but the codes are intended only to prevent widespread loss of life by keeping the buildings from collapsing, not to protect the building from damage**
- **If the Northridge or Loma Prieta earthquake had occurred closer to a major population center, fatalities would have been much higher. Earthquakes in Japan in 1995 (over 5,000 deaths), Turkey in 1999 (over 20,000 deaths), and China in 2008 (over 70,000 deaths) produced catastrophic death tolls.**
- **After a large earthquake, residents and businesses may be isolated from basic police, fire, and emergency support for a period ranging from several hours to a few days. Citizens must be prepared to survive safely on their own, and to aid others, until outside help arrives.**
- **Maps of the shaking intensity after the next major earthquake will be available within minutes on the internet. The maps will guide emergency crews to the most damaged regions and will help the public identify the areas most seriously affected.**

Three-quarters of Our Nation's Earthquake Losses will be in California

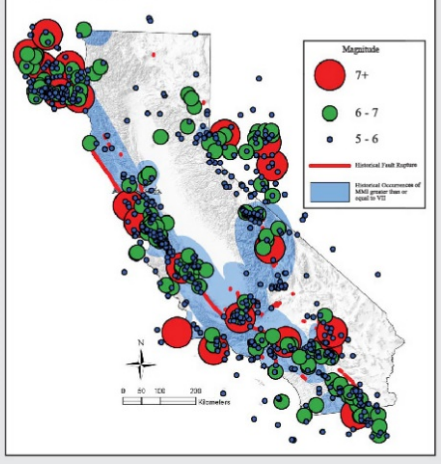


After HAZUS99 Estimated Annualized Earthquake Losses (AEL) for the United States, Fema 366, Federal Emergency Management Agency, February, 2001

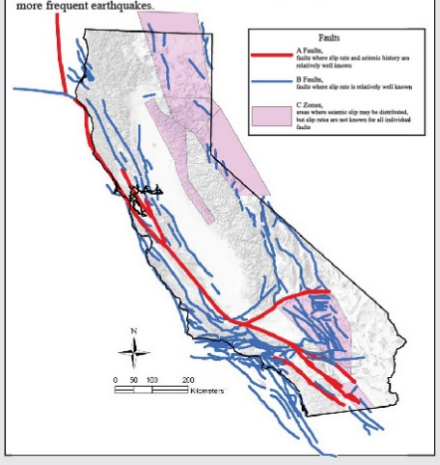
Efforts to reduce the losses from earthquakes have already proven effective. California's enhanced building codes; strengthened highway structures; higher standards for school and university, police and fire station construction; and well prepared emergency management and response agencies reduced deaths, injuries and damage in recent earthquakes. Strengthening of older buildings, gaining a better understanding of California's earthquake threat, and continued education and preparedness will pay an even greater dividend to Californians in speeding response after future earthquakes.

Earthquake shaking potential is calculated considering historic earthquakes, slip rates on major faults and deformation throughout the region and the potential for amplification of seismic waves by near-surface geologic materials. The complete analysis is called a Probabilistic Seismic Hazard Analysis. The resulting earthquake shaking potential is used in developing building code design values, estimating future earthquake losses and prioritizing earthquake retrofit.

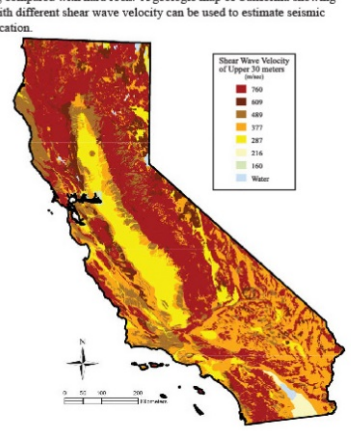
Historic earthquakes: The rate of historic earthquakes is used to estimate the rate of future earthquakes and to check the rate of future earthquakes calculated from other data.



Slip rates of major faults: The rate of earthquakes on faults is governed by the size of the fault and the rate that one side moves relative to the other. Larger faults can have larger earthquakes and faults with higher slip rates can have more frequent earthquakes.



Surface geologic materials: Seismic waves may be amplified by near surface materials. Soft soils, those with low shear wave velocity, amplify shaking compared with hard rock. A geologic map of California showing units with different shear wave velocity can be used to estimate seismic amplification.



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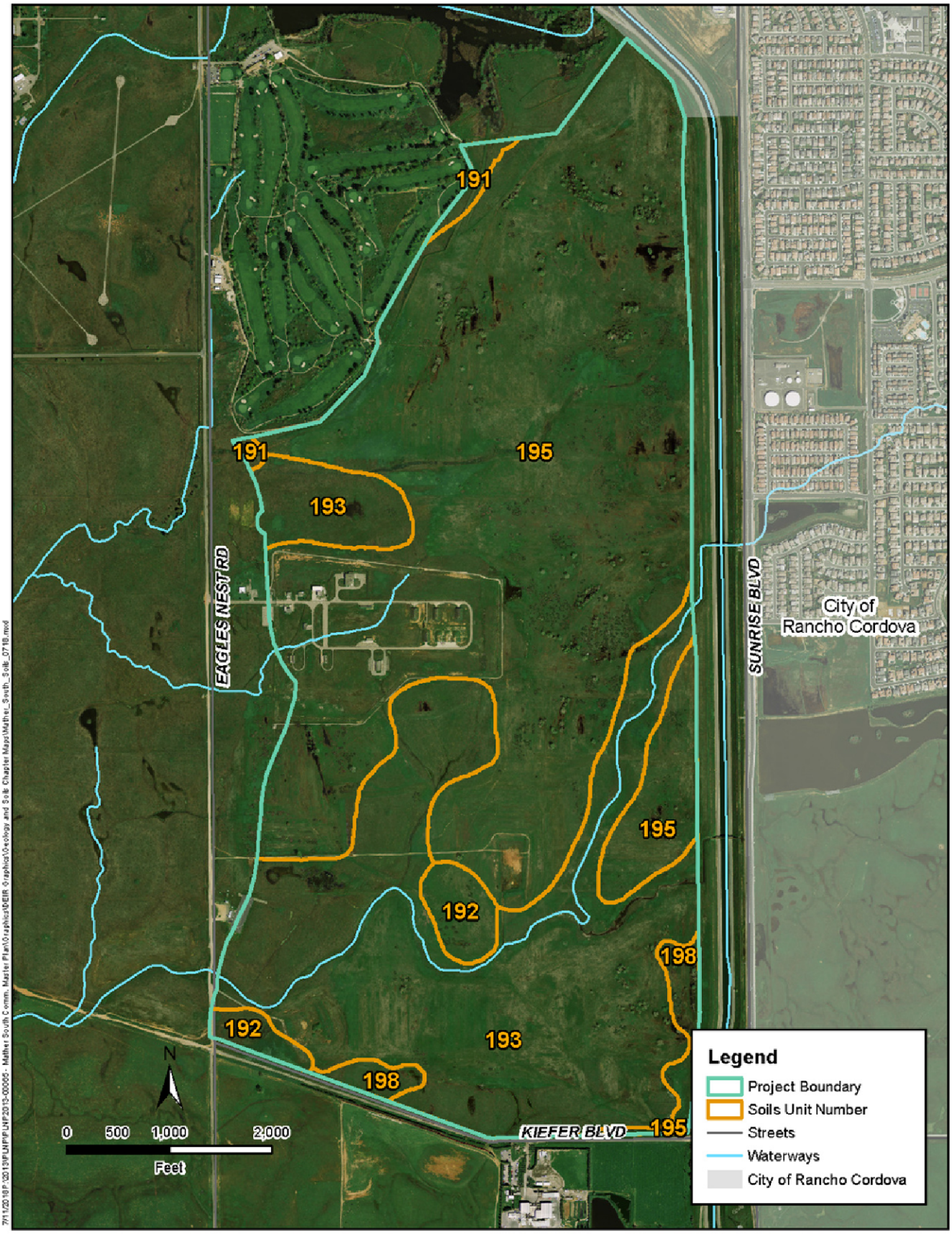
USGS science for a changing world
www.usgs.gov

Source: United States Geological Survey 2008

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Plate GS-2: Earthquake Shaking Potential for California

ASCENT ENVIRONMENTAL



Source: Natural Resources Conservation Service 2018

X15010101 08 026

Plate GS-3: Soil Types within the Mather South Plan Area

195: RED BLUFF-XERARENTS COMPLEX, 0 TO 2 PERCENT SLOPES

This unit contains approximately 50 percent Red Bluff soil and 35 percent Xerarents. This unit is located on high terraces. This soil type is present primarily in the northern and central portion of the Plan Area, although it is also located in the central and southeastern portion of the Plan Area. Red Bluff soil is very deep and well drained, with moderately slow permeability and high available water capacity. Xerarents are very deep, well drained, and altered. Runoff is slow, permeability is slow to moderate, and available water capacity is moderate or high. According to the soil survey, this unit type may provide wetland functions and values, which should be considered when plans are made for the enhancement of wildlife habitat or land use conversion. This soil type covers approximately 59.9 percent of the Plan Area.

198: REDDING GRAVELLY LOAM, 0 TO 8 PERCENT SLOPES

This unit is moderately deep and moderately well drained and is located on high terraces and terrace remnants. This soil type is located within the southwestern and southeastern portion of the Plan Area. Permeability is very slow, so water can remain perched above the claypan for short periods following heavy rainfall. Available water capacity is low and runoff is very slow or medium. This soil type covers approximately 1.9 percent of the Plan Area.

The California State Department of Conservation Departments' soil rating system does not determine the site to have significant agricultural value by any one of the four levels of soil suitability. It is not apparent whether agricultural uses occurred on the site in the last century. Review of the July 1980 printing of the U.S. Department of Agriculture, Soil Conservation Service Soil Survey of Sacramento County, California, identifies the near-surface soils on the subject property to consist of three different soil types all within the Redding Corning Red Bluff series. These soils are moderate to well drained soils over a cemented hardpan. However, construction on the Folsom South Canal in the late 1960s deposited spoil materials over much of the Plan Area to the south of the golf course, thereby obscuring the native soils (Mather South Community Masterplan 2018).

SOILS HAZARDS

Different types of soil have different characteristics and some may be more suitable for development than others. Some soil types are more prone to certain soil hazards, including those described below.

SUBSIDENCE

Subsidence is the gradual settling or sinking of the earth's surface with little or no horizontal motion. Sacramento County is affected by five types of subsidence. They are: compaction of unconsolidated soils by earthquake shaking, compaction by heavy structures, the erosion of peat soils, peat oxidation, and fluid withdrawal. The pumping of water for residential, commercial and agricultural uses from subsurface aquifers causes the greatest amount of subsidence in Sacramento County. Historic groundwater use within the Central Basin, which the Plan Area is a part, has resulted in a general lowering of groundwater elevations. Over time isolated groundwater depressions have

grown and coalesced into a single cone of depression that is centered in the southwestern portion of the Central Basin (SCGA 2006). Groundwater management is discussed in detail in Chapter 18 Water Supply of this EIR.

Expansive Soils

Expansive soils represent approximately one third of all soil types in Sacramento County. These soils are largely comprised of clays, which greatly increase in volume when water is absorbed and shrink when dried; hence the likelihood for expansive soils to occur within soils is indicated as shrink-well potential. Poor drainage conditions may also play a role because soil moisture contributes to the expansiveness of the soils.

Expansive soils are of concern because building foundations may rise during the rainy season and fall during the dry season in response to the clay's action. If movement varies under different parts of the building, the result is that foundations crack, structural portions of the building are distorted, and doors and windows are warped so that they do not function properly.

As described above under the description of the soil types present within the Mather South Plan Area and in Table GS-2, soil types with low-to-high shrink-swell potential are present within the Plan Area.

Landslides

Landslide is a general term used for a falling mass of soil and rock. The topography of the majority of Sacramento County is relatively flat and not subject to landslide. In Sacramento County, only a narrow strip along the eastern boundary, from the Placer County line to the Cosumnes River, is considered to have landslide potential.

The Mather South Plan Area is not located in an area that is considered to have landslide potential. The topography of the site is relatively flat, and there are no major slopes, so the potential for landslide risk would be very low.

Erosion

Erosion is a natural geological process by which landforms are worn down or reshaped by wind and water and the eroded material is deposited elsewhere. It can occur naturally in some areas of the County, particularly along portions of the American River bluffs; however, the highest potential for erosion to occur is as a result of construction activity. Erosion can occur when construction activities remove stabilizing vegetation cover and/or expose soils to wind and rain. Sacramento County, through Grading and Drainage Ordinances, provides measures to limit or restrict construction practices which might cause erosion, create a nuisance, constitute a hazard, or obstruct waterways. Permits issued under these ordinances ensure that projects avoid potentially significant erosion hazards.

Most of the soil types within the Mather South Plan Area have a low potential for erosion, although two soil types, Redding gravelly loam and Red Bluff loam, have a low to moderate potential for erosion.

Naturally Occurring Asbestos

Asbestos is a naturally occurring, fibrous silicate mineral mined for its useful properties, such as thermal insulation, chemical and thermal stability, and high tensile strength (greater resistance to longitudinal stress before rupturing). It was at one time commonly used as an acoustic insulator and for thermal insulation in building materials. It is often found occurring naturally in ultramafic rock, a rock closely related to serpentinite, but can also be associated with other rock types in California, though much less frequently than serpentinite and/or ultramafic rock.

Asbestos is classified as a known human carcinogen by state, federal, and international agencies and is identified as a toxic air contaminant. Asbestos poses a health risk only when it becomes friable, such as through disturbance or damage, and if inhaled into the lungs, can cause serious health problems including lung disease and cancer. Due to the risk of health problems, asbestos-containing building materials were banned by the US EPA in 1989 for construction of new structures.

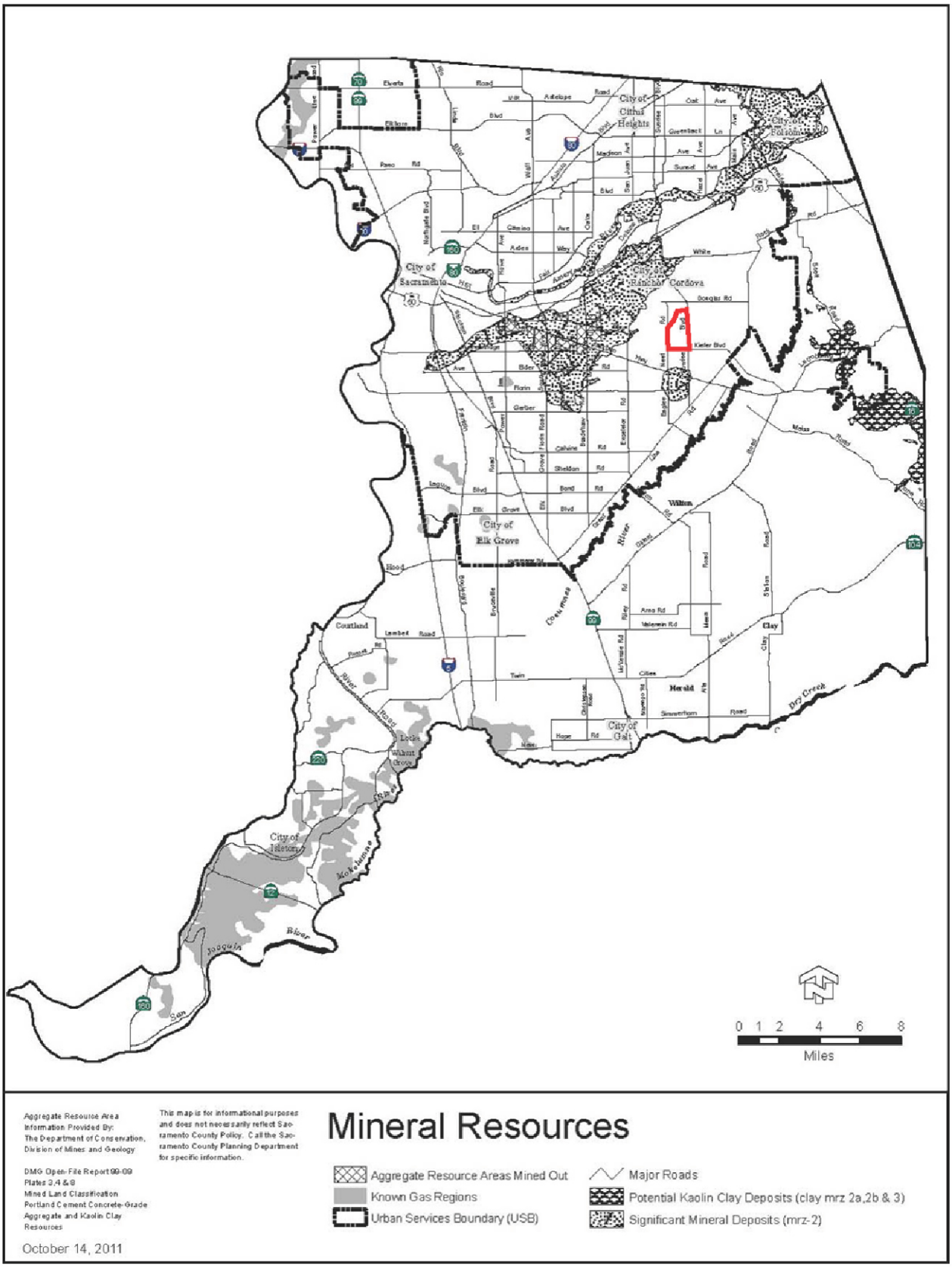
Although it is no longer used in new construction, because it occurs naturally, asbestos may be released to the atmosphere because of vehicular traffic on unpaved roads, during grading for development projects, and at quarry operations (broken or crushed serpentinite and ultramafic rocks) in areas where is occurs. The Sacramento Metropolitan Air Quality Management District determined that naturally occurring asbestos is present within areas of eastern Sacramento County, particularly along the County's boundary with El Dorado County, including within the City of Folsom and the unincorporated community of Rancho Murieta. However, all of the areas with naturally occurring asbestos are located east of Grant Line Road, so naturally occurring asbestos is not present within or in the vicinity of the Mather South Plan Area (SMAQMD 2018).

Mineral Resources

Mineral resources in Sacramento County include sand, gravel, clay, gold, silver, peat, topsoil, lignite, natural gas and petroleum. The principal resources which are in production are aggregate (sand and gravel) and natural gas. Resource conservation issues associated with natural gas production and the lesser minerals are not currently considered vital within Sacramento County and conservation issues related to mineral resources focus primarily on aggregate production.

As shown on GS-4 below, the Mather South Plan Area is located within an Urban Services Boundary zone. This indicates that the area has been designated for development, even as the site may contain mineral occurrences of undetermined significance.

The State designates Aggregate Resource Areas (ARA) for the County to utilize for land use planning and conservation. In all, 22 ARAs are designated as available land in Sacramento County. As shown (Plate GS-4), the Plan Area is not located within or adjacent to any ARAs. However, active aggregate mining activities are located just west of Excelsior Road, south of Mather Airport.



Aggregate Resource Area Information Provided By: The Department of Conservation, Division of Mines and Geology

DMG Open-File Report 99-09 Plates 3,4 & 9 Mined Land Classification Portland Cement Concrete-Grade Aggregate and Kaolin Clay Resources

October 14, 2011

This map is for informational purposes and does not necessarily reflect Sacramento County Policy. Call the Sacramento County Planning Department for specific information.

Mineral Resources

- Aggregate Resource Areas Mined Out
- Known Gas Regions
- Urban Services Boundary (USB)
- Major Roads
- Potential Kaolin Clay Deposits (clay mrz 2a,2b & 3)
- Significant Mineral Deposits (mrz-2)

Source: County of Sacramento 2011

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Plate GS-4: Mineral Resources Map

ASCENT ENVIRONMENTAL

PALEONTOLOGICAL RESOURCES BACKGROUND

Paleontological resources are the remains and/or traces of prehistoric plant and animal life exclusive of human remains or artifacts and the geologic units that house them. Paleontological resources are useful in education in that they promote the understanding of the history of life and the diversity of the Earth's biota. In Sacramento County, fossil vertebrates have been recovered from the Riverbank formation at Arco Arena, along Chicken Ranch Slough near Howe Avenue and Arden Way, at the Teichert Gravel Pit, the Davis Gravel Pit, and on Ehrhardt Avenue, near the Sacramento Regional Wastewater Treatment Plant (Sacramento County 2010).

The Mather South Plan Area is mapped as Tertiary Laguna Formation. The Laguna Formation is described as interbedded alluvial gravels, sand, and silt (ENGEO 2012). The Laguna Formation (Pliocene aged formation) has produced significant fossil remains at many localities within the Central Valley and is considered to have high sensitivity under criteria established by the Society of Vertebrate Paleontology (SVP) (Sacramento County 2010).

REGULATORY SETTING

STATE

ALQUIST-PRIOLO EARTHQUAKE FAULT ZONING ACT

The 1972 Alquist-Priolo Earthquake Fault Zoning Act regulates development near active faults to mitigate the hazard of surface fault rupture. Under this Act, the State Geologist is required to delineate earthquake fault zones along known active faults in California. Cities and counties affected by these zones must regulate certain developments within these zones, and withhold development permits for sites until geologic investigations demonstrate that they are not threatened by surface displacements from future faulting. For the purposes of this act, an active fault is defined as a fault that has “had surface displacement within Holocene time” (about the last 11,000 years). Sacramento County is not affected by Earthquake Fault Zones.

SEISMIC HAZARDS MAPPING ACT

The Seismic Hazards Mapping Act of 1990 requires the State Geologist to delineate liquefaction and earthquake-induced landslide hazard zones in the state. Cities and counties affected by these hazard zones must regulate certain developments within these zones, and withhold development permits for sites until geologic investigations demonstrate they are not threatened by liquefaction, earthquake, or induced landsliding during future earthquakes. Sacramento County is located outside of the Seismic Hazard Mapping Zones, although according to the CGS, the County has not yet been evaluated for possible inclusion in a Seismic Hazard Zone.

California Uniform Building Code

The California Uniform Building Code (CBC) contains the minimum standards for design and construction in California. All development in California is subject to the regulations of the CBC. Local standards other than the code may be adopted if those standards are more strict. Some design considerations associated with seismic hazards need to address the appropriate building codes for a particular site. The 2016 California Building Code is adopted and incorporated into Title 16 of the Sacramento County Code and all construction, alteration, moving, demolition, repair and use of any building or structure within Sacramento County shall be made in conformance with the CBC.

Local

Land Grading and Erosion Control

The Mather South Project would be required to comply with the Sacramento County Land Grading and Erosion Control Ordinance (Sacramento County Code Ch. 16.44). The ordinance was established to minimize damage to surrounding properties and public rights-of-way; limit degradation to the water quality of watercourses; and curb the disruption of drainage system flow caused by the activities of clearing, grubbing, grading, filling, and excavating land. The ordinance establishes administrative procedures, minimum standards of review, and implementation and enforcement procedures for the control of erosion and sedimentation that are directly related to land grading activities.

Sacramento County General Plan

The General Plan contains the following goals and policies related to seismic and geologic hazards, and to conservation of soils.

SA-1. The County shall require geotechnical reports and impose the appropriate mitigation measures for new development located in seismic and geologically sensitive areas.

CO-161. As a condition of approval for discretionary projects, require appropriate mitigation to reduce potential impacts where development could adversely affect paleontological resources.

CO-163. Require that a certified geologist or paleoresources consultant determine appropriate protection measures when resources are discovered during the course of development and land altering activities.

Cordova Community Plan

The Cordova Community Plan does not contain any specific policies related to geology, soils, seismic safety or paleontological resources.

Mather Field Specific Plan and Special Planning Area

The Mather Field Specific Plan and Special Planning Area contains the following principle that is applicable to the project.

> PRINCIPLE 5. Allow for the extraction of aggregate resources in a manner that is consistent with environmental regulations and development objectives.

Significance Criteria

Based on Appendix G of the State CEQA Guidelines, the project was determined to result in a significant impact to geology, soils or paleontology if it would:

1. Expose people or structures to substantial risk of loss, injury, or death involving:
    a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault.
    b. Strong seismic groundshaking
    c. seismic-related ground failure, including liquefaction
    d. Landslides
    e. Unsafe exposure to naturally occurring asbestos
2. Result in substantial soil erosion or the loss of topsoil.
3. Be located on a geological unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.
4. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available.
5. Result in a substantial loss of an important mineral resource.
6. Directly or indirectly destroy a unique paleontological resource or site.
7. Result in conversion of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

Methodology

In general, the geotechnical characteristics of the Plan Area determine the potential for structural and safety hazards as well as mineral resource impacts that could occur with development related to the Mather South Project. A Preliminary Geotechnical Report was prepared for the Plan Area by ENGEO Incorporated (ENGEO) in August 2012. The report is included as Appendix GS-1 of this EIR. The Mather South Project is analyzed

in terms of its potential for geologic or soils-related hazards to people and property in the Plan Area as well as potential for mineral resource impacts and impacts to paleontological resources.

ISSUES NOT DISCUSSED FURTHER

All issues have been evaluated below.

IMPACTS AND ANALYSIS

2016 MATHER FIELD PROJECT EIR DETERMINATION

The Mather Field Project EIR evaluated impacts related to geology, soils, and paleontology from implementation of the Mather Field Project which consisted of a realignment of Zinfandel Drive and trunk extension, creation of the Mather Preserve and the establishment of an Urban Development Area designation for the Mather South Plan Area.

The EIR concluded less than significant or no impacts related to geology and soils, paleontology, mineral resources, and agricultural resources. The discussion of impacts can be found on pages CK-2 and CK-7 of the Mather Field Project EIR and is hereby incorporated by reference.

MATHER SOUTH PROJECT IMPACTS DETERMINATION

IMPACT: SEISMIC-RELATED ISSUES

The Mather South Plan Area is not located within an Alquist-Priolo Earthquake Fault Zone or within the vicinity of a known fault. In addition, Sacramento County is in one of the areas least prone to earthquake shaking potential, as depicted in Plate GS-1 and GS-2, above. This, in combination with required CBC compliance, would ensure that buildings are built to withstand minor groundshaking that could occur across the Plan Area. Though there is topographical variation on the site, there are no major bluffs or geologic features that would make the project susceptible to landslides. Therefore, impacts related to criteria 1a through 1d, which evaluate impacts related to seismic activity and landslides would be ***less than significant***.

The Mather South Plan Area is not within a mapped naturally occurring asbestos area and would connect to a public sewer system. Therefore, there would be ***no impacts*** related to naturally occurring asbestos or soil suitability for septic systems.

MITIGATION MEASURES:

None required.

Impact: Soil Erosion or Loss of Topsoil

According to the NCRS web soil survey and *The Soil Survey of Sacramento County, California*, (1993) issued by the USDA Soil Conservation Service, the soil types mapped within the Plan Area have water erosion potential ranging from low to moderate. The most likely potential for erosion to occur would be during construction when soils would be graded and excavated, and may be exposed to the effects of wind and/or water for some length of time.

The Mather South Project, like all other development within the County, would be required to comply with the Sacramento County Land Grading and Erosion Control Ordinance (Sacramento County Code Ch. 16.44). The ordinance was established to minimize damage to surrounding properties and public rights-of-way; limit degradation to the water quality of watercourses; and curb the disruption of drainage system flow caused by the activities of clearing, grubbing, grading, filling, and excavating land. The ordinance establishes administrative procedures, minimum standards of review, and implementation and enforcement procedures for the control of erosion and sedimentation that are directly related to land grading activities. Refer to Chapter 12 Hydrology and Water Quality of this EIR for further discussion of required erosion control mechanisms.

Because the project would be subject to the County Land Grading and Erosion Control Ordinance and the State Water Resources Control Board stormwater permitting requirements, any development related to the project would be subject to erosion and sediment control measures as a matter of standard policy. As such, the project would not result in substantial soil erosion or the loss of topsoil and impacts related to soil resources would be ***less than significant***.

MITIGATION MEASURES:

None required.

Impact: Exposure to Expansive Soils

According to the Preliminary Geotechnical Report prepared by ENGEO, the Mather South Plan Area contains clayey soils with medium to high expansive properties with variations in moisture content. It is anticipated that isolated pockets of expansive clay are present at various locations across the Plan Area (ENGEO 2012). Furthermore, the soils within the Plan Area exhibit shrink-swell potential in the low to high range.

Development related to the Mather South Project would result in new structures and roadways located in areas potentially containing expansive soils, which have the ability to cause structural damage to both foundations and roads. To address this, the construction permitting process within Sacramento County requires completed geotechnical reports for developments located within areas known to contain expansive soils; the purpose of this is to identify potential hazards that may impact a project as well as implement measures to eliminate the hazardous soil conditions. Measures related to eliminating potential hazards related to expansive soils include the excavation of silts and clays to a suitable depth (recommended at the upper 1 to 2 feet of building

pads, per the preliminary geotechnical report), the replacement of these materials with engineered fill and compacted granular fill material, or the mixing of onsite soils to achieve a consistent soil composition. This would effectively mitigate any expansive soils within the construction areas of the project, and ensure that any expansion and contraction under the foundation would be evenly distributed. In addition, structural design must conform to the criteria detailed in the CBC (Chapters 16 [structural design], 18 [soils and foundations], 33 [safeguards during construction] and the Appendix to Chapter 33). The codes and policies are part of the existing regulatory framework of the County and adherence is required for any new development related to the Project.

Because all project-related development would adhere to the CBC, the project would ensure the maximum necessary protection available for development within areas known to contain expansive soils would occur and the project would avoid substantial risk to life and property. Therefore, impacts related to expansive soils would be ***less than significant***.

MITIGATION MEASURES:

None required.

IMPACT: RESULT IN A SUBSTANTIAL LOSS OF A MINERAL RESOURCE

Development of the Mather South Project would result in new residential and commercial development in the Plan Area, which would create a permanent loss of access to mineral resources. The Plan Area has been designated a part of the Urban Services Boundary, which indicates the County's intent for development of the site. Additionally, the site has not been designated by the State as an ARA, nor is it adjacent to any of the active mining sites in the vicinity. The Mather Field Specific Plan illustrates the continued importance of access to mineral resources within the Mather Field Specific Plan area, and development of the Mather South Project would not restrict that access. Therefore, impacts related to mineral resources are ***less than significant***.

MITIGATION MEASURES:

None required.

IMPACT: POTENTIAL DESTRUCTION OF BURIED PALEONTOLOGICAL RESOURCES

Construction of the Mather South Project would involve grading activities and some trenching for infrastructure development. Because ground disturbing activities would be relatively shallow and not require deep digging and trenching, the potential for encountering buried paleontological resources is low. However, given that the Laguna Formation, which underlies the Plan Area, is considered to have high paleontological sensitivity under criteria established by the SVP, it is possible that buried paleontological resources could be encountered. Therefore, impacts related to paleontological resources would be potentially significant. With the implementation of the Mitigation Measure GS-1 below, in the event of a discovery of paleontological resources, impacts would be reduced to ***less than significant with mitigation***.

MITIGATION MEASURES:

GS-1. In the event that paleontological resources are unearthed during ground-disturbing activities during site preparation and/or construction, ground-disturbing work shall immediately cease in the vicinity of the discovery. The project applicant shall immediately notify the Environmental Coordinator of the discovery and contact the Geology Department of the University of California at Davis or other qualified institution. A qualified paleontologist or paleoresources consultant shall prepare a mitigation program for the discovery and monitor the area of the discovery and the vicinity and identify, curate, and store the specimen as appropriate. All phases of mitigation shall be supervised by a professional paleontologist who maintains the necessary paleontological collecting permits and repository agreements.

If any additional paleontological remains are encountered during the project, the paleontologist has the authority to stop work in the immediate vicinity of the find to evaluate the find, record, and remove the find if significant. The paleontologist shall also prepare a report of the find(s) and their significance after operations are complete.

IMPACT: RESULT IN LOSS OF IMPORTANT AGRICULTURAL SOILS

Development of the Mather South Project would result in new residential and commercial development in the Plan Area, which would create a permanent loss of access to soils within the Plan Area. The Plan Area has been designated a part of the Urban Services Boundary, which indicates the County's intent for development of the site. As described above, a portion of the Plan Area contains soils that may be considered for Prime Soils classification (191: Red Bluff Loam (1.7 percent) and 192: Red Bluff Loam (2.2 percent)). However, construction of the Folsom Canal resulted in the distribution of other soils across areas in the vicinity of the red bluff loam soils. Additionally, the historic use of the Plan Area was as Mather AFB and the site has not been in active agriculture since before the early turn of the century. Therefore, the project site is not designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on the current Sacramento County Important Farmland Map published by the California Department of Conservation. There would be ***no impact*** related to important agricultural soils.

MITIGATION MEASURES:

None required.

11 HAZARDOUS MATERIALS

INTRODUCTION

The Mather Field Project EIR (2016) evaluated the Mather South Plan Area at the plan-level and that analysis is hereby incorporated by reference in this document and summarized where appropriated below. This chapter describes the regulatory and environmental setting for hazardous materials in the Plan Area, identifies and analyzes impacts related to hazardous materials from implementation of the Mather South Project at a project-level, and if necessary, recommends mitigation measures to reduce or eliminate significant impacts.

During the NOP scoping process, no comments were raised about hazardous materials. A copy of the NOP and comment letters received in response to the Notice of Preparation are included in Appendix PD-2 of this Mather South Project Draft EIR.

BACKGROUND

The term "hazardous substances" refers to both hazardous materials and hazardous wastes. A material is defined as hazardous if it appears on a list of hazardous materials prepared by a federal, state or local regulatory agency, or if it has characteristics defined as hazardous by such an agency. A "hazardous material" is defined in the Code of Federal Regulations (CFR) as "a substance or material that is capable of posing an unreasonable risk to health, safety, and property when transported in commerce" (49 CFR 171.8). California Health and Safety Code Section 25501 defines a hazardous material as follows:

> "Hazardous material" means any material that, because of its quantity, concentration, or physical, or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment."

The definition of a hazardous waste, as regulated by the California Environmental Protection Agency, Department of Toxic Substances Control (Cal EPA, DTSC), is found in the California Health and Safety Code Section 25141 (b), is as follows:

> "…as hazardous waste because of its quantity, concentration, or physical, chemical, or infectious characteristics: (1) cause, or significantly contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible illness; (2) pose a substantial present or potential hazard to human

> health or the environment, due to factors including, but not limited to, carcinogenicity, acute toxicity, chronic toxicity, bio-accumulative properties, or persistence in the environment, when improperly treated, stored, transported, or disposed of, or otherwise managed."

A hazardous waste is a "solid waste" that exhibits hazardous characteristics. The U.S. Environmental Protection Agency (EPA) has defined the term "solid waste" to include the following: any gaseous, liquid, semi-liquid, or solid material that is discarded or has served its intended purpose, unless the material is excluded from regulation. Such materials are considered wastes whether they are discarded, reused, recycled, or reclaimed. The EPA classifies a waste as hazardous if it (1) is listed on the EPA's list of hazardous waste and/or (2) exhibits one or more of the following properties: ignitability (including oxidizers, compressed gases, and extremely flammable liquids and solids), corrosivity (including strong acids and bases), reactivity (including materials that are explosive or generate toxic fumes when exposed to air or water), or toxicity (including materials listed by the EPA as capable of inducing systemic damage in humans or animals).

ENVIRONMENTAL SETTING

The primary historic use of the Mather South Plan Area is associated with the former Mather Air Force Base (AFB). Mather AFB was used at various times from 1918 to 1993 by the U.S. Air Force (USAF), and the air field was reopened as a civilian airport in 1995. Due to the types and ages of past uses within the Plan Area, several areas of Mather South have been contaminated with or contain hazardous materials.

Several studies analyzing the existing conditions at the former Mather AFB and Mather Field have been conducted since the 1980's and contaminated sites have been identified, with restrictions and measures developed, to address hazardous materials. Since 1982, approximately 89 contaminated sites have been identified within Mather Field as a result of aircraft fueling and maintenance activity, fire protection training, corrosion control, past disposal activities, and landfilling. Main contaminants include solvents, petroleum products, and various solid wastes. In addition, pesticides, herbicides, asbestos, polychlorinated biphenyls (PCBs), radon, ordnance, metals (including lead), low-level radioactive waste, landfill gases, and medical waste, which were used, stored, or generated as part of base operations have been identified as potential sources of contamination.

Since Mather Field was operated as a federal military installation, EPA, U.S. Department of Defense (DOD), USAF, Cal EPA, and DTSC oversee hazardous substances investigations and remediation. The DOD also oversees its own program, Installation Restoration Program (IRP), which identifies, characterizes and remediates contamination at military facilities. The DOD implemented IRPs in 1980 to clean up hazardous substances/waste contamination on its installations. The program established a process for identifying and evaluating past disposal sites, controlling migration of contaminants, and controlling potential hazards to human health and the

environment. The Mather IRP identified soil and groundwater contamination throughout Mather AFB and surrounding areas, and the former Mather AFB is listed on the National Priorities List. Specific sites of known contamination within the Plan Area are described below.

RECOGNIZED ENVIRONMENTAL CONDITIONS

The GeoTracker program, which is a resource for identifying environmental data (including the location of leaking storage tanks, cleanup sites, disposal sites, monitoring wells, sites with hazardous waste permits and the status of such sites) indicates that there are several military cleanup sites within the Mather South Plan Area; however, all of them are recorded as closed and complete (

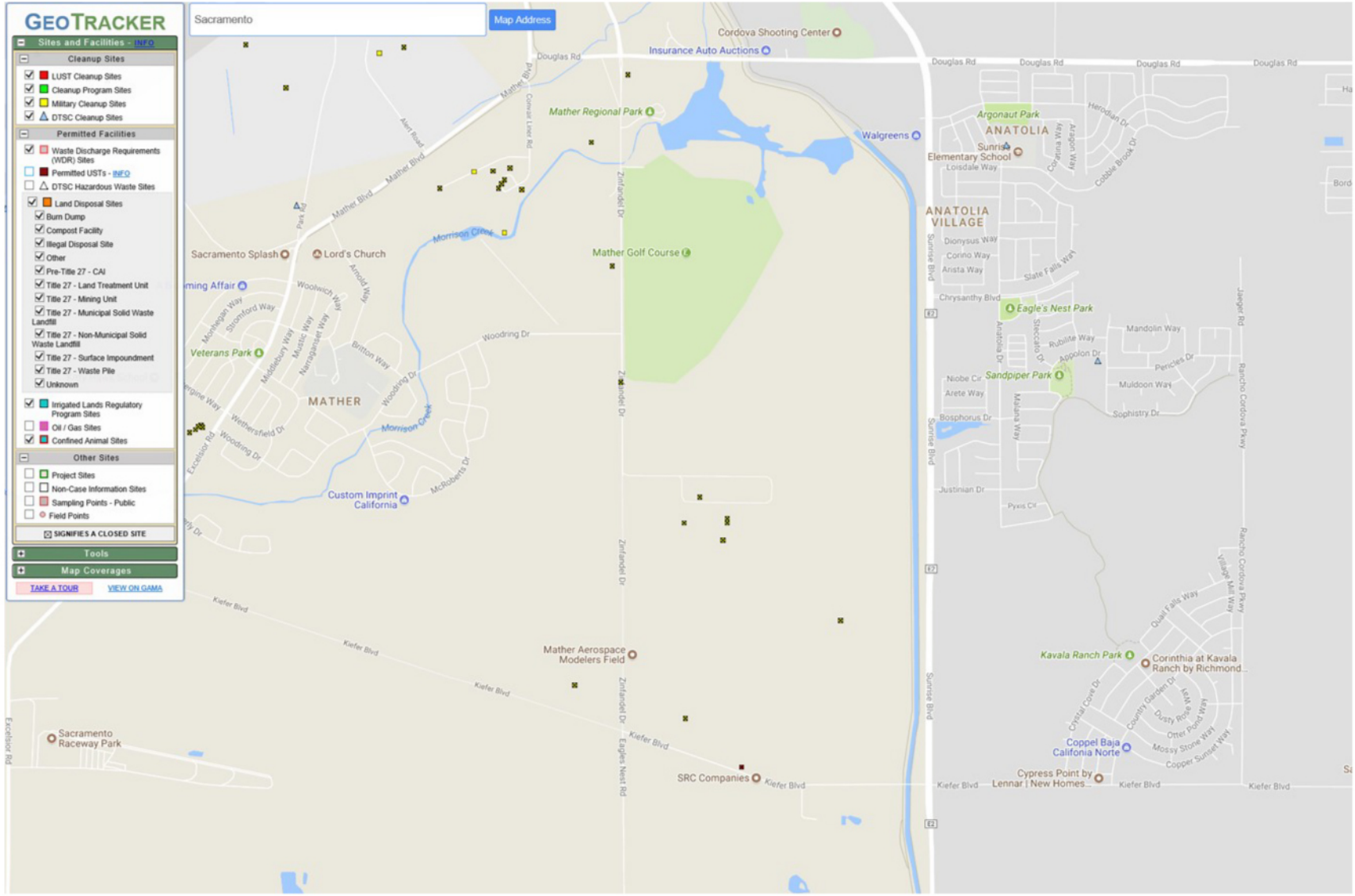
Plate HM-1).

A Phase 1 Environmental Site Assessment (ESA) (ENGEO 2012) prepared for the Plan Area and included as Appendix HAZ-1 identified several sites (also DOD IRP sites as shown on Plate HM-3) related to past land uses associated with Mather AFB (Plate HM-2). The site reconnaissance and records review identified evidence of soil and groundwater impairments associated with the past use of the Plan Area. A review of regulatory databases maintained by County, State, tribal, and federal agencies found documentation of hazardous materials discharge within the Plan Area and identified contaminated facilities within the appropriate American Society for Testing and Materials (ASTM) search distances that would reasonably be expected to adversely affect groundwater beneath the Plan Area.

A handful of the identified sites have been closed and no longer pose hindrances to future development (Area of Concern [AOC] XU-400 - Practice Grenade Range, and a 41-acre Ordnance Burial AOC). Based on the findings of the Phase I ESA, one Recognized Environmental Condition (REC) and two historical RECs were identified for the Plan Area.

1. **REC**: Previous soil remediation was performed under regional water quality control board (RWQCB) oversight at the location of two leaking diesel underground storage tanks (USTs) grouped east of building 18015 (see Plate HM-2). According to the no further action letter issued by the RWQCB-Region 5 in 2002, shallow vadose zone soil impacts remain adjacent to the building. A soil boring at the UST site in 2001 identified a perched groundwater zone at 5 feet and the top of the regional groundwater table at 143 feet. A water sample collected at 10 feet exhibited motor oil at 1,300 ug/liter. No constituents were detected in the sample from 143 feet. A monitoring well (MAFB-27C) was located 1,000 feet south (downgradient) from the USTs, and exhibited no detections of motor oil when abandoned in 1998, although historically the well exhibited low-level detections of methylene chloride, and oil/grease. Inactive offsite supply well K-9 located 1,000 feet west (cross gradient) of the UST exhibited trace concentrations of trichloroethylene (TCE) from 1979–1981. Vapor samples collected from vapor monitoring wells exhibited concentrations of chlorinated compounds only, including TCE and tetrachloroethylene (PCE). A

bioventing/vapor extraction remediation system was operated at the site and reportedly was successful in eliminating leaching concerns.

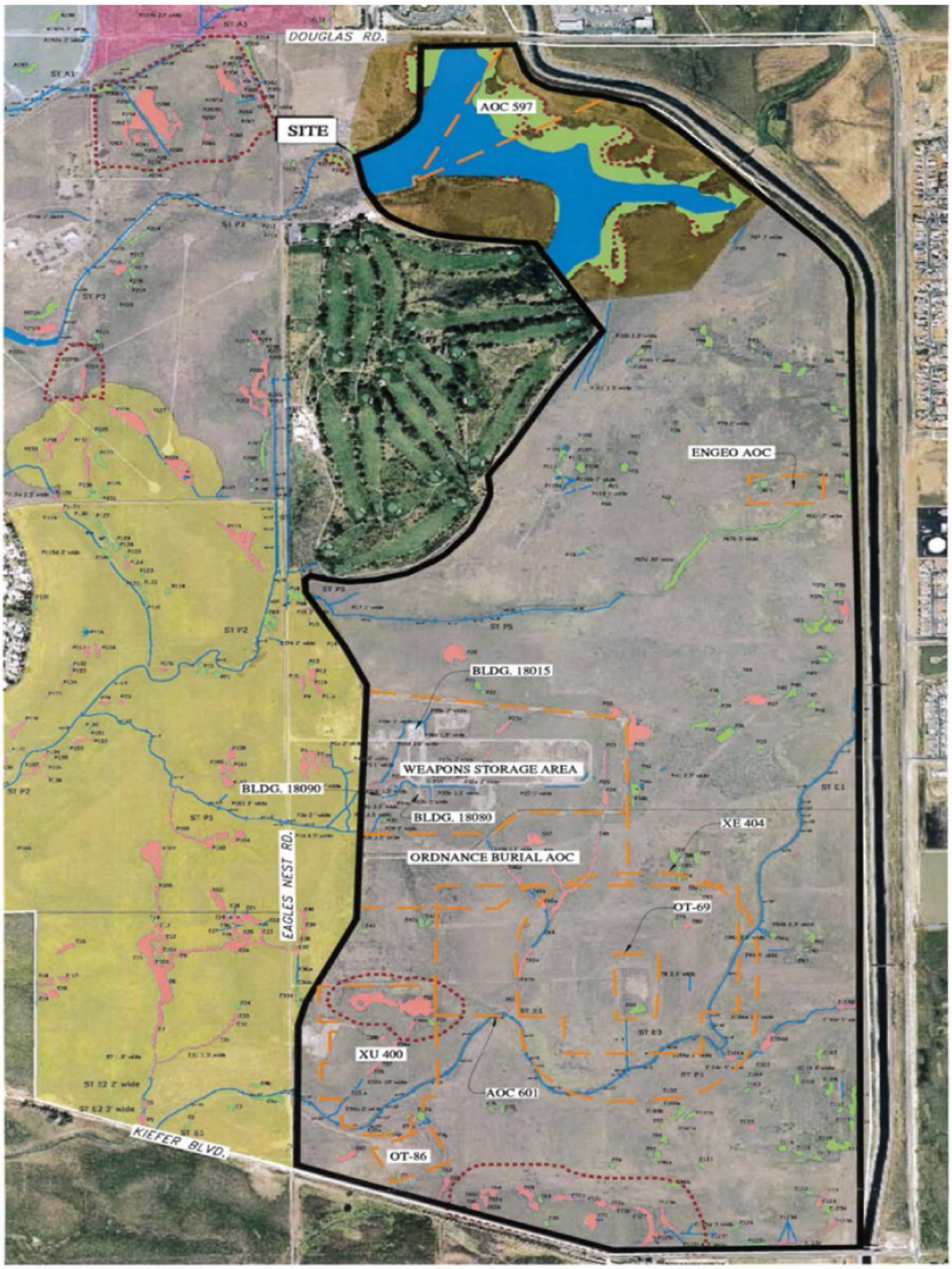


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X15010101 08 084

Plate HM-1: Geotracker Mapped Contamination Sites in and Adjacent to Mather South

ASCENT ENVIRONMENTAL

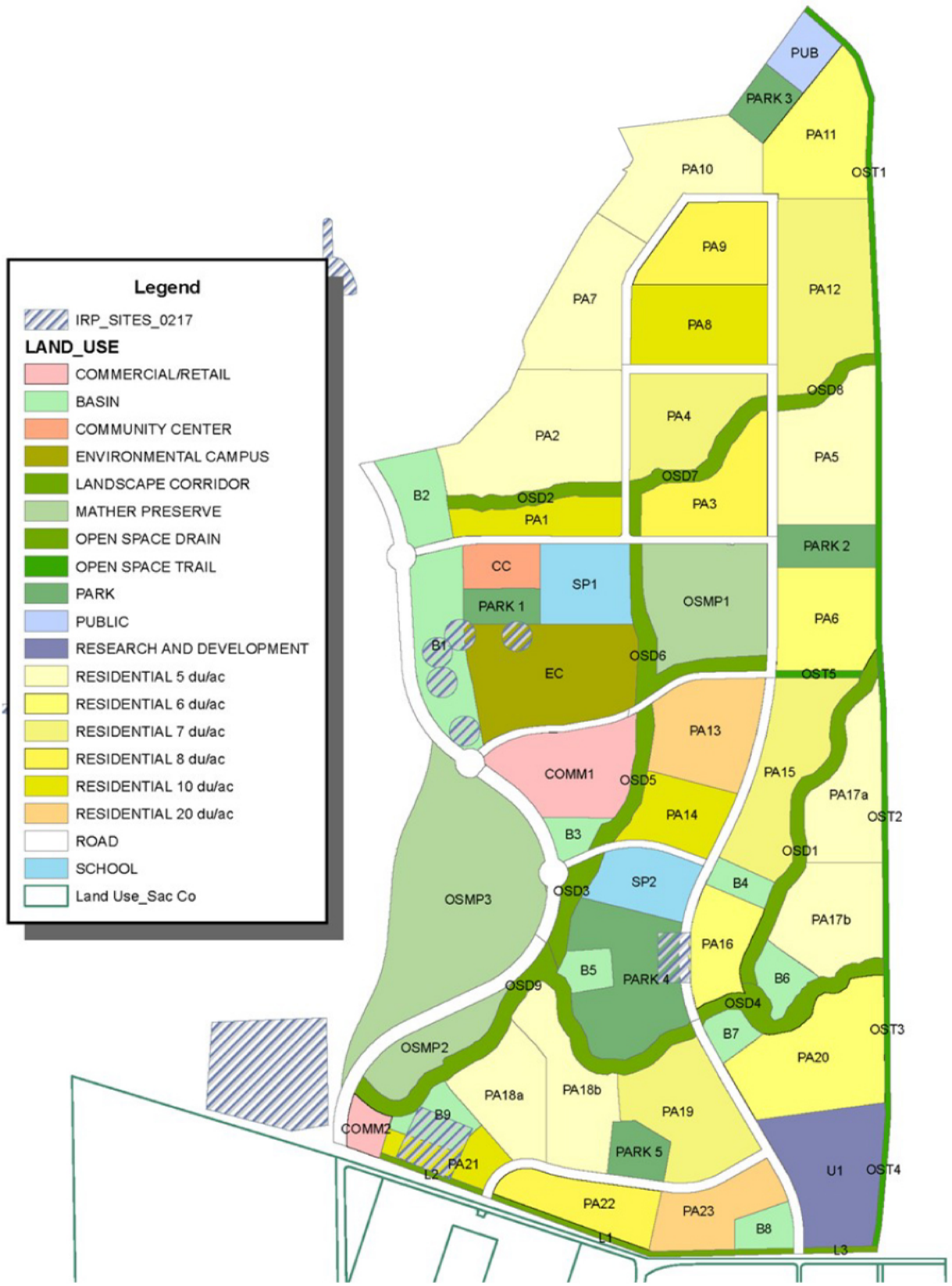


Source:

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Plate HM-2: Historical Hazardous Material Sites

ASCENT ENVIRONMENTAL



Source:

X15010101 08 086

Plate HM-3: IRP Sites Within and Adjacent to Mather South

2. **Historic REC (Priority AOCs):** Six AOCs were identified within the Mather South Plan Area and are shown on Plate HM-2: 1) AOC 597 (Mather Lake), 2) weapons storage area (includes WP-17), 3) 41-acre suspected ordnance burial area, 4) AOC 601 (includes XE-404 and OT-69, which are described below), 5) AOC XU-400, 6) OT-86. AOC XU-400 - Practice Grenade Range and the 41-acre Ordnance Burial AOC have been closed and no longer pose hindrances to future development. The current statuses of the three priority AOCs are summarized below.

   a. **AOC 597:** The Mather Lake AOC is located adjacent the north end of the Plan Area but is not within the Mather South Project boundary. Mather Lake was historically used as a practice grenade firing range when the lake was dry in 1977. A geophysical survey to a depth of 1 foot was performed along the accessible portions of the lake and shoreline, which identified only limited amounts of expended small arms rounds. Restrictions against public access along the east and south shorelines are currently being developed by USAF.

   b. **OT-69/XE-404:** OT-69 consists of an approximately 4-acre natural basin that lies approximately 10 feet below the surrounding grade in the southern portion of the Plan Area (Plate HM-2). The basin was historically used by USAF as a detonation and burn area. XE-404 consists of an approximately 15-acre buffer area surrounding OT-69. Geophysical surveys were performed within the two areas to a depth of 10 feet, and subsequent excavations and mechanical screening of soil removed buried drums, classified aircraft parts, and small arms rounds at depths up to 12 feet. Soil sampling was performed for dioxins and furans, metals, semivolatile organic compounds, perchlorate, and explosives (HMX, RDX, DNT, TNB, TNT). A CERCLA response action resulted in the excavation of the upper 1 foot of soil across the footprint of OT-69. The deed executed in 2000 requires written notification to be provided to USAF before any soil disturbance, including residential grading, within OT-69. In addition, the 2010 Explanation of Significant Differences prohibited residential use, hospitals, public or private schools for minors, and day care centers within OT-69. However, in 2011, USAF completed munitions response actions at the site as reported in the *Final Munitions Response and Supplemental Site Investigation Report for Munitions Response Site (MRS) XE-404 (Overlaps IRP Site OT-69),* October 20I2 (AR #33I9). This report recommends No Further Action (NOFA) with respect to explosive hazard, human health risk, and ecological risk at the site. EPA and DTSC concurred with the NOFA conclusions in September and October, 20I2 (AR #s 33I7 and 3322). A *No Further Action Explosives Safety Submission for Site XE-404* (*Overlaps Site OT-69*) (AR #3349) supporting the NOFA conclusions for explosives safety concerns was approved by the DOD Explosives Safety Board in January 20I3 (AR #335I). Therefore, the site remedy is complete and institutional controls are no longer required. USAF will remove deed restrictions associated with Site OT-69 and provide a CERCLA § I20(h)(3)(A) covenant declaring all remedial action necessary to protect human health and the environment has been taken. Sacramento County is responsible for notifying any future landowners of the former military use of the property, completed munitions response actions at the site, and the appropriate steps to take if suspected munitions-related items are discovered (USAF 2013). The County has entered into a Purchase and Sale Agreement for the property, and has notified the future landowner consistent with protocols. If suspected munitions-related items are discovered, notification will include Sacramento County Sheriff's Department, Sacramento Metropolitan Fire District, and the USAF Civil

Engineer Center Base Realignment and Closure Program Management Division (AFCEC/CIB).

c. **OT-86:** The roughly 5-acre area is in the southwestern portion of the Plan area near Kiefer Road and Eagles Nest Road. It was historically used as a small-arms firing range. Surface soil sampling identified concentrations of total lead up to 1,660 milligrams per kilogram. Surface soil excavations conducted with OT-86 resulted in the removal of approximately 3,200 cubic yards of soil. The deed executed in 2000 requires written notification to be provided to USAF before any soil disturbance, including residential grading, within OT-86.

d. **Historic REC (Non-Priority AOC):** A 7,500-gallon septic tank was backfilled with pea gravel in 2000 and five associated dry wells currently remain within an old weapons storage area (WP-17), between buildings 18080 and 18090 (Plate HM-2). USAF issued a letter in 1990 recommending no further action and the determination was finalized as part of the Record of Decision in 1996. Former monitoring well MAFB-27C was located downgradient from the dry wells and exhibited no detections of hazardous materials when abandoned in 1998, although historically the well exhibited low-level detections of methylene chloride, and oil/grease. A soil boring was advanced to a depth of 155 feet immediately adjacent to the dry wells in 1995. Soil samples exhibited detections of methylene chloride and diesel to a depth of 67 feet. A groundwater sample was collected from 150 feet and no constituents were reportedly detected above the reporting limits by the mobile laboratory. The septic tank abandonment letter issued in 2000 states that there is no significant risk to groundwater. During a recent stakeholder meeting, a representative from USAF reported that they are not aware of any historic industrial activities within the weapons storage area (WP-17) that would have generated hazardous waste.

In addition to the above described RECs, an unrecorded AOC was discovered during the Phase I ESA site reconnaissance, which consists of scrap metal debris mixed with soil (former exercise area) located east of the Mather golf course (ENGEO 2012). (Plate HM-2). No geophysical surveys have been performed for this portion of the property. The Phase I ESA recommends excavating test pits to delineate the extent of the buried debris and developing a contingency plan for managing undocumented debris and/or contamination that may potentially be uncovered during grading operations.

Asbestos-Containing Materials

Asbestos is a naturally occurring mineral that can be hazardous to human health if it becomes airborne. Some of the diseases associated with asbestos exposure include lung cancer, mesothelioma, and asbestosis. Asbestos was previously used and stored at Mather Field. A major base-wide asbestos survey was completed in 1990; results of the survey indicated that asbestos was prevalent in buildings within Mather Field. Asbestos was found in various types of uses including but not limited to piping insulation, floor tiles, and ceiling material (USAF 1994). Asbestos was managed consistent with USAF policy for closing bases, which includes removal or control if it is in a location and condition that constitutes a health hazard or is otherwise required by law (e.g. schools). The Mather South Project site contains several bunker buildings that were used for weapons storage and would be demolished. The buildings were likely constructed before the time when asbestos regulations were enacted and are assumed to contain asbestos (Plate HM-2).

LEAD BASED PAINT

Human exposure to lead can cause severe adverse health effects, especially in children. Although no comprehensive lead-based paint surveys have been conducted on the bunker buildings that are located within the Mather South Project boundary (Plate HM-2), it is assumed that lead-based paint is likely present on or within structures that were constructed before or during 1978 when EPA banned lead-based paint.

GROUNDWATER CONTAMINATION

The Mather South Plan Area is located within an area where there are known regional groundwater impacts associated with offsite portions of the Mather AFB and the Aerojet facility. It is not expected that sites located within the Plan Area are responsible for contamination. The magnitude of regional groundwater contamination is discussed further in Chapter 18 Water Supply of this EIR.

REGULATORY SETTING

FEDERAL

Federal agencies that regulate hazardous materials include EPA, the U.S. Occupational Safety and Health Administration (OSHA), the U.S. Department of Transportation, and the National Institute of Health. The following federal laws and guidelines govern hazardous materials.

- Federal Water Pollution Control Act;
- Clean Air Act;
- Clean Water Act;
- Occupational Safety and Health Act;
- Federal Insecticide, Fungicide, and Rodenticide Act;
- Comprehensive Environmental Response, Compensation, and Liability Act;
- Guidelines for Carcinogens and Biohazards;
- Superfund Amendments and Reauthorization Act Title III;
- Resource Conservation and Recovery Act;
- Toxic Substances Control Act;
- Safe Drinking Water Act;
- Hazardous Materials Transportation Act; and
- Emergency Planning and Community Right-to-Know Act.

Together, these regulations serve as guiding principles governing the storage, use, and transportation of hazardous and other regulated materials from their time of origin to their ultimate disposal. The cleanup and remediation of environmental contamination resulting from the accidental or unlawful release of these materials and substances are also governed by these regulations. Solid wastes that are not classifiable as hazardous are regulated under

RCRA and pollution prevention is also regulated under the Clean Air, Clean Water, and Safe Drinking Water acts.

STATE

The Cal EPA and the State Water Resources Control Board (SWRCB) establish rules governing the use of hazardous materials and the management of hazardous waste. Applicable state laws include the following:

- Public Safety/Fire Regulations/Building Codes,
- Hazardous Substances Information and Training Act,
- Air Toxics Hot Spots and Emissions Inventory Law,
- Underground Storage of Hazardous Substances Act, and
- Porter Cologne Water Quality Control Act.

Within Cal EPA, DTSC has primary regulatory responsibility, with delegation of enforcement to local jurisdictions that enter into agreements with the state agency for the management of hazardous materials and the generation, transport and disposal of hazardous waste. Cal EPA's Office of Environmental Health Hazard Assessment is involved in the evaluation of risks to public health and the environment posed by hazardous materials and environmental contamination. Cal EPA delegates much of the permitting, inspection, and enforcement responsibility for hazardous materials, hazardous waste, ASTs, USTs, and other related state programs to local governments under the Certified Unified Program Agency (CUPA) program.

CALIFORNIA DEPARTMENT OF EDUCATION

Education Code sections 17071.13, 17072.13, 17210, 17210.1, 17213.1-3, and 17268 became effective January 1, 2000. Together they established requirements for assessments and approvals regarding toxic and hazardous materials that school districts must follow before receiving final site approval from the California Department of Education (CDE) and funds under the School Facilities Program. The school district may submit materials documenting compliance with the toxic and hazardous substances requirements before submitting the balance of the site approval package documents required by CDE. A local educational agency (LEA) may elect not to pursue a proposed site at any time during the process.

A summary of the requirements are as follows:

- Current and historic uses on and near a proposed school site shall be investigated by a qualified consultant who prepares a Phase I Environmental Site Assessment (paper/database, site review, and interview investigation) conducted according to the American Society of Testing and Materials standards (ASTM E-1527-2000).
- If the Phase I review concludes that no further investigation is required, two copies of the Phase I assessment and payment for review by DTSC shall be submitted to the Department. CDE will transmit the payment and the Phase I assessment to DTSC for its review and determination. If DTSC concurs with the Phase I assessment, it will issue a determination letter stating that "no action" is required related to hazardous materials.
- If the Phase I review concludes that further investigation is needed or DTSC requires it, the LEA shall enter into an agreement with DTSC and hire a qualified consultant to

complete a preliminary endangerment assessment (PEA) under DTSC oversight and review. The PEA includes the sampling of soils and risk assessment to determine whether a release of hazardous material has occurred, there is a threat of release, or a naturally occurring hazardous material poses a significant health risk. The LEA will then submit the PEA to DTSC. If no hazardous materials are identified, or if they do not pose a significant health risk, DTSC will approve the PEA and issue a determination letter stating that "no further action" is required.

- If required by DTSC because of health risks associated with hazardous materials are identified in the approved PEA, the LEA shall prepare and implement a Response Action (cleanup, removal, or remediation of hazardous materials) under DTSC oversight and approval. DTSC will issue a certification letter when the Response Action is completed. When a Response Action is required for a site, the LEA must obtain a Contingent Site Approval from CDE before the acquisition and implementation of the Response Action to ensure that the site meets all other requirements for CDE approval.

LOCAL REGULATIONS

SACRAMENTO COUNTY ENVIRONMENTAL MANAGEMENT DEPARTMENT

The Sacramento County Environmental Management Department (EMD) is both the local environmental health regulatory agency and the County CUPA. The County EMD is also the Local Oversight Program for UST site investigation, cleanup, and closure, and the local enforcement agency for landfills. The Central Valley Regional Water Quality Control Board also has jurisdiction over the management of surface and groundwater contamination such as the cleanup of spill sites. Finally, the Sacramento Metropolitan Air Quality Management District (SMAQMD) is involved in the assessment of health and environmental hazards associated with both "criteria" and toxic (or hazardous) air pollutants.

SACRAMENTO COUNTY GENERAL PLAN

The Sacramento County General Plan policies that may be relevant to the project include the following:

HM-4. The handling, storage, and transport of hazardous materials shall be conducted in a manner so as not to compromise public health and safety standards.

HM-8. Continue the effort to prevent ground water and soil contamination.

HM–9. Continue the effort to prevent surface water contamination.

CORDOVA COMMUNITY PLAN

The Cordova Community Plan does not contain specific policies related to hazards.

MATHER FIELD SPECIFIC PLAN

The following policies related to hazardous materials and wastes would apply to the Mather South Project:

M-EM-10. The County shall work with the Air Force and regulatory agencies to expedite hazardous materials remediation.

M-EM-11. The County shall work with the Air Force to prioritize areas for remediation based on planned reuse activities.

M-EM-12. Ensure that sites are remediated to levels consistent with planned land uses.

Mather Field Special Planning Area Ordinance

The Mather Field Special Planning Area (SPA) Ordinance includes performance standards related to hazardous materials. The following performance standards must be met by all public and private development projects and leases/or sales of existing buildings, facilities and/or property owners:

1. If the potential for previously unidentified contamination is suspected at proposed development sites, or if unidentified contamination is encountered as an unforeseen condition, sampling shall be conducted by qualified personnel, in accordance with all applicable regulations to determine the constituent levels and the extent of the contamination. If contamination is identified, remediation and disposal procedures shall be undertaken by qualified personnel in accordance with all applicable regulations, and in coordination with all applicable regulatory agencies. If remediation is deemed infeasible, construction shall be conducted by trained personnel utilizing proper personal protective equipment and practices and procedures to mitigate any health hazards.

2. If asbestos fibers are suspected or identified in soils, buried asbestos-cement pipe, or existing building materials at proposed development sites, then additional sampling shall be performed before any construction activities to identify asbestos-containing materials that may be contained in building materials or obscured behind walls, above ceilings, and beneath floors. Any necessary asbestos abatement procedures or demolition activities affecting asbestos-containing material shall be performed by a licensed asbestos abatement contractor with properly trained personnel in accordance with all federal, state, and local regulations.

3. If lead concentrations above levels at which abatement is recommended are suspected or identified in existing soil or structures at proposed development sites, additional testing shall be performed as necessary to identify lead concentrations. Any necessary lead abatement procedures shall be performed with properly trained personnel in accordance with all applicable federal, state, and local regulations.

4. For property to be leased, transferred, or conveyed to the County by the USAF, the County of Sacramento shall require that future development at Mather Field comply with any limitations or restrictions pertaining to hazardous substance remediation identified in any lease, transfer, or conveyance agreement. These agreements are currently under negotiation with EPA, Cal EPA, USAF, and the County.

5. Individual site plans for each development within Mather Field shall be coordinated with locations of groundwater extraction wells, air stripping towers, and other groundwater treatment facilities.

6. The County shall coordinate with USAF, EPA, Cal EPA, and other involved agencies, as appropriate, to assure that construction activities do not interfere with any adjacent

and/or on-site remediation activities or unduly delay either project development or site remediation.

SIGNIFICANCE CRITERIA

Pursuant to the CEQA Guidelines, the County of Sacramento considers impacts to hazards and hazardous materials to be significant if a project would:

1. Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.

2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

3. Result in hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school;

4. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would create a significant hazard to the public or the environment.

5. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.

6. Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

METHODOLOGY

The analysis in this chapter relies on information presented in the following study prepared for the project. Additionally, public documentation from agencies including the DOD, USAF, DTSC, and SWRCB was reviewed as referenced throughout this chapter.

- Phase I Environmental Site Assessment, October 2012 prepared by ENGEO (Appendix HAZ-1)

IMPACTS AND ANALYSIS

2016 MATHER FIELD PROJECT EIR DETERMINATION

The Mather Field Project EIR evaluated impacts related to hazardous materials from implementation of the Mather Field Project which consisted of a realignment of Zinfandel Drive, creation of the Mather Preserve and the establishment of an Urban Development Area designation for the Mather South Plan Area.

The EIR concluded that the Mather Field Project would result in less than significant impacts with adherence to existing regulations and standards, and implementation of Mitigation Measures HM-1 and HM-2 (listed below). The discussion of impacts related to hazardous materials and wastes can be found on pages 9-10 through 9-23 of the Mather Field Project EIR and is hereby incorporated by reference.

ADOPTED MATHER FIELD PROJECT EIR MITIGATION MEASURES

HM-1: HAZARDOUS MATERIALS CONTINGENCY PLAN: All public and private development proposals within Mather Field shall include a detailed Hazardous Materials Contingency Plan to address contaminants or other hazardous materials that may be encountered during construction activities and in the event that construction activities (including redevelopment proposals) uncover unforeseen contamination or hazardous materials including radioactive waste at Site RW-016, munitions within the 3,000 foot safety zone of Site XU-403, unexploded ordinance at Site OT-69/XE-404 and contaminants related to landfills. The plan should include steps to contain any contamination, consultation with regulatory agencies and a work plan to evaluate and characterize and remediate any contamination. In addition, all performance standards included in the Mather Feld Special Planning Area Ordinance related to hazardous materials shall be incorporated into the Hazardous Materials Plan.

HM-2: REMEDIATION SYSTEMS: Before any public or private development or ground disturbing activities within Mather Field, project proponents shall coordinate with USAF, EPA, Cal EPA, and other involved agencies, as appropriate, to assure that construction activities do not disturb the remedial system components in place including groundwater monitoring, extraction, and injection wells, and soil vapor extraction and bioventing facilities.

MATHER SOUTH PROJECT IMPACTS DETERMINATION

IMPACT: ACCIDENTAL RELEASE DUE TO ROUTINE TRANSPORT, USE, OR DISPOSAL OF HAZARDOUS MATERIALS

Construction activities would occur within the Mather South Plan Area and would require the use of standard hazardous materials such as fuels, oils, lubricants, glues, paints, paint thinners, soaps, bleach, and solvents. These are common household and commercial materials routinely used by both businesses and members of the public. The materials would only pose a hazard if they are improperly used, stored, or transported either through upset conditions (e.g., a large spill or an explosion) or mishandling. All persons involved in the handling of these hazardous materials are required to use, store, and transport hazardous materials in compliance with local, state, and federal regulations during project construction and operational activities.

In addition to hazardous materials used during construction, operation of commercial, retail, civic and residential uses within the Plan Area would result in the use, transport, and storage of materials that are considered hazardous. Increased transport would occur in response to commercial demand for products and services within the Plan Area, and both residential and non-residential areas would use and store materials considered to be hazardous. Household hazardous materials include cleaners, pesticides, paints, lubricants, and similar items.

Regulations pertaining to transport of hazardous materials are codified in 49 CFR 171 – 180. These regulations provide definitions for hazardous materials, including a “hazard class” that

requires the listing of each material type according to its major property (e.g. flammable solid). There are separate requirements for each stage of the transport process, including preparation of shipping paperwork, the appropriate labeling of shipping containers, the requirements specific to the shippers of the material, and the requirements specific to the carriers of the material. There are also categories of materials and packages that are prohibited from being shipped.

Specifications for storage on a construction site are contained in various regulations and codes, including the California Code of Regulations, the Uniform Fire Code, and the California Health and Safety Code. Some of the relevant standards are:

- all reserve fuel supplies and hazardous materials must be stored within the confines of a designated construction area;
- equipment refueling and maintenance must take place only within the staging area;
- construction vehicles shall be inspected daily for leaks; and
- a spill prevention, control, and countermeasure plan shall be prepared and implemented.

In addition to the above regulations pertinent to storage and spill prevention requirements, workplace rules administered by the California Occupational Safety and Health Administration (OSHA, enacted by the California Code of Regulations) ensure that the hazards of all chemicals are evaluated and that information concerning chemical hazards is transmitted to employees. This is accomplished by:

- container labeling and other warnings,
- Material Safety Data Sheets (MSDS), and
- employee training.

All regulations and codes must be implemented and adhered to, as applicable, and are monitored by the agencies described above. Compliance would reduce the potential for accidental release of hazardous materials during construction and operation of the Mather South Project. As a result, it would reduce the risk of exposure of construction workers and employees to accidental release of hazardous materials, as well as the demand for incident emergency response.

The Environmental Compliance Division of the Environmental Management Department (EMD) has been designated by Cal EPA as CUPA for Sacramento County. The role of the CUPA is to implement six statewide environmental programs:

- underground storage of hazardous substances,
- aboveground storage tanks (spill prevention and countermeasures),
- hazardous materials business plan requirements,
- hazardous waste generator requirements,
- California accidental release prevention program, and
- uniform fire code hazardous materials management plans.

Implementing these programs includes the permitting and inspection of regulated facilities, providing educational guidance and notice of changing requirements, investigations of complaints regarding spills or unauthorized releases, and administrative enforcement actions levied against facilities that have violated applicable laws and regulations. Compliance with the above requirements, as monitored and enforced by EMD, reduces the risk of exposure of the general public to accidental release of hazardous materials.

For household materials use, all products offered for sale are required to be labeled appropriately to ensure safe use, storage, and disposal, and residents are required to use these materials consistent with labeling requirements. Laws regarding the safe disposal of hazardous materials apply to residents, just as they apply to businesses. The Sacramento County Department of Waste Management and Recycling operates multiple household hazardous waste drop-off locations, and also transports garbage collected from bins to the North Area Recovery Station, where household hazardous waste is separated for proper disposal.

Because construction and operation of the Mather South Project would implement and comply with federal, state, and local hazardous materials regulations and codes monitored by the state (e.g., OSHA, DTSC, California Highway Patrol, California Department of Transportation) and/or local jurisdictions (e.g., Sacramento Metro Fire and Sacramento County EMD), impacts related to creation of significant hazards for construction workers, employees, and the general public within the Plan Area through routine transport, use, and disposal of hazardous materials would be unlikely. Therefore, this impact would be ***less than significant***.

MITIGATION MEASURES

None required.

IMPACT: CREATE A SIGNIFICANT HAZARD THROUGH THE REASONABLY FORESEEABLE UPSET AND ACCIDENT CONDITIONS INVOLVING THE RELEASE OF HAZARDOUS MATERIALS INTO THE ENVIRONMENT

Construction associated with the Mather South Project would involve site grading, excavation, trenching, and demolition and construction of buildings. All activities have the potential to release hazardous materials into the environment because of the routine use of hazardous materials during these activities including fuel, lubricants, and solvents.

The Mather South Project site contains bunker buildings associated with a former weapons storage area that were constructed in the early part of the century and that would be demolished during the construction phase. Demolition of structures constructed before 1989 can pose an exposure risk to workers from asbestos-containing material, and demolition of structures constructed before 1978 can pose an exposure risk of workers to lead-based paint if the material and/or paint were to become accidentally ingested or inhaled. It is also possible for lead to be deposited onto exposed soil, tracked into homes, and ingested by children.

When a project applicant applies for a demolition or renovation permit through the County Building Department, the applicant would be required to get a permit from the local air district (SMAQMD). As part of the permit process, the applicant would need to show compliance with federal regulations and Air District Rule 902, which requires a survey for asbestos before demolition. Any asbestos found would require abatement. Exposure to and containment of lead is regulated by Cal EPA's DTSC and the California Code of Regulations Title 8 and Title

22. Thus, procedures are already in place requiring applicants to survey for and abate any asbestos. Additionally, workers are required to be informed about the potential exposure to lead and employers must have a Lead Compliance Plan in place that provides a protocol for worker safety, transport, and disposal of the hazardous material.

The Mather South Project would result in the construction of new residential, commercial, and civic uses on land that was previously used by the military and parts of which have been described as areas of environmental concern based upon the presence of contaminants in the underlying soils and groundwater. Although most of these sites have been remediated, see "Environmental Setting" above, excavation and construction activities at or near these areas could potentially expose construction workers and the general public to previously unidentified soil contamination. Furthermore, although the USAF and regulatory agencies have concluded no further action is required at site OT-69/XE-404, munitions detection technology and removal methods are not 100 percent reliable, and the potential for a chance encounter with munitions and explosives of concern (MEC) on the surface or in the subsurface of XE-404 cannot be completely eliminated. In addition, the potential exists for small, individual objects (e.g., flares, projectiles, etc.) to remain at the site below the detection depths of the geophysical instruments used to conduct the investigations, particularly in areas that were covered by fill after open burning and open detonation (OB/OD) operations were initiated. Therefore, future construction activities could result in the exposure of construction workers and the general public to unexploded ordnances that could be hazardous, or to other unidentified hazardous materials in soils throughout the Plan Area. This would be a potentially significant impact. However, the Mather Field Project EIR included Mitigation Measure HM-1 which requires development of a Hazardous Materials Contingency Plan to address hazardous materials that may be encountered during construction activities. Additional mitigation measures specific to the Mather South Project are included below. With implementation of these mitigation measures, the impact would be reduced to **less than significant with mitigation**.

MITIGATION MEASURES:

HM-1. **Worker Health and Safety.** Each contractor whose employees may be potentially exposed to contaminants known to be present in site soil, soil gas, or groundwater shall develop and implement their own contractor-specific and site-specific Health and Safety Plan (HASP). The HASP shall establish the minimum requirements, policies, and procedures adequate to protect site workers, the public, and the environment from identified site environmental hazards. The HASP shall be prepared in accordance with 29 CFR 1910.120 OSHA, Hazardous Waste Operations and Emergency Response (HAZWOPER), and California Code of Regulations, Title 8, Section 5192.

Consistent with the project's finalized Hazardous Materials Contingency Plan, a template HASP shall be provided to each contractor. The template HASP establishes guidelines and general requirements that shall be adopted by contractors for all workers to follow and attempts to identify all potential hazards at the Plan Area. Each contractor shall be provided procedures to follow in the event previously unidentified environmental issues, such as suspected contamination or an unknown tank are encountered during site development activities. The template HASP serves as a general template for all contractors performing intrusive work which may expose workers to impacted soils, soil vapor, or groundwater within the Plan Area during construction activities.

Each contractor who will be encountering groundwater or potentially contaminated soil or structures shall be required to prepare their own HASP that shall comply with 29 CFR 1910.120 OSHA HAZWOPER and the contractor's own health and safety SOPs. Contractors are responsible for communicating the hazards associated with work at the Plan Area and providing the minimum health and safety requirements as outlined in the contractor HASP. Each contractor's HASP shall include an independent evaluation of the Plan Area's hazards and mitigative actions before the commencement of construction activities.

HM-2. **Soil Sampling Before Ground Disturbing Activities.** Before construction activities begin within the Mather South Plan Area, targeted surface soil sampling shall be conducted to evaluate concentrations of chemicals of concern in surface soil. Specific activities to be conducted include the following:

- Shallow soil (1-3 feet) shall be excavated and tested for contamination associated with the former diesel USTs at Building 18015 following demolition of the building, as well as at the two proposed school sites before any new building construction. If any contamination is found, the soil shall be removed and disposed of at a permitted hazardous waste disposal facility. Further evaluation of potential vapor intrusion concerns shall be conducted for these areas subsequent to the additional soil remediation and before residential land use.
- Excavation of test pits at the former exercise area (ENGEO AOC) to delineate the extent of the buried debris before construction or excavation associated with the Mather South Project shall be conducted. In advance of future site development, coordination with the USAF to develop a contingency plan for managing undocumented debris and/or contamination that may potentially be uncovered during grading operations shall occur. No development within 50 feet of ENGEO AOC shall occur until any identified contamination has been remediated.

HM-3. **Contaminated Soil Contingency Plan.** Before construction, the applicant shall submit a Contaminated Soil Contingency Plan to the County for review and approval. The plan shall include practices that are consistent with the California Title 8 and Occupational Safety and Health Administration regulations and shall outline steps that would be implemented if contaminated soils are encountered. The objective of the plan shall be to minimize risk to the public and to the environment resulting from exposure to and disturbance of contaminated soils. At a minimum, the plan shall include procedures for the following steps:

- identifying potentially impacted soil,
- establishing a no-work zone for potentially contaminated areas,
- assessing potentially impacted soil,
- notifying appropriate agencies,
- cleanup procedures,
- impacted soil storage,

- verification sampling, and
- impacted soil characterization and disposal.

During construction, appropriately trained personnel, under the supervision of a California licensed registered geologist or professional engineer, shall be present to monitor soil conditions during all earthmoving activities at specific areas of risk, which include: the former diesel USTs at Building 18015, the former exercise area (ENGEO AOC), OT-69/XE-404 (detonation and burn area), and OT-86 (small arms firing range). If potentially contaminated soils are encountered during construction, the applicant shall implement the Contaminated Soil Contingency Plan to assess the soils and to determine appropriate procedures based on the nature of the contamination, which may include avoidance or collection and analysis to determine appropriate disposal or treatment options.

HM-4. **Hazardous Materials Notification.** Within the Mather South Plan Area, there is the potential for MEC or munitions debris to be encountered on the surface or subsurface of the investigation area, particularly during ground-disturbing activities at greater depths. The Sacramento County Office of Economic Development shall notify future landowners of the following: the former military use of the Mather South Plan Area, the completed munitions response actions at the site, and the appropriate steps to take in the event that suspected munitions-related items are discovered. This information shall be provided to future landowners through environmental disclosure reports before final sale Specific actions include the following:

- The owner shall be notified of the existence of MRS XE-404 and be provided with a description of the site, the investigations and munitions responses completed at the site and their findings, and the process used to determine that the degree of munitions removal is adequately protective.
- The owner shall be further notified that the potential exists for ordnance and ordnance-related materials to remain within the site because detection and removal methods are not 100 percent effective.
- The owner shall be notified that all future ground-disturbing activities shall be exercised with caution.
- The owner shall be advised that in the event that any suspected military munitions item, or a fragment thereof, is found at the site, the item shall not be touched or disturbed further. The local police or fire department and USAF should be contacted immediately to report the finding and engage in the removal of the debris from the site.

IMPACT: RESULT IN HAZARDOUS EMISSIONS OR HANDLE HAZARDOUS OR ACUTELY HAZARDOUS MATERIALS, SUBSTANCES, OR WASTE WITHIN ONE-QUARTER OF A MILE WITHIN AN EXISTING OR PROPOSED SCHOOL

There are no existing schools within 0.25 mile of the Mather South Plan Area. However, two new schools are included within the Mather South Project. Both school sites would be located within 0.25 mile of identified hazardous waste cleanup sites within the Plan Area. One of the proposed school sites would be located approximately 110 feet from OT-69, the hazardous materials site that was a former detonation and burn area. As discussed under the previous

impact, although USAF and regulatory agencies have concluded no further action is required at site OT-69/XE-404, there is a potential to encounter MEC on the surface or in the subsurface of the area. In addition, the potential exists for small, individual objects (e.g., flares, projectiles, etc.) to remain at the site, particularly in areas that were covered by fill after OB/OD operations were initiated. Given the former uses of the site, there is the potential to encounter previously unidentified hazardous material sites in the Plan Area. This impact would be potentially significant.

Pursuant to Education Code sections 17071.13, 17072.13, 17210, 17210.1, 17213.1-3, and 17268 (described above under Regulatory Setting), a qualified consultant would be hired to complete a PEA under DTSC oversight and review. The PEA includes the sampling of soils and risk assessment to determine whether a release of hazardous material has occurred, there is a threat of release, or a naturally occurring hazardous material poses a significant health risk. If no hazardous materials are identified, or if they do not pose a significant health risk, DTSC will approve the PEA and issue a determination letter stating that “no further action” is required. If required by DTSC because of health risks associated with hazardous materials are identified in the approved PEA, the LEA would prepare and implement a Response Action (cleanup, removal, or remediation of hazardous materials) under DTSC oversight and approval.

Furthermore, risks associated with potential hazardous materials and ordnance within the Plan Area are greatest during construction activities when active ground disturbance, such as grading and excavation, is occurring. Implementation of Mitigation Measures HM-1 through HM-4 as well as all performance standards included in the Mather Field SPA Ordinance related to hazardous materials before and during construction would be required and have been included as mitigation for the project (see Impact HM-2 above). This would result in the development of a hazardous materials contingency plan, soil sampling conducted by qualified personnel, and remediation and disposal in accordance with all applicable regulations and regulatory agencies should hazardous materials be encountered. Therefore, it is unlikely that hazardous materials would remain onsite and pose a significant risk to schools onsite once they are constructed.

Once operational, no additional ground disturbing activities would occur at either of the school sites. With adherence to Education Code and construction-period mitigation measures that include sampling and remediation should hazardous materials be encountered, impacts to schools would be **less than significant with mitigation**.

MITIGATION MEASURES

HM1 through HM4 (refer to Impact HM-2) and Mather Field SPA Ordinance Performance Standards (refer to the Regulatory Setting) related to Hazardous Materials.

IMPACT: BE LOCATED ON A SITE WHICH IS INCLUDED ON A LIST OF HAZARDOUS MATERIALS SITES COMPILED PURSUANT TO GOVERNMENT CODE SECTION 65962.5 AND, AS A RESULT, WOULD CREATE A SIGNIFICANT HAZARD TO THE PUBLIC OR THE ENVIRONMENT

Mather AFB, including the Mather South Plan Area, is a federal superfund site. However, the Phase I conducted for the Mather South Plan Area reported RECs based on review of historic record, property records, and environment records, including the Cortese List. As previously discussed, these previously recorded sites have been remediated. However, excavation and construction activities at or near these areas could potentially expose construction workers and

the general public to previously unidentified soil and/or groundwater contamination. This would be a potentially significant impact.

Implementation of Mitigation Measures from the Mather Field Project EIR, Mitigation Measures HM-1 through HM-4, as well as all performance standards included in the Mather Field SPA Ordinance related to hazardous materials, before and during construction would be required and have been included as mitigation for the project (see Impact HM-2 above). This would result in the development of a hazardous materials contingency plan, soil sampling conducted by qualified personnel, and remediation and disposal in accordance with all applicable regulations and regulatory agencies should hazardous materials be encountered. Therefore, it is unlikely that hazardous materials would remain onsite and pose a significant risk to the public or environment.

Given that all known sites of contamination have been remediated, and mitigation measures would be implemented that include sampling and remediation should unforeseen hazardous materials be encountered, impacts would be **less than significant with mitigation**.

MITIGATION MEASURES

HM1 through HM4 (refer to Impact HM-2) and Mather Field SPA Ordinance Performance Standards (refer to the Regulatory Setting) related to Hazardous Materials.

IMPACT: IMPAIR IMPLEMENTATION OF AN EMERGENCY RESPONSE PLAN OR INTERFERE WITH AN ADOPTED EMERGENCY RESPONSE PLAN

Emergency response plans are maintained at the federal, state, and local level for all types of disasters, including human-made and natural. Emergency response plans include elements to maintain continuity of government, emergency functions of governmental agencies, mobilization, and application of resources, mutual aid, and public information. The Sacramento County Office of Emergency Services (SacOES) has the primary responsibility for preparedness and response activities and addresses disasters and emergency situations within Sacramento County. SacOES is responsible for alerting and notifying appropriate agencies when disaster strikes; coordinating all agencies that respond; ensuring resources are available and mobilized in times of disaster; developing plans and procedures in response to and recovery from disasters; and developing and providing preparedness materials for the public.

SacOES maintains several county-wide emergency plans as part of its comprehensive emergency management program to ensure the County and its local jurisdictions are ready to respond to a variety of threats and hazards impacting the area. These plans are consistent with the National Incident Management System and California's Standardized Emergency Management System and coordinated with state and federal plans.

The Mather South Project would not interfere with any of the county-wide emergency plans, including the Emergency Operations Plan or the Local Hazard Mitigation Plan because both plans develop goals and objectives for SacOES related to emergency planning and large-scale natural or man-made disasters. These include mitigating hazards, meeting basic human needs, addressing the needs of people with disabilities and access and functional needs, restoring essential services, and supporting community and economic recovery. The Mather South Project would not interfere with meeting these goals, and may provide a benefit in the

event of an emergency by providing additional space for housing displaced residents. Thus, there would be **no impact** related to implementation of emergency response plans.

IMPACT: EXPOSE PEOPLE OR STRUCTURES TO A SIGNIFICANT RISK OF LOSS, INJURY, OR DEATH INVOLVING WILDLAND FIRES, INCLUDING WHERE WILDLANDS ARE ADJACENT TO URBANIZED AREAS OR WHERE RESIDENCES ARE INTERMIXED WITH WILDLANDS

The project site is in a non-very high fire hazard severity zone (FHSZ) within the Sacramento County, as mapped by Sacramento Metropolitan Fire District (Metro Fire) and the California Department of Forestry and Fire Protection (CAL FIRE 2008). As required by Policy SA-23 in the Sacramento County General Plan, plans for the facility would be provided to Metro Fire Department for review and comment regarding: adequacy of water supply; site design for fire department access into and around structures; ability for a safe and efficient fire department response; traffic flow and ingress/egress for residents and emergency vehicles; site-specific built-in fire protection; and potential impacts to emergency services and fire department response. Because the Plan Area is not in a high FHSZ, and the Metro Fire Department would be given an opportunity to provide comments on the project plans, this impact would be **less than significant**.

MITIGATION MEASURES

None required.

12 HYDROLOGY, DRAINAGE, AND WATER QUALITY

INTRODUCTION

The Mather Field Project EIR (2016) evaluated the Mather South Plan Area (Plan Area) at the plan-level and that analysis is hereby incorporated by reference and summarized below where appropriate. This chapter describes the regulatory and environmental setting for hydrology, drainage, and water quality in the Plan Area, identifies and analyzes impacts related to these resources from implementation of the Mather South Project at a project-level, and if necessary, recommends mitigation measures to reduce or eliminate significant impacts. Groundwater is discussed in Chapter 18, Water Supply, of this EIR.

During the Notice of Preparation (NOP) scoping process, some commenters raised concerns about proximity to Morrison Creek, compliance with Title 23, Section 7, and infrastructure near floodplains. A copy of the NOP and comment letters received in response to the NOP are included in Appendix PD-2 of this Mather South Project Draft EIR.

ENVIRONMENTAL SETTING

The Mather South Plan Area is in the eastern portion of the County of Sacramento. The Plan Area consists of several contiguous parcels that are bordered by Mather Golf Course and Mather Lake on the north, Folsom South Canal and Sunrise Boulevard on the east, on the west by Zinfandel Drive, Mather Preserve, and the Independence at Mather community, and on the south by Kiefer Boulevard.

A significant portion of the approximately 848-acre site consists of open space grasslands, with various watershed and wetland features scattered throughout. There are several abandoned storage bunkers and a small private hobby model aeronautics area which would be demolished as part of the project.

EXISTING WATERSHEDS

The site is described as flat to gently rolling terrain from a high of approximately 170 feet to a low of approximately 135 feet above mean sea level. The highest areas are in the northeastern boundary along the Folsom South Canal. The lowest area starts along Morrison Creek, from the eastern boundary of the site to the southwestern boundary of the site (near Eagles Nest Road and Kiefer). The Morrison Creek watershed includes Morrison Creek and covers approximately 192 square miles and has nine tributaries. Morrison Creek starts near the intersection of Douglas Road and Mather Boulevard and flows southwest and eventually drains into the Beach Stone Lakes area west of Interstate 5, eventually draining into the Sacramento River.

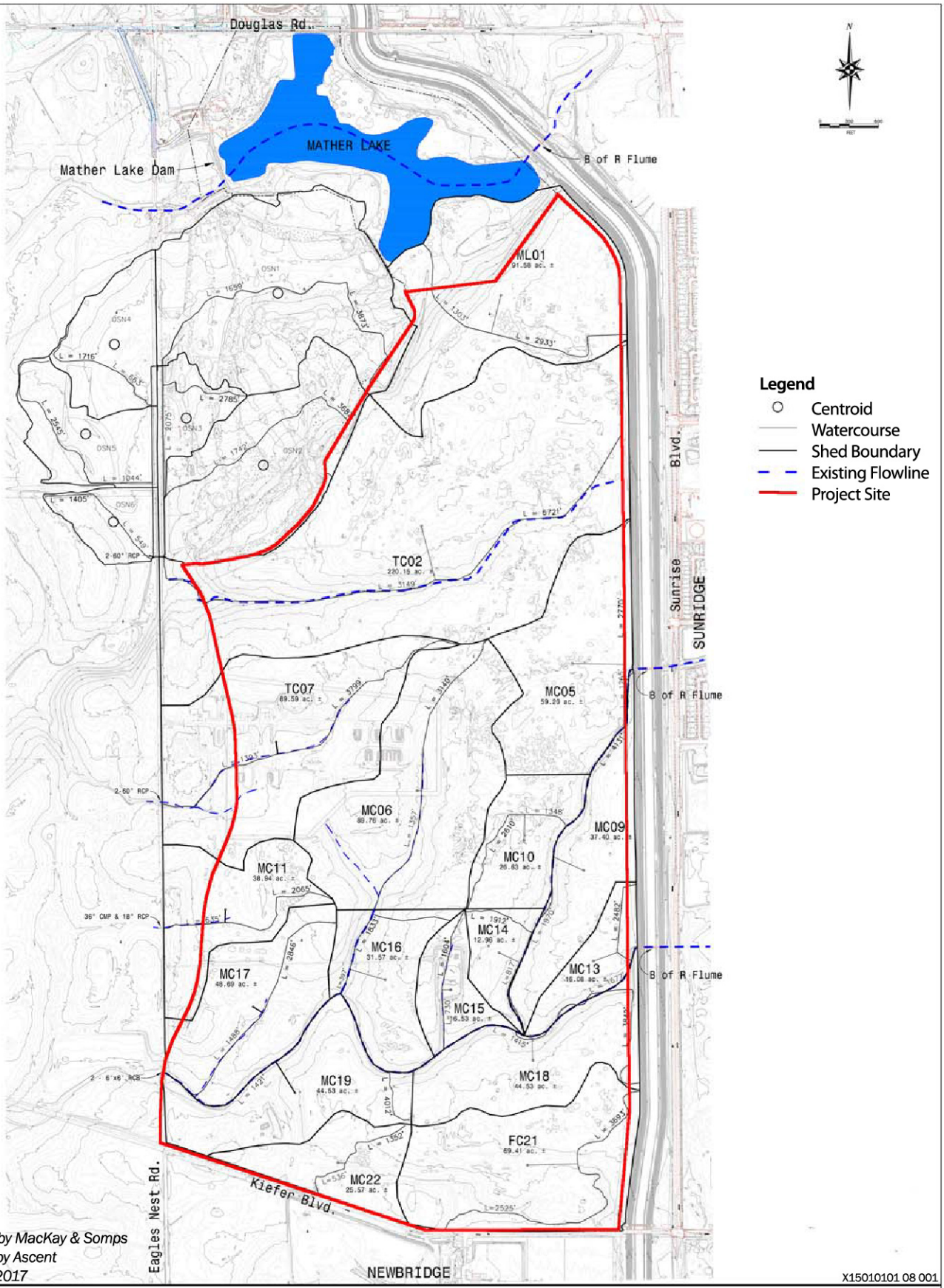
A small portion of the Plan Area in the northern most quadrant drains to Mather Lake. Mather Lake, which is located outside the Plan Area, drains to the upper reach of Morrison Creek. The north central portion of the Plan Area drains westerly to a tributary of Todd Creek. The south-central portions of the Plan Area sheet flow southerly to Morrison Creek which traverses the site from east to west.

The southernmost portions of the Plan Area drain southerly towards Kiefer Boulevard. Part of this area is tributary to Frye Creek and has been accounted for as a part of the proposed NewBridge Specific Plan project immediately south of Kiefer Boulevard. Based on the topographic information, the Mather South Plan Area consists of seventeen (17) onsite existing drainage shed areas. One (1) onsite shed areas, located along the southern perimeter of the site contributes to Frye Creek, South of Kiefer Blvd, as a part of the NewBridge Specific Plan. Plate HY-1 defines the approximate boundaries for each of the existing drainage sheds. Each of the sheds are labeled with a two-letter prefix to identify which major creek tributary the shed areas drain to, and are as follows: FC – Frye Creek, MC – Morrison Creek, ML – Mather Lake, and TC-Todd Creek.

All sheds (except shed FC21 draining southerly towards Kiefer Boulevard) are tributary to Morrison Creek at a point of confluence farther downstream of the Plan Area (near Westerly Drive and Excelsior Road) (MacKay & Somps 2017).

One or more shed areas from each of the above listed creeks impact the Plan Area. Each of these existing shed areas are briefly described as follows:

- Shed FC21. Southerly offsite runoff from this shed (approximately - 69.4± acres) exits the Plan Area near through an existing culvert under Kiefer Boulevard just west of the Sunrise Blvd. This shed then enters Frye Creek Tributary. Based on the Land Use Diagram (Plate PD-9), most of this shed area would be developed.
- Shed ML1. This shed (approximately 91.6± acres) is in the northeast corner of the site. Runoff from Shed ML1 enters Mather Lake tributary. Based on the Land Use Diagram (Plate PD-9), a portion of Shed ML1 is anticipated to be developed. This portion would shift from Mather Lake to the Todd Creek shed.
- Shed TC2. This shed (approximately 220.2± acres) is in the northern portion of the site. This shed exits the site through existing twin 60” culvert under Eagles Nest Road. This drainage shed is tributary to Todd Creek. Based on the Land Use Diagram (Plate PD-9), most of Shed TC2 is anticipated to be developed, leaving the Todd Creek Corridor largely undeveloped.
- Shed MC5. This shed, located immediately west of Folsom South Canal and immediately south of Shed TC2, contains approximately 59.2± acres. Tributary to this shed are developed (offsite) flows from the East side of Folsom Canal crossing. Runoff from Shed MC5 and existing offsite enters Morrison Creek. This shed then exits the site at the southwestern boundary of the Plan Area and continues downstream. Based on the Land Use Diagram (Plate PD-9), most of this shed area will be developed.



Source: Prepared by MacKay & Somps in 2017; adapted by Ascent Environmental in 2017

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Plate HY-1: Approximate Drainage Sheds

- Shed MC6. This shed (approximately 89.8± acres) drains through the center of the property. Shed MC6 drains into Shed MC16 and is inserted into the model to provide an in-stream compliance point for comparison with developed conditions flows. Based on the Land Use Diagram (Plate PD-9), a portion of Shed MC6 is anticipated to be developed, leaving the upper reaches if Morrison Creek undeveloped.
- Shed TC7. This shed (approximately 89.6± acres) drains through center of the property west to Eagles Nest Road and continues to Todd Creek. Based on the Land Use Diagram (Plate PD-9), approximately half of Shed TC7 would be developed.
- Shed MC9. This shed, located immediately west of Folsom South Canal and immediately south of Shed MC5, contains approximately 37.4± acres. Runoff from Shed MC9 enters Morrison Creek. This shed then exits the site at the southwestern boundary of the project and continues downstream. Based on the Land Use Diagram (Plate PD-9), the majority of Shed MC09 would be developed.
- Shed MC10. This shed, located immediately west of Folsom South Canal and immediately south of Shed MC5, contains approximately 26.6± acres. Runoff from Shed MC10 enters Morrison Creek. This shed then exits the site at the southwestern boundary of the project and continues downstream. Based on the Land Use Diagram (Plate PD-9), the majority of Shed MC10 would be developed.
- Shed MC13. This shed, located immediately east of Shed MC9 and contains approximately 16.1± acres. Runoff from Shed MC13 enters Morrison Creek. This shed then exits the site at the southwestern boundary of the project and continues downstream. Based on the Land Use Diagram (Plate PD-9), the majority of Shed MC13 would be developed.
- Shed MC14. This shed, located immediately west of Shed MC9 and contains approximately 13.0± acres. Runoff from Shed MC14 enters Morrison Creek. This shed then exits the site at the southwestern boundary of the project and continues downstream. Based on the Land Use Diagram (Plate PD-9), the majority of Shed MC14 would be developed.
- Shed MC15. This shed (approximately 16.5± acres) drains south near at the north edge of Morrison Creek. Shed MC15 drains from Shed MC6 and enters the north side of Morrison Creek. Based on the Land Use Diagram (Plate PD-9), the majority of Shed MC15 would be developed.
- Shed MC16. This shed (approximately 31.6± acres) drains south near at the north edge of Morrison Creek. Shed MC16 drains from Shed MC6 and enters the north side of Morrison Creek. Based on the Land Use Diagram (Plate PD-9), the majority of Shed MC16 would be developed.
- Shed MC18. This south eastern shed (approximately 44.5± acres) drains north into the south side of Morrison Creek at the eastern Boundary of Folsom South Canal. Based on the Land Use Diagram (Plate PD-9), the majority of Shed MC18 would be developed.

- Shed MC19. This south western shed (approximately 44.5± acres) drains north into the south side of Morrison Creek at the eastern Boundary of Folsom South Canal and is directly west of shed MC18. Based on the Land Use Diagram (Plate PD-9), the majority of Shed MC19 would be developed.
- Shed MC22. Southerly off-site runoff from this shed (approximately 25.6± acres) exits the Plan Area near the southwest corner of the site by breaching the existing surface of Kiefer Boulevard. This shed drains toward NewBridge Development and is conveyed directly though that project where it is discharged into its natural drainage course as is crosses Eagles Nest Road just south of Kiefer Blvd. Based on the Land Use Diagram (Plate PD-9), the majority of Shed MC22 would be developed.
- Shed MC11. This shed (approximately 38.9± acres) drains near the center of the property west to Eagles Nest Road and continues to reaches of Morrison Creek. Based on the Land Use Diagram (Plate PD-9), most of this shed area would remain largely undeveloped open space preserve, and a portion will be included in the right of way of Zinfandel Drive Extension.
- Shed MC17. This southwestern shed (approximately 48.7± acres) drains south of the property. This shed enters the north side of Morrison Creek at the western Boundary of Eagles Nest Road. Based on the Land Use Diagram (Plate PD-9), most of this shed area would remain largely undeveloped open space preserve, and a portion would be included in the right of way of Zinfandel Drive Extension.
- Shed SSP North. This shed is located immediately east of Folsom South Canal and crosses the canal by use of an existing flume. The shed is approximately 1.63 square miles in size. The shed is currently partially developed and includes detention basins to mitigate runoff. The runoff crossing Folsom South Canal is limited by the capacity of the existing flume (341 cubic feet per second [cfs]). This flow contributes to the northern branch of Morrison Creek.
- Shed SSP South. This shed is located immediately east of Folsom South Canal and crosses the canal by use of an existing flume. The shed is approximately 3.25 square miles in size. The shed is currently partially developed and includes detention basins to mitigate runoff. The runoff crossing Folsom South Canal is limited by the capacity of the existing flume (141 cfs). This flow contributes to the southern branch of Morrison Creek.

RUNOFF AND INFILTRATION

Existing flows and hydraulic conditions were analyzed to establish a base and to determine necessary drainage improvements. A hydrologic model of the Plan Area watersheds was created using the SacCalc computer program. The SacCalc computer program utilizes hydrologic criteria specified by the Sacramento County Hydrology Standards. The existing conditions on-site watersheds were all delineated using topography. Impervious surfaces were digitized using GIS software and an existing impervious percentage was obtained for each existing shed.

FLOODING POTENTIAL

There are five major watersheds within the County of Sacramento, and the Mather South Plan Area is located within the Morrison Creek Stream Group. Morrison Creek is located within the mid-southern portion of the County. There are approximately eleven creeks that drain into Morrison Creek, where summer flows drain to the Sacramento River and flood flows can spill to the Mokelumne River. Because development in this area of the County has been fairly recent, many of the creeks are being constructed/improved as part of overall development projects. This has led to many of the creeks providing adequate freeboard and 100-year flood protection. Watercourses within this drainage area include: Elder Creek, Morrison Creek, Elk Grove Creek, Strawberry Creek (all branches), Florin Creek, Unionhouse Creek, Gerber Creek, Whitehouse Creek, and Laguna Creek (& Tributary).

The Morrison watershed consists of both urbanized and agricultural areas. The urbanized areas have been developed with piped storm water conveyance, pump stations, and concrete lined channels. Much of this development occurred many years ago, before current floodplain management policies. In the agricultural areas, the drainage is by roadside ditches and the channels are unimproved. The Morrison Creek stream group discharges into Beach Stone Lakes flowing southwest to the Delta.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) is presented in Plate HY-2. The effective FIRM shows portions of 100- and 500-year flood zones, along the portion of Morrison Creek that runs east to west across the southern part of the Plan Area. In addition to FEMA mapping, the *Storm Drainage Master Plan* for the Plan Area (MacKay & Somps 2017) provided additional floodplain information.

Existing flows and hydraulic conditions were mapped to yield the existing 100-year/10-Day flood plain for Morrison Creek as shown in Plate HY-3. The starting water surfaces for the 10-year 24-hour, 100-year 24 hour, and 100-year 10-day simulations through the project reach were developed assuming a base flow of 6.5 cfs for the northern branch of Morrison Creek and 4 cfs for the southern branch of Morrison Creek. The downstream water surface elevation was calculated based on the downstream channel slope of 0.4 percent and used as a normal depth calculation.

WATER QUALITY

Morrison Creek and Mather Lake are included on the State's list of "impaired water bodies" under Section 303(d) of the federal Clean Water Act (CWA) (EPA 2018) because diazinon has been found within these water bodies. Frye Creek and Todd Creek are not on the Section 303(d) list.

Diazinon is an organophosphorus pesticide used for urban and agricultural pest control. Morrison Creek has been included in the total maximum daily load report for diazinon and chlorpyrifos impaired urban creeks in Sacramento County (RWQCB 2004).

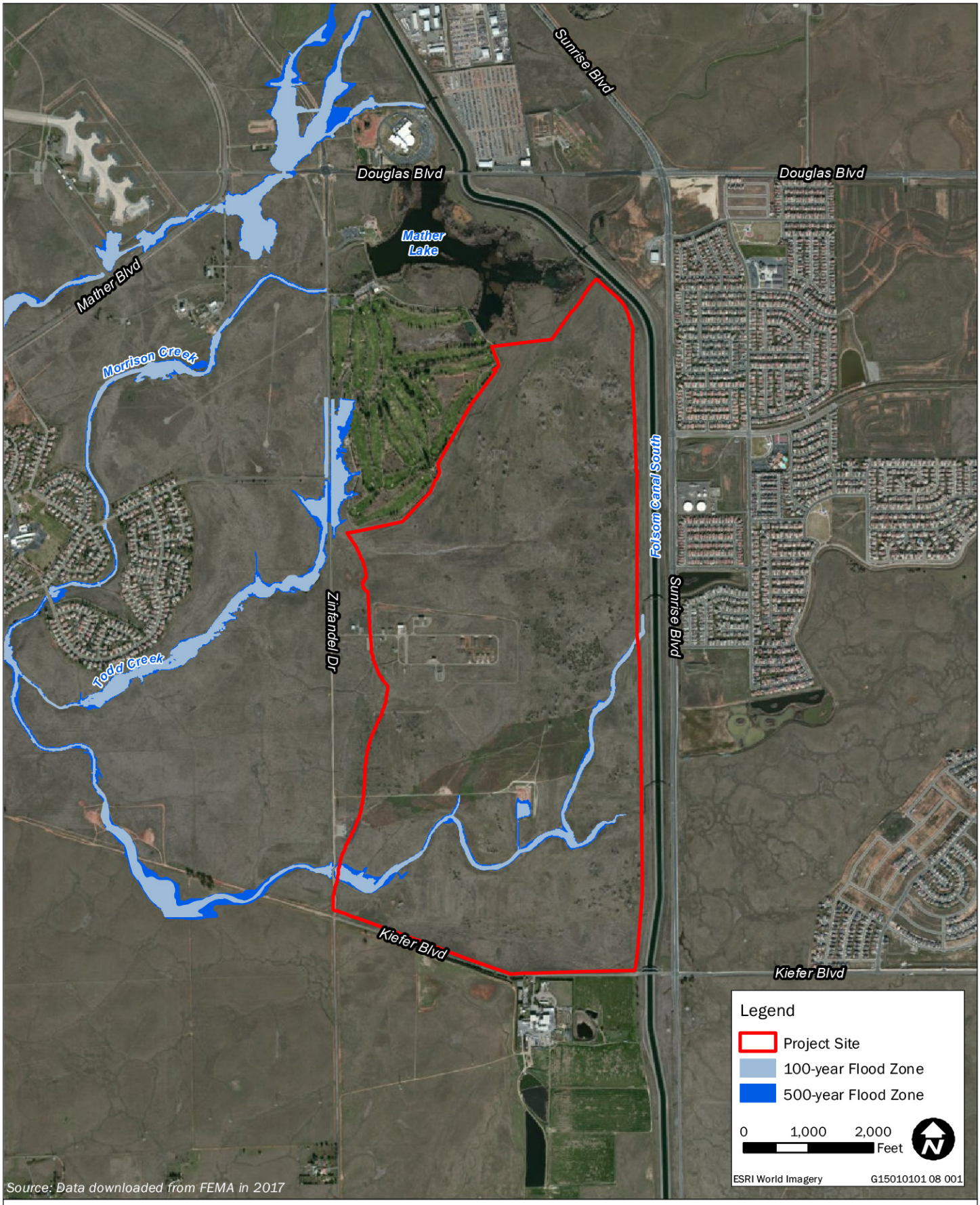
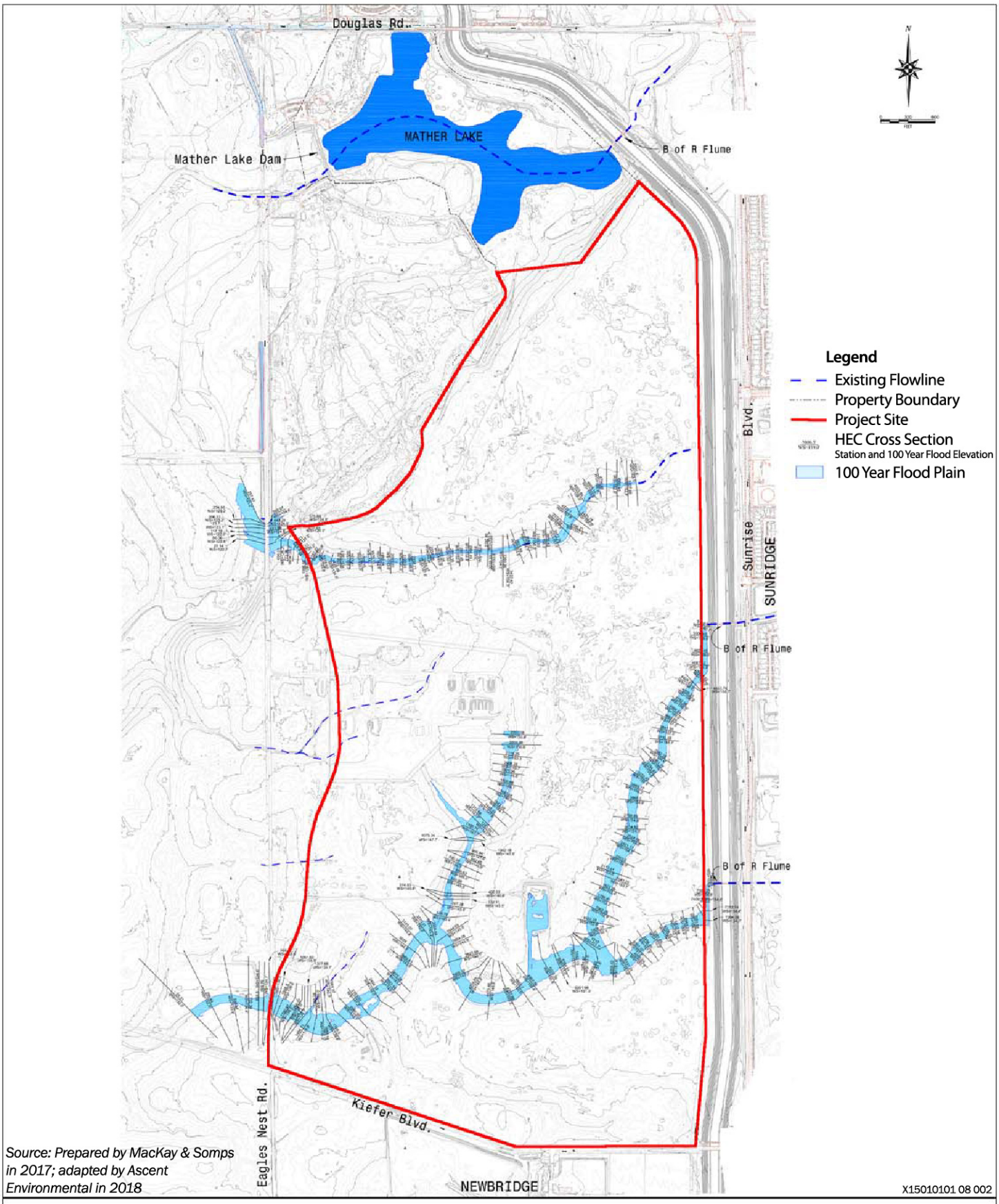


Plate HY-2: FEMA Flood Zones

ASCENT ENVIRONMENTAL



Source: Prepared by MacKay & Somps in 2017; adapted by Ascent Environmental in 2018

Plate HY-3: Existing 100-Year, 10-Day Flood Plain

Water quality sampling has been conducted for Morrison Creek (near Bradshaw Road) during dry weather and wet weather conditions for 2003 and 2004 associated with the Sacramento County Coordinated Monitoring Program. Wet weather sampling has identified low levels of conventional inorganic minerals, but has shown elevated levels of coliform bacteria, total suspended solids and several polycyclic aromatic hydrocarbons (byproducts of combustion and are contained in asphalt sealants) (Rancho Cordova 2006).

REGULATORY SETTING

FEDERAL

FEDERAL EMERGENCY MANAGEMENT AGENCY

FEMA maintains and updates the National Flood Insurance Program maps, called FIRMs, that define areas of federal flood hazard. In Sacramento County and elsewhere, the floodplains are identified based on U.S. Army Corps of Engineers (USACE) studies. FIRM maps denote the location of the federal 100-year flood area, 500-year flood area, and the Base Flood Elevation. In a 100-year floodplain, there is a 1 percent chance of flooding in a given year, and in a 500-year floodplain, there is a 0.2 percent chance of flooding in a given year. If an area is within a 100-year floodplain, flood insurance is required by most mortgage companies. FEMA is also responsible for the accreditation of levee systems (certification is by USACE).

Not all 100-year floodplains are mapped by FEMA, because the focus of the FEMA FIRM maps is to provide information for insurance programs. Areas that have very little development that would be at risk from flooding, such as rural areas and wilderness areas, typically are not mapped.

CLEAN WATER ACT

The CWA is the primary federal statute governing the protection of water quality and was established to provide a comprehensive program to protect the nation's surface waters. The U.S. Environmental Protection Agency (EPA) is the federal agency with primary authority for implementing regulations adopted pursuant to the CWA. The basis of the CWA consists of the federal Water Pollution Prevention and Control Act (Water Pollution Act) passed in 1948. The Water Pollution Act was substantially reorganized and expanded in subsequent amendments passed in 1972 and in 1977, when "Clean Water Act" became its common name. The Water Pollution Act required the EPA to establish nationwide effluent standards on an industry-by-industry basis. The 1972 amendment established the National Pollutant Discharge Elimination System (NPDES) program. As a result of the reauthorization of the CWA in 1987, Sections 402(p) through 405 were added. One of the results of the new sections was the creation of a framework for regulating discharges under the NPDES permit program, which is discussed later in this section.

Under federal law, EPA has published water quality regulations under Volume 40 of the Code of Federal Regulations. Section 303 of the CWA requires states to adopt water quality standards for all surface waters of the United States. As defined by the CWA, water quality standards consist of two elements: (1) designated beneficial uses of the water body in question, and (2) criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. EPA has designated the State Water Resources Control Board (SWRCB) and its nine regional water quality control boards (RWQCBs) with the authority to identify beneficial uses and adopt applicable water quality objectives. EPA has delegated to the State of California the authority to implement and oversee most of the programs authorized or adopted for CWA compliance through the Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne Act), described below.

STATE

STATE WATER RESOURCES CONTROL BOARD

In California, the SWRCB has broad authority over water quality control issues for the state. The SWRCB is responsible for developing statewide water quality policy and exercises the powers delegated to the state by the federal government under the CWA. Other state agencies with jurisdiction over water quality regulation in California include the California Department of Health Services, the California Department of Pesticide Regulation, the California Department of Fish and Wildlife, and the Office of Environmental Health and Hazard Assessment. Regional authority for planning, permitting, and enforcement is delegated to the nine RWQCBs. The regional boards are required to formulate and adopt water quality control plans for all areas in the region and establish water quality objectives in the plans. The Central Valley RWQCB is responsible for water resources in the Plan Area and vicinity.

On January 20, 2005, the SWRCB adopted the Low Impact Development (LID) Policy, which promotes “sustainability” as a key parameter to be considered during the design and planning process for future development. The sustainability practice promotes LID to benefit water supply and contribute to water quality protection. LID has been a proven approach in other parts of the country and is seen in California as an alternative to conventional stormwater management. It is necessary to incorporate LID into the design of projects to meet the Maximum Extent Practicable standard of the Phase II General Permits (see discussion of NPDES permits, below). LID practices include measures such as reducing impervious surface area, using natural drainage systems, and designing development to correspond to existing terrain.

PORTER-COLOGNE WATER QUALITY CONTROL ACT OF 1969

The Porter-Cologne Act is California’s statutory authority for the protection of water quality. Under the Porter-Cologne Act, the state must adopt water quality policies, plans, and objectives that protect the state’s waters for the use and enjoyment of the people.

The act sets forth the obligations of the SWRCB and RWQCBs to adopt and periodically update basin plans. Basin plans are the regional water quality control plans required by both the CWA and Porter-Cologne Act in which beneficial uses, water quality objectives, and implementation programs are established for each of the nine regions in California.

The Porter-Cologne Act also requires waste dischargers to notify the RWQCBs of their activities through the filing of reports of waste discharge and authorizes the SWRCB and RWQCBs to issue and enforce waste discharge requirements, NPDES permits, Section 401 water quality certifications, and other approvals. The RWQCBs also have the authority to issue waivers to reports of waste discharge/waste discharge requirements for broad categories of "low threat" discharge activities that have minimal potential for adverse water quality effects when implemented according to prescribed terms and conditions.

National Pollutant Discharge Elimination System Permit System and Waste Discharge Requirements for Construction

The federal NPDES permit program in California has been delegated to the SWRCB and RWQCBs. The goal of the NPDES nonpoint source regulations is to improve the quality of stormwater discharged to receiving waters to the "maximum extent practicable" through the use of best management practices (BMPs). Compliance with the NPDES General Construction Permit requires that any construction activity affecting 1 acre or more obtain the General Construction Activity Storm Water Permit. Permit applicants are required to submit a notice of intent (NOI) to the SWRCB and to prepare a stormwater pollution prevention plan (SWPPP), which identifies BMPs that will be implemented to reduce construction effects on receiving water quality. The BMPs include sediment and erosion control measures and other measures to control potential chemical contaminants. Examples of construction BMPs identified in SWPPPs include using temporary mulching, seeding, or other stabilization measures to protect uncovered soils; storing materials and equipment to ensure that spills or leaks cannot enter the storm drain system or surface water; developing and implementing a spill prevention and cleanup plan; installing traps, filters, or other devices at drop inlets to prevent contaminants from entering storm drains; and using barriers, such as straw wattles or silt fencing, to minimize the amount of uncontrolled runoff that could enter drains or surface water.

Construction activities subject to the general construction activity permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce nonstormwater discharges to storm sewer systems and other waters. The permit also requires dischargers to consider the use of postconstruction permanent BMPs that will remain in service to protect water quality throughout the life of the project. All NPDES permits also have inspection, monitoring, and reporting requirements.

The General Permits also require permittees to develop a Construction Site Storm Water Runoff Control Program and a Post Construction Storm Water Management Program.

State Nondegradation Policy

In 1968, the SWRCB adopted a nondegradation policy aimed at maintaining high quality for waters in California. The nondegradation policy states that the disposal of wastes into state waters shall be regulated to achieve the highest water quality consistent with maximum benefit to the people of the state and to promote the peace, health, safety, and welfare of the people of the state. The policy provides as follows:

a. Where the existing quality of water is better than required under existing water quality control plans, such quality would be maintained until it has been demonstrated that any change would be consistent with maximum benefit to the people of the state and would not unreasonably affect present and anticipated beneficial uses of such water.

b. Any activity which produces waste or increases the volume or concentration of waste and which discharges to existing high-quality waters would be required to meet waste discharge requirements.

Senate Bill 5

In 2007, the State of California passed a series of laws referred to as SB 5 directing the California Department of Water Resources to prepare flood maps for the central valley flood system and the State Plan of Flood Control, which includes a system of levees and flood control facilities located in the Central Valley. This legislation also set specific locations within the area affected by the 200-year flood event as the urban level of flood protection (ULOP) for the Central Valley.

SB 5 “requires all cities and counties within the Sacramento-San Joaquin Valley, as defined in California Government Code Sections 65007(h) and (j), to make findings related to an ULOP or the FEMA standard of flood protection before: (1) entering into a development agreement for any property that is located within a flood hazard zone; (2) approving a discretionary permit or other discretionary entitlement, or a ministerial permit that would result in the construction of a new residence, for a project that is located within a flood hazard zone; or (3) approving a tentative map, or a parcel map for which a tentative map was not required, for any subdivision that is located within a flood hazard zone.” Sacramento County completed its General Plan and Zoning Code updates in October 2016 to meet the requirements of SB 5.

Water Quality Control Plans

NPDES permits and Erosion Control Programs are required for the construction of infrastructure and pumping facilities. The CWA requires that water resources be protected from degradation caused by waste discharges and requires that identified beneficial uses be maintained. The RWQCB’s water quality control plan for the Central Valley Region identifies the designated beneficial uses of groundwater and surface water bodies and contains water quality objectives and standards established to protect those uses.

The County of Sacramento received a municipal NPDES permit for stormwater discharges from the Central Valley RWQCB. Under this permit, permittees are required to develop, administer, implement, and enforce a comprehensive stormwater management program (CSWMP) to reduce pollutants in urban runoff to the maximum extent practicable. The CSWMP implemented by the County is a multi-faceted, dynamic program which is designed to reduce stormwater pollution to the maximum extent practicable. The CSWMP emphasizes all aspects of pollution control including but not limited to public awareness and participation, source control, regulatory restrictions, water quality monitoring, and treatment control.

The County has established a Stormwater Ordinance (Sacramento County Code [SCC] 15.12). The Stormwater Ordinance prohibits the discharge of unauthorized non-stormwater to the County's stormwater conveyance system and local creeks. It applies to all private and public projects in the County, regardless of size or land use type. In addition, Sacramento County Code 16.44 (Land Grading and Erosion Control) requires private construction sites disturbing one or more acres or moving 350 cubic yards or more of earthen material to obtain a grading permit. To obtain a grading permit, project proponents must prepare and submit for approval an erosion and sediment control plan describing erosion and sediment control BMPs that will be implemented during construction to prevent sediment from leaving the site and entering the County's storm drain system or local receiving waters. Construction projects not subject to SCC 16.44 are subject to the Stormwater Ordinance (SCC 15.12) described above.

In addition to complying with the County's ordinances and requirements, construction sites disturbing one or more acres are required to comply with the State's General Stormwater Permit for Construction Activities. The Construction General Permit is issued by the State Water Resources Control Board (https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction.html) and enforced by the Regional Board. Coverage is obtained by submitting an NOI to the State Board before construction. The General Permit requires preparation and implementation of a site-specific SWPPP that must be kept on site at all times during construction for review.

Applicable projects applying for a County grading permit must show proof that a NOI has been filed and must submit a copy of the SWPPP. Although the County has no enforcement authority related to the Construction General Permit, the County is required by its Municipal Stormwater Permit (Order Number R5-2008-0142) to verify that the SWPPP program includes six minimum components (public education and outreach on storm water impacts, public involvement participation, illicit discharge detection and elimination, construction site storm water runoff control, post-construction storm water management in new development and redevelopment, and pollution prevention/good housekeeping for municipal operations).

In addition to the above construction controls, new development is required to include treatment of urban runoff using the BMPs required by the current standard defined in the Stormwater Quality Design Manual for the Sacramento ~~and South Placer~~ Region~~s~~, 2018. The BMPs include a number of options for treatment including simple grassy

swales and rain gardens, to more complex systems that use cisterns, pumps, and sand filters. Updates and background on the County's requirements for post-construction stormwater quality treatment controls, along with several downloadable publications, can be found at the following websites:

http://www.waterresources.saccounty.net/stormwater/Pages/default.aspx

http://www.waterresources.saccounty.net/stormwater/Pages/newdevelopment.aspx

LOCAL

SACRAMENTO COUNTY GENERAL PLAN

The following General Plan policies are related to hydrology, drainage, and water quality and may be applicable to the project.

AG-29. The County shall minimize flood risks to agricultural lands resulting from new urban developments by:

- Requiring that such developments incorporate adequate runoff control structures, and/or
- Assisting implementing comprehensive drainage management plans to mitigate increased risks of farmland flooding resulting from such developments.

CI-65. Incorporate Low Impact Design (LID) techniques to the greatest extent feasible to improve water quality runoff and erosion control, infiltration, groundwater recharge, visual aesthetics, etc. LID techniques may include but are not limited to:

- Bioretention techniques, such as filtration strips, swales, and tree box filters;
- Permeable Hardscape;
- Green roofs;
- Erosion and sediment controls; and
- Reduced street and lane widths where appropriate.

CO-24. Comply with the Sacramento Areawide National Pollutant Discharge Elimination System Municipal Stormwater Permit (NPDES Municipal Permit) or subsequent permits, issued by the Central Valley Regional Water Quality Control Board (Regional Board) to the County, and the Cities of Sacramento, Elk Grove, Citrus Heights, Folsom, Rancho Cordova, and Galt (collectively known as the Sacramento Stormwater Quality Partnership [SSQP]).

CO-26. Protect areas susceptible to erosion, natural water bodies, and natural drainage systems.

CO-28. Comply with other water quality regulations and NPDES permits as they apply to County projects or activities, such as the State's Construction General Permit and Aquatic Pesticides Permit.

CO-30. Require development projects to comply with the County's stormwater development/design standards, including hydromodification management and low impact development standards, established pursuant to the NPDES Municipal Permit.

CO-31. Require property owners to maintain all required stormwater measures to ensure proper performance for the life of the project.

CO-93. Discourage fill in the 100-year floodplain (Please also refer to CO-117).

CO-94. Development within the 100-year floodplain and designated floodway of Sacramento streams, sloughs, creeks or rivers shall be:

- Consistent with policies to protect wetlands and riparian areas; and
- Limited to land uses that can support seasonal inundation.

CO-107. Maintain and protect natural function of channels in developed, newly developing, and rural areas.

CO-114. Protect stream corridors to enhance water quality, provide public amenities, maintain flood control objectives, preserve and enhance habitat, and offer recreational and educational opportunities.

CO-117. Public roads, parking, and associated fill slopes shall be located outside of the stream corridor, except at stream crossings and for purposes of extending or setting back levees. The construction of public roads and parking should utilize structural materials to facilitate permeability. Crossings shall be minimized and be aesthetically compatible with naturalistic values of the stream channel.

CO-118. Development adjacent to waterways should protect the water conveyance of the system, while preserving and enhancing the riparian habitat and its function.

CO-126. Prohibit obstruction or underground diversion of natural waterways.

SA-5. A comprehensive drainage plan for major planning efforts shall be prepared for streams and their tributaries prior to any development within the 100-year floodplain defined by full watershed development without channel modifications. The plan shall:

a. Determine the future 100-year flood elevations associated with planned and full development of the watershed;

b. Determine the future 100-year floodplain boundaries for both flood elevations (planned and full development) based on minimum 2-foot contour intervals;

c. Assess the feasibility of gravity drainage into the existing flowline of the stream;

d. Assess the feasibility of alternative means of drainage into the stream;

e. Identify potential locations for sedimentation ponds and other stormwater treatment facilities;

f. Determine practical channel improvements and/or detention basins to provide the flood control needs of the proposed development;

g. Determine the location and extent of marsh, vernal pool and riparian habitat;

h. Develop measures for protecting and mitigating natural habitat;

i. Develop measures for protecting and mitigating for federal and state listed endangered species;

j. Develop and ensure implementation of measures that would reduce vector larvae;

k. Identify appropriate plant species to be included as part of the natural features of the comprehensive drainage plan.

SA-14. The County shall require, when deemed to be physically or ecologically necessary, all new urban development and redevelopment projects to incorporate runoff control measures to minimize peak flows of runoff and/or assist in financing or otherwise implementing Comprehensive Drainage Plans.

SA-16. Deny creation of parcels that do not have buildable areas outside the 100-year floodplain unless otherwise allowed in the Floodplain Management Ordinance.

SA-17. For residential zoning, the area outside the 100-year floodplain must be contiguous or reasonably situated to provide buildable area for a residence and associated structures. Examples of structures include swimming pools, sheds, barns, detached garages, and other outbuildings that are normally associated with residential development. There may be exceptions (such as the Delta area) as allowed in the Floodplain Management Ordinance.

SA-18. Vehicular access to the buildable area of newly created parcels must be at or above the 10-year flood elevation. Exceptions may be made when the existing public street from which access is obtained is below the 10-year flood elevation.

There may be exceptions (such as the Delta area) as allowed in the Floodplain Management Ordinance.

SA-22. Areas within a 100-year floodplain shall not be upzoned to a more intensive use unless and until a Master Drainage Plan is prepared that identifies areas of the floodplain that may be developed.

Cordova Community Plan

The Cordova Community Plan contains the following policies that may be relevant to this project:

ROS-7. Protect and preserve sensitive environmental areas and wildlife habitats including wetlands, riparian corridors, annual grasslands, and floodplains; and encourage restoration and educational opportunities (e.g., public walkways and informational signage) for such areas when appropriate.

PS-2. Provide a reliable, contaminant-free, long-term source of water to serve the community, which protects the groundwater aquifer(s) from long-term damage attributable to drawdown by the use of public/private wells.

PS-3. Provide adequate drainage and flood protection for all urbanized portions of the community.

Sacramento County Department of Water Resources

As discussed in the Regulatory Setting section, not all floodplains are mapped by FEMA. Though not mapped by FEMA, many local 100-year floodplains have been identified by the Sacramento County Department of Water Resources (County DWR). Local floodplains in the County are typically mapped either in response to an area having flooding problems, or in response to a request by a property owner to make modifications to their parcel. In such circumstances, County DWR staff investigate the property and either decide if there is sufficient existing information to determine the floodplain elevation on the property or that a drainage study is required before a determination can be made. Floodplains, whether local or FEMA, are regulated by the provisions of the Sacramento County Floodplain Management Ordinance, Improvement Standards, and Local Floodplain Management Plan.

Mather Field Special Planning Ordinance

Section 603-19 of the Mather Field Special Planning Area Ordinance (SPA Ordinance) includes performance standards that must be met by all public and private development projects and leases and/or sales of existing buildings, facilities and/or property within

the Mather Field SPA. The following performance standards are included in the SPA Ordinance related to hydrology and are applicable to the Mather South Project:

- Individual development proposals within the Specific Plan area shall be required to implement all drainage improvements identified by the detailed drainage master plan as being necessary to accommodate the increased runoff of the development proposal and to provide an adequate level of flood protection to the development proposal, to the satisfaction of the Water Resources Division. Individual development proposals within the Specific Plan area may modify the proposed facilities shown in the master plan so long as the intent of the master plan is upheld, and subject to the approval of the Water Resources Division.
- Before the approval of improvement plans or the issuance of building permits for individual development proposals within the Specific Plan area, the final design of all proposed stormwater quality source and treatment control measures for the development proposal shall be approved by the County Water Resources Division, consistent with Volume 5 of the Draft City/County Drainage Manual.

Sacramento County Floodplain Management Ordinance

Sacramento County has participated in the National Flood Insurance Program since 1979. A County Floodplain Management Ordinance which meets or exceeds the minimum standards of FEMA is a requirement of such participation. The Floodplain Management Ordinance specifically describes what types of development activities are allowed and how proposed development may be permitted. The purpose of floodplain management is to realize the extent of flood hazards and to manage the flooding in a manner so as to reduce damage to structures and infrastructure and to minimize the risk of human casualties.

All proposed development activity in floodplains -- those areas designated by FEMA on the Flood Insurance Rate Maps for Sacramento County (Community Number 060262) and other areas subject to flooding -- must be reviewed and permitted by the County's Floodplain Administrator (County DWR) before construction (Sacramento County 2014).

Sacramento County Local Floodplain Management Plan

A Local Floodplain Management Plan is required for a community to participate in the National Flood Insurance Program Community Rating System. The original plan for the County of Sacramento was prepared in 1997, and was adopted by the County of Sacramento Board of Supervisors on September 16, 1997, Resolution 97-1112. The plan was later updated in 2001.

A Floodplain Management Plan is a comprehensive plan that describes how a community will deal with its flooding problem(s) and protect the natural and beneficial functions of its floodplain. The plan identifies the major watersheds and watercourses within the unincorporated area of Sacramento County, the flooding problems associated with these watercourses, and the measures being taken to minimize the flood risk for each watercourse.

The goals of the Local Floodplain Management Plan are:

- protect new development from the potential of flooding from a 100-year flood event, and
- identify possible activities to reduce the potential of flood damage to existing structures (Sacramento County 2001).

SIGNIFICANCE CRITERIA

According to the CEQA Guidelines, the project would cause a significant impact on hydrology and water quality if the project would:

- violate any water quality standards or waste discharge requirements;
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial on- or offsite erosion or siltation; or substantially increase the rate or amount of surface runoff in a manner which would result in on- or offsite flooding;
- create or contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; changes in water quality would be considered substantial if the Project will not comply with the County NPDES Program, or there is a net increase in any other pollution source associated with an impaired waterway (under Section 303(d) of the Clean Water Act).
- otherwise substantially degrade water quality;
- place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or FIRM or other flood hazard delineation map;
- place within a 100-year flood hazard area structures that would impede or redirect flood flows;
- develop in an area that is subject to 200-year urban levels of flood protection (ULOP);
- expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- result in inundation by seiche, tsunami, or mudflow.

METHODOLOGY

Evaluation of potential hydrologic and water quality impacts was based on a review of existing information from previously completed documents that address water resources on the Plan Area and vicinity, including the *Storm Drainage Master Plan for Mather*

South (MacKay & Somps 2017) included as Appendix HY-1, *Technical Memorandum-Beach Stone Lakes Area Impact Analysis for NewBridge and Mather South Developments* (MacKay & Somps 2018b) included as Appendix HY-2, *Climate Change Impact Analysis for Mather South Specific Plan Development* (MacKay & Somps 2018a) included as Appendix HY-3, and the County's General Plan. Wood Rodgers, in coordination with the Sacramento County DWR, prepared a drainage study entitled *Zinfandel Drive Extension South Drainage Study* dated March 31, 2015, to address localized drainage, flood control and water quality issues related to the construction of the proposed Zinfandel Drive extension.

In addition, there are many design standards, policies, and regulations that protect our water from pollution and our communities from flooding. An overview of pertinent regulations is important to include in this analysis; however, to prepare a concise report, the following documents are hereby incorporated by reference, and are available for review at 827 7th Street, Room 225, Sacramento:

- Stormwater Quality Design Manual for the Sacramento and South Placer Regions, July 2018;
- Sacramento County Improvement Standards;
- Sacramento County Volume 2 Hydrology Standards;
- Sacramento County Floodplain Management Ordinance; and
- Sacramento County Code Section 16.44 (Land Grading and Erosion Control).

The Drainage Master Plan study area along with pre-development sub-shed boundaries is depicted in Plate HY-1. More detailed design calculation will be performed alongside improvement plans that are reviewed and approved for each subdivision map within the Plan Area over time. This analysis develops the conceptual backbone drainage system, tributary sheds, locations of drainage facilities, pre-development and post development flows, flood detention and water quality to adequately serve the Mather South Project.

ISSUES NOT DISCUSSED FURTHER

Because of the distance of the Plan Area from the nearest open waterbody, Folsom Lake (more than 10 miles to the north), the Mather South Project would not be affected by inundation as a result of seiche. It is about 85 miles from the Pacific Ocean and would not be affected by inundation as a result of tsunami. In addition, the Plan Area is relatively flat and would be graded as part of the project and there would be no steep areas that would have the potential to generate mudflows during operation.

As such, these issues are not addressed further in this EIR. The Plan Area is not located in an area subject to 200-year urban levels of flood protection and, therefore, will not be evaluated for this standard further.

IMPACTS AND ANALYSIS

2016 MATHER FIELD PROJECT EIR IMPACTS DETERMINATION

The Mather Field Project EIR evaluated impacts related to hydrology and water quality from implementation of the Mather Field Project which consisted of a realignment of Zinfandel Drive and trunk extension, creation of the Mather Preserve and the establishment of an Urban Development Area designation for the Mather South Plan Area.

The EIR concluded less than significant program-level impacts related to drainage and flooding, and failure of dams or levees. The EIR concluded less than significant program-level impacts related to stormwater quality from construction activities and operations. Project-level impacts related to drainage and flooding, and resulting from failure of a levee or dam would be less than significant. Compliance with existing regulations would ensure less-than-significant impacts related to project-related erosion and pollution, and operational impacts to water quality. The discussion of impacts can be found on pages 10-12 through 10-22 of the Mather Field Project EIR and is hereby incorporated by reference.

MATHER SOUTH PROJECT IMPACTS DETERMINATION

IMPACT: CONTRIBUTION TO POLLUTED RUNOFF OR VIOLATION OF A WATER QUALITY STANDARD

Pollutants entering waterways are generally categorized by regulatory agencies as either point or nonpoint discharge. A point source discharge is one that comes from a specific location, such as a wastewater treatment plant outfall. A nonpoint source discharge is one that comes from multiple locations over a wide land area and is the type of pollution that occurs as a result of land use activities. Rainwater or irrigation runoff flows over agricultural fields, streets, parking lots, backyards, and other areas, picking up sediment, pesticides, fertilizers, heavy metals, oils, and other pollutants before ultimately flowing into a waterway. It is nonpoint pollution that the Mather South Project has the potential to generate. Nonpoint source pollution may be generated both during construction and after the project is operational; construction and operations are discussed separately below.

CONSTRUCTION IMPACTS

The Mather South Project would result in construction of residential and commercial buildings, along with associated streets and other paved areas. Water quality impacts could occur during construction from increased soil erosion and sedimentation because of clearing of vegetation, alteration of drainages, and grading. Construction also involves solvents, paints, concrete, and other materials that have the potential to contact and affect runoff from construction sites.

The Sacramento County Stormwater Ordinance (Sacramento County Code 15.12) prohibits the discharge of unauthorized non-stormwater to the County's stormwater conveyance system and local creeks. Non-stormwater refers to the prohibition on

disposing of extra paint, oils, or other such materials into the stormwater system, as well as wash-water. The Stormwater Ordinance applies to all private and public projects in the County, regardless of size or land use type. In addition, the Land Grading and Erosion Control Ordinance (Sacramento County Code 16.44) requires private construction sites disturbing one or more acres or moving 350 cubic yards or more of earthen material to obtain a grading permit. To obtain a grading permit, project proponents must prepare and submit for approval an Erosion and Sediment Control Plan describing erosion and sediment control BMPs that will be implemented during construction to prevent sediment from leaving the site and entering the County's storm drain system or local receiving waters.

In addition to complying with the County's ordinances and requirements, construction sites disturbing one or more acres are required to comply with the State's General Stormwater Permit for Construction Activities. The Construction General Permit is issued by the State Water Resources Control Board and enforced by the Regional Board. Coverage is obtained by submitting an NOI to the State Board before construction. The General Permit requires preparation and implementation of a site-specific SWPPP that must be kept on site at all times for review by the State inspector. Applicable projects applying for a County grading permit must show proof that an NOI has been filed and must submit a copy of the SWPPP.

During the wet season (October 1 – April 30), projects must include an effective combination of erosion, sediment, and other pollution control BMPs in compliance with the County ordinances and the State's Construction General Permit. During the rest of the year, typically erosion controls are not required, except in the case of predicted rain. Examples of erosion controls include: stabilized construction entrances, tackified mulch, three-step hydroseeding, spray-on soil stabilizers, and anchored blankets. Sediment controls help to filter sediment out of runoff before it reaches the storm drains and local waterways. Examples include rock bags to protect storm drain inlets, staked or weighted straw wattles/fiber rolls, and silt fences.

In addition to erosion and sediment controls, the project must have BMPs in place to keep other construction-related wastes and pollutants out of the storm drains. Such practices include, but are not limited to: filtering water from dewatering operations, providing proper washout areas for concrete trucks and stucco/paint contractors, containing wastes, managing portable toilets properly, and dry sweeping instead of washing down dirty pavement. With adherence to existing regulations and required best management practices, construction activities would result in **less-than-significant** impacts.

OPERATIONAL IMPACTS (POST-CONSTRUCTION IMPACTS)

The Mather South Project may result in the use of substances that could pollute waterways if not regulated. Vehicles deposit heavy metals, oils, and other substances onto roadways, parking lots, and driveways; residents wash their cars in streets and driveways, and the water picks up soaps, waxes, and the dirt, oils, and heavy metals from the cars; and people maintaining landscaping areas use pesticides and fertilizers. Water carries these and other pollutants into storm drains, where the water flows without treatment directly into the streams that provide drinking water, recreation, and

wildlife habitat. This runoff could increase pollutant loads to such an extent that the waterway becomes impaired. Water temperatures can be increased, which affects the health of many organisms that live in the creeks. Even the nutrients in fertilizers can cause water quality problems, because they promote blooms of algae. Increases in discharge amounts or velocity have the potential to greatly accelerate downstream erosion and impair stream habitat in natural drainage systems. These impacts must be mitigated by requiring appropriate runoff reduction and pollution prevention controls to minimize runoff and keep runoff clean for the life of the project.

It is critical that stormwater runoff be treated, in particular for the first flush that carries the greatest concentration. Typically, the first flush is the first one-half to one inch of rain after an extended dry period; it carries the accumulation of many weeks or months of pollutants that have been deposited onto the soils, pavement, and plants. It is impractical to treat all stormwater run-off during large storm events, but the use of standard water quality treatment methods can treat the first inch of run-off, which is highly beneficial and can avoid significant impacts to water quality.

The drainage master plan for the Mather South Project includes an analysis of water quality basins, which function by retaining water long enough to let sediments, metals, and other heavy pollutants settle out of the water. The same basins which provide peak storm control have also been designed to function as water quality basins, consistent with the design requirements of the *Stormwater Quality Design Manual for the Sacramento and South Placer Regions*. Table 4 of the drainage master plan includes calculations for each basin indicating the amount of storage needed for water quality.

In some cases, the stormwater must be cleaned with various types and sizes of water pollution filters or municipal treatment plants, particularly in the case of industrial and commercial facilities. The use of BMPs can be highly effective in controlling pollution at its source before it enters the storm drain system and local streams. BMPs have been demonstrated to effectively protect surface waters and meet the requirements of the Clean Water Act and Porter-Cologne Water Quality Act. To reduce the amount of polluted water that enters storm drains, local streams and rivers, the County has several requirements that are triggered during the development process.

The County requires that projects include source and/or treatment control measures on selected new development and redevelopment projects. Source control BMPs are intended to keep pollutants from contacting site runoff. Examples include “No Dumping – Drains to Creek/River” stencils/stamps on storm drain inlets to educate the public, and providing roofs over areas likely to contain pollutants, so that rainfall does not contact the pollutants. Treatment control measures are intended to remove pollutants that have already been mobilized in runoff. Examples include vegetated swales and water quality detention basins. These facilities slow water down and allow sediments and pollutants to settle out before discharge to receiving waters.

The use of “low impact development” techniques reduces the amount of imperviousness on the site, which reduces the volume of runoff and can reduce the size/cost of stormwater quality treatment required. Examples of low impact development techniques

include pervious pavement and bioretention facilities. New development is required to treat urban runoff using the BMPs required by the current standard defined in the Stormwater Quality Design Manual for the Sacramento and South Placer Regions 2007 and subsequent editions in the years to come (Sacramento County et al. 2007). The BMPs include a number of options for treatment including simple grassy swales and rain gardens, to more complex systems that use cisterns, pumps, and sand filters. There are sometimes site constraints that dictate the type of treatment that is most appropriate. Early in the design phase, it is recommended that the engineers work with the Department of Water Resources Water Quality Division to identify the requirements and options for treatment. Through early consultation, it is often the case that more options are available than later in the design phase when space is limited by other planned developments and expensive underground systems are one of the only choices left available without re-engineering the site layout.

A review of the 303(d) list of impaired waterways indicates that Morrison Creek is listed as impaired. Although the waterway is listed as impaired, development of the Mather South Plan Area consistent with NPDES regulations would not cause a net increase of the pollutants for which the waterway is listed.

Compliance with the County Stormwater Ordinance, implementation of Low Impact Development Standards, and implementation of the Drainage Master Plan would insure that development of the site would not alter the course of local waterways in a manner that results in substantial erosion or siltation, would not cause violation of a water quality standard or waste discharge requirement, and would not result in substantial increases to polluted runoff; impacts would be **less than significant**.

MITIGATION MEASURE

None required.

IMPACT: HYDROMODIFICATION

A hydromodification impact occurs when a change in land use creates substantial alteration of the existing drainage pattern of the site or area in a manner which would result in environmental harm on- or off-site, such as substantial erosion, siltation or substantial additional sources of runoff or polluted runoff. The ~~revised draft~~ *Sacramento County Stormwater Quality Partnerships Hydromodification Management Plan* (HMP) ~~dated 2013~~**finalized in 2017** was used as the criteria for designing the hydromodification mitigation basins for the Mather South Project on-site watersheds. While acceptance and the timing for final adoption of the HMP by the Central Valley RWQCB is not known, the project applicant has decided to introduce the project's strategy for compliance with hydromodification mitigation by providing a volume of water and outlet conditions similar to what would be provided under the 2013 draft HMP. It is understood that the final hydromodification management plan that the County may adopt will likely differ, perhaps significantly, from the County's 2013 draft HMP. As such, the drainage master plan may need to be updated in the future, before approval of the final map.

STORMWATER QUALITY

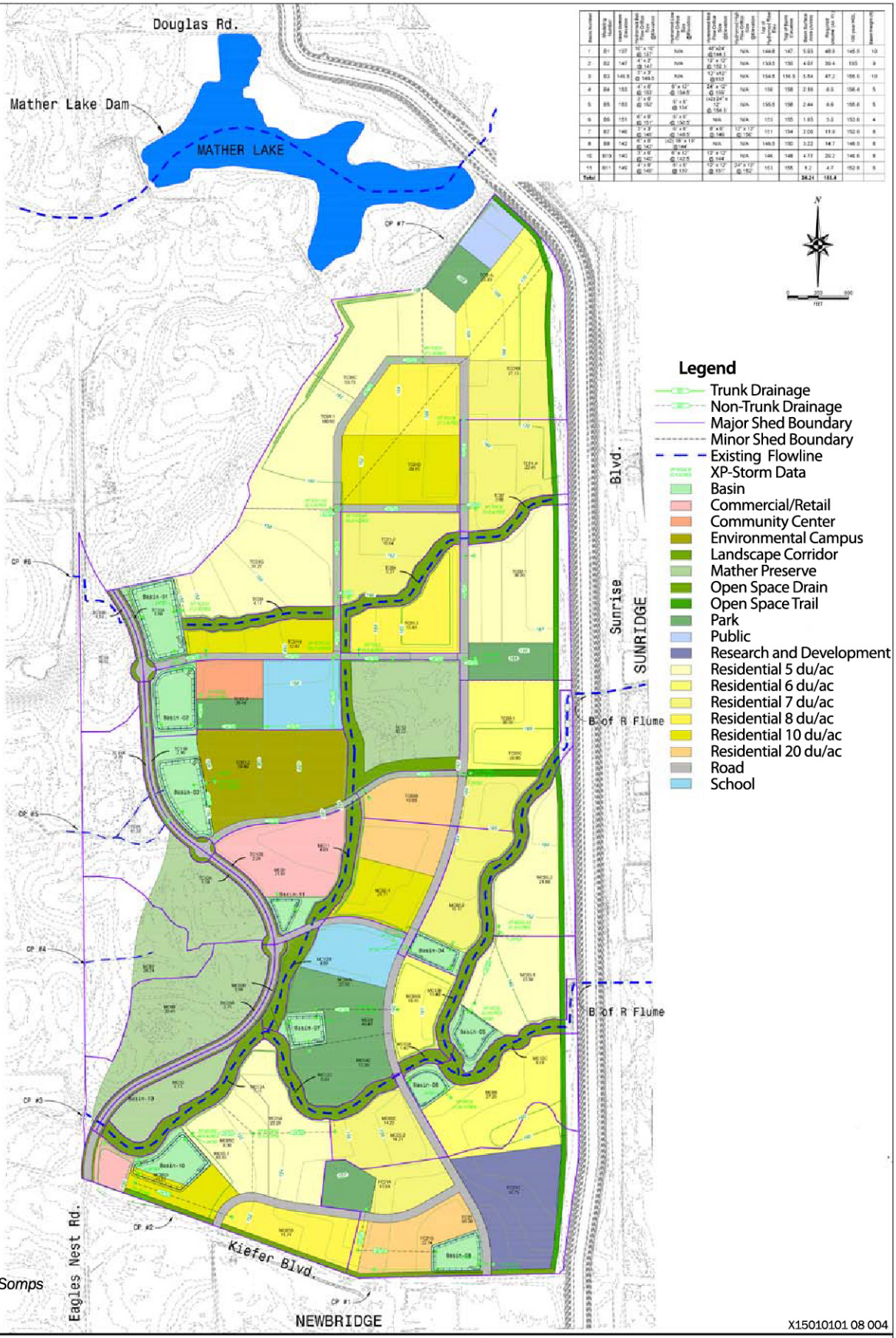
To meet Sacramento County's stormwater quality requirements, the project would incorporate basins to capture the required storm water quality volume as shown in Plate HY-4. It is anticipated that a major portion of the landscape areas would consist of grass, trees, and native vegetation that could function as LID features. ~~There exists the potential to add LID features within the Plan Area during development of the project, however, these improvements are not needed as a part of the required water quality volume to meet the County's standards~~. The proposed basins would function as wet basins under the County's design standards. Table 9 in the Drainage Master Plan provides the required stormwater quality volume summary, in addition to surface coverage acreage, stormwater quality depth, and treatment acreage for each of 10 wet basins. Detailed design of stormwater quality treatment in the basins and grassy swales, and calculations supporting the LID credits is beyond the scope of this report, but would be included in the future drainage studies prepared for small lot tentative map and rezoning approvals within the Plan Area over time.

The proposed stormwater quality basins were conservatively sized assuming no LID features are included in the proposed development. The resulting stormwater quality calculations based on this conservative assumption are included in project drainage plan.

The project's ten (10) multi-purpose detention basins would be designed to attenuate peak flow and hydromodification flow duration control storage as well as provide stormwater quality treatment as permanent pool wet basins. Pursuant to the land plan use plan, approximately 29.0± acre-feet of storage would be provided for stormwater quality. The plan includes additional detention for peak flow attenuation and hydromodification mitigation. The storm water and water quality features throughout the Plan Area are an integrated management system. The detention facilities would be located at the edge of the drainage corridor where they will intercept run-off from the adjacent development areas before the water enters the main corridor. The basins would provide water quality treatment for urban run-off before such water enters the open space areas. Urban run-off water would first flow through the basin where water quality treatment would occur.

SUMMER NUISANCE FLOW CONTROL

Summer nuisance flows have recently become an area of concern for the regulatory agencies. Summer nuisance flows occur during the dry (summer) season and are mostly generated from the developments residents by over irrigation of landscaping, washing of vehicles and other domestic uses that results in water running off the development. Ephemeral tributaries that did not typically receive water runoff during the summer could become a perennial tributary due to summer nuisance flows. A component of the wetland permitting strategy for the project is to retain the ephemeral nature of the creeks and to minimize the potential for the creek becoming a perennial steam after development occurs in the watershed.



Source: Prepared by MacKay & Somps in 2017; adapted by Ascent Environmental in 2018

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Plate HY-4: Developed Condition and Drainage

Accordingly, the Mather South Project addresses the impact of summer nuisance flows by retaining the summer nuisance flow runoff within the detention basins tributary to Frye Creek. These detention basins would be designed as combination water quality / hydromodification / flood control basins. The storm drains pipes for each of these detention basins shed areas discharge into a permanent wet water quality basin which treats the development runoff through gravitational settling and biological processes. Before the development of individual subareas of the Mather South Project, applicants would be required to prepare a drainage study that ensures that summer nuisance flows are retained appropriately.

The *Storm Drainage Master Plan for Mather South* (MacKay & Somps 2017) analyzed the existing and required drainage facilities that are necessary to serve the project and mitigate peak flow, hydromodification, and water quality impacts. Summer nuisance flows are a potentially significant impact.

Mather South Project includes multi-purpose detention basins which include stormwater quality features, that would be kept in the wet condition during the summer months because of the anticipated summer nuisance flows, and hydromodification mitigation features. The project would be required to demonstrate that the detention basins described in the *Storm Drainage Master Plan for Mather South* would mitigate for the development's impacts. Implementation of Mitigation Measure HY-1 ensures that summer nuisance flows are adequately maintained. The *Storm Drainage Master Plan for Mather South* has demonstrated that the project can develop without impacting the predevelopment conditions in the downstream reaches of Morrison Creek, Todd Creek, Frye Creek, and Mather Lake. With implementation of the *Storm Drainage Master Plan for Mather South.* With implementation of Mitigation Measure HY-1 the impact would be reduced to **less than significant with mitigation**.

MITIGATION MEASURES

HY-1. Before Improvement Plan approval, applicants shall submit a drainage study in accordance with the requirements outlined in the "Drainage Study Requirements" document dated June 12, 2008 (or subsequent updates). The study shall describe permanent stormwater quality treatment facilities capable of treating stormwater to the satisfaction of the State Water Board for injection into the Mehrten formation in the infiltration trenches in the basins. Alternate solutions to percolations trenches shall be discussed in the study such as reuse of the collected summer nuisance flows for irrigation of public spaces, or rigorous LID measures, etc.

IMPACT: FLOODING

ON-SITE IMPACTS

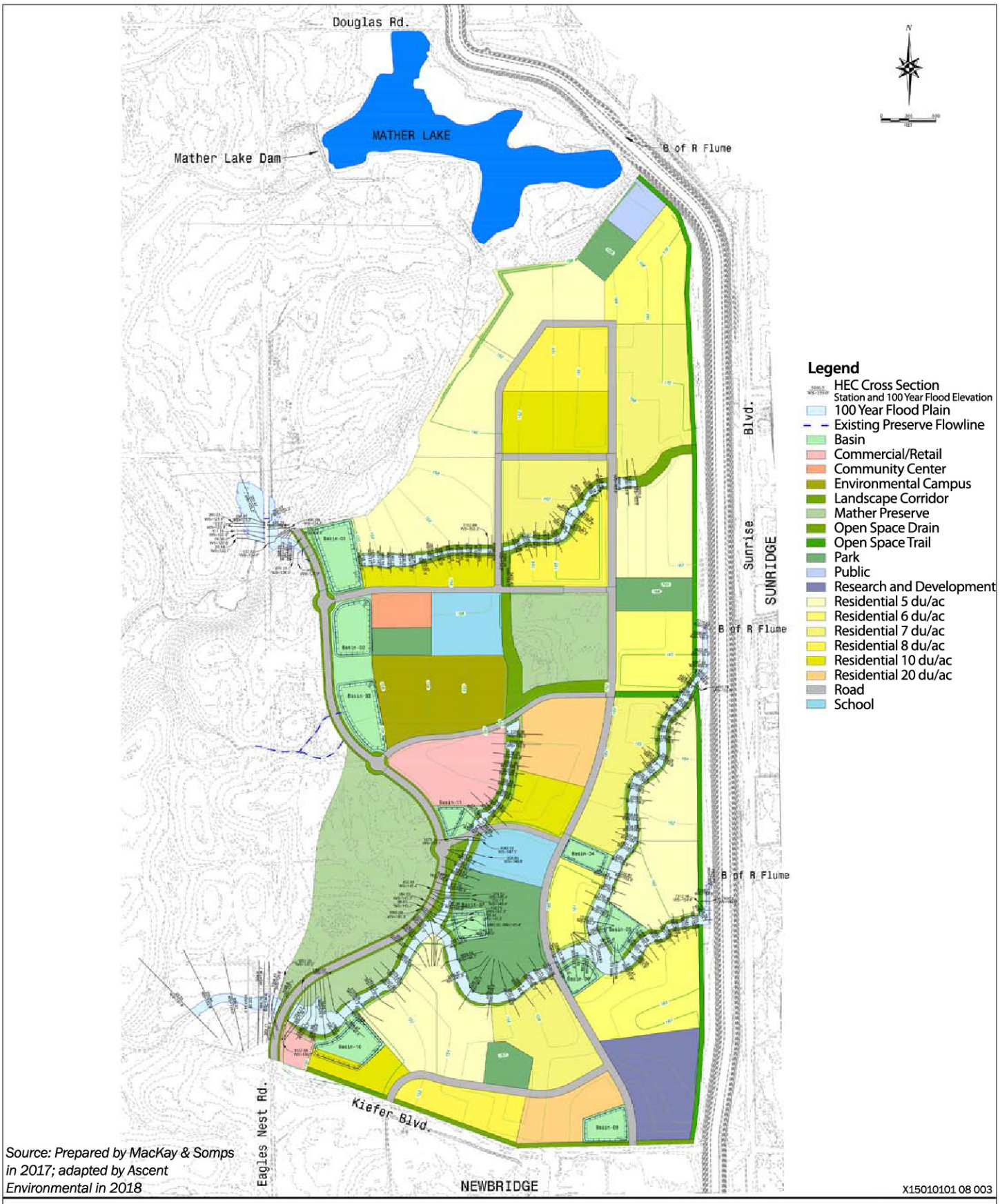
The *Storm Drainage Master Plan for Mather South* (Storm Drainage Plan) analyzes at a plan-level the drainage requirements for buildout of the Mather South Project, and evaluates the proposed drainage facilities to maintain downstream drainage impacts at or below existing conditions. The study establishes a conceptual backbone drainage

system, tributary watersheds, the location of drainage facilities, pre-development and post-development flows, required flood detention and post-project water quality conditions. Because the Storm Drainage Plan is conceptual and prepared for a plan-level analysis, additional detailed design calculations would need to be prepared for subdivision map improvement plans. Pre-development floodplains (Plate HY-3) and post-development floodplains (Plate HY-5) are illustrated in respective figures. As described in the Storm Drainage Plan, the Mather South Plan Area includes both FEMA FIRM 100- and 500-year inundation areas as well as local floodplains. Additionally, build-out of the Plan Area would alter the existing localized drainage conditions present on-site. Therefore, the project has been designed to provide 10 new adequately-sized drainage basins (described above in Hydromodification and illustrated in HY-4) to capture flow so that downstream uses are not adversely affected during normal and flood events. The new detention basins would be located along the Morrison Creek flowing through the Plan Area. Basins would be spaced such that all storm flows would be accepted from upstream development. Other open space areas within the Plan Area would similarly attenuate, mitigate, and treat stormwater runoff from the site before discharge into the neighboring creek systems. Low impact development (LID) features would also be incorporated into the drainage system to mitigate stormwater quality impacts such as native plants and trees, that would slow and filter stormwater. On-site flooding impacts would be less than significant.

Off-Site Impacts

BACKGROUND

The Mather South Project is located in the eastern portion of the Morrison Creek Stream Group which ultimately feeds into the Beach Stone Lakes watershed. The Beach Stone Lakes watershed area is approximately 40,118 acres and regularly floods because of water entering the watershed from the north (Morrison Creek Stream Group), rainfall in Beach Stone Lakes area, and backflow water from the Cosumnes and Mokelumne Rivers to the south. Within the Beach Stone Lakes area is the community of Point Pleasant. Runoff from the Cosumnes and Mokelumne Rivers, and from the Morrison Creek Stream Group combine south of Point Pleasant, generally in the area south of Twin Cities Road and west of Interstate 5. The runoff must flow through the existing network of reclamation district levees before entering the Sacramento River and ultimately the larger Sacramento-San Joaquin Delta. When runoff volumes are high, these flows cannot efficiently move through this system and instead result in the widespread flooding of the lands to the north and east. In these larger events, water is pushed north and begins to flow from the south to the north over Lambert Road, threatening Point Pleasant from the west. Water is also backed up east of I-5 and east of the Union Pacific Railroad/Franklin Boulevard Corridor, and when high enough will flow through existing culverts under the Union Pacific Railroad (UPRR) and Franklin Boulevard and threaten Point Pleasant from the east. The Point Pleasant community has been adversely affected by flooding in storm events in 1986, 1997, and recently in January and February 2017.



Source: Prepared by MacKay & Somps in 2017; adapted by Ascent Environmental in 2018

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Plate HY-5: Developed Condition and 100-year Floodplain

Over the past several decades, the County has studied various flood control proposals to identify a feasible project to provide a significant level of flood protection. Such projects included large scale levee improvements that would effectively create a ring levee around Point Pleasant. The County also established a fund to help mitigate flooding in the Beach Stone Lake/Point Pleasant area. The sources of this funding include one-time mitigation contributions and Mello-Roos funds from the Laguna West/Lakeside development projects (now within the City of Elk Grove); and an existing Beach Stone Lake development impact fee charged to new development in the larger Morrison Creek Stream Group watershed. The mitigation funds were intended to contribute to the large flood protection project. Additionally, the Board authorized the use of interest generated by the funds to pay the annual flood insurance premiums for Point Pleasant residents, which is limited to the Point Pleasant/Beach Stone Lake area on the west side of Franklin Road/UPRR. The Sacramento Area Flood Control Agency (SAFCA) subsequently agreed to cover the flood insurance premiums, and annually reimburses the County Beach Stone Lake mitigation fund for those costs.

In 2007, the Board of Supervisors determined that it was infeasible to pursue the larger levee projects because of the high cost, lack of viable partners, and inability to mitigate the impacts to the floodplain that these projects would create. Instead, the Board redirected staff to use the funds to pursue individual flood protection measures on a property-by-property basis, such as construction of small floodwalls or contributing a portion of the local share towards home elevation projects so that the finish floor elevation is above the Base Flood Elevation.

PROJECT ANALYSIS

The *Beach Stone Lakes Area Impact Analysis Memorandum* (MacKay & Somps, 2018) indicates that while detention basins are designed to capture and keep peak runoff and not exceed existing conditions, an incremental amount of runoff may occur and contribute to the existing flooding condition downstream at the Beach Stone Lakes area. The Mather South Project is designed so that peak flows are attenuated to pre-project conditions; however, there will be more volume leaving the site due to the increase in impervious surfaces. The increased volume of runoff will be conveyed downstream via Frye Creek and Laguna Creek, which are part of the Morrison Creek Stream Group. This analysis assumes there is no potential for volume storage in the downstream creek system. In lieu of performing detailed modeling for the entire Beach Stone Lake/Point Pleasant area, the total volume calculated for the Project can be applied to the Beach Stone Lake/Point Pleasant area with the following assumptions:

- All the volume ends up at Beach Stone Lake/Point Pleasant,
- The volume increase from the Project would occur at the same time as the peak water surface elevation in the Beach Stone Lake/Point Pleasant area,
- The volume increase is applied to the ±14,257-acre area where flood insurance premiums are currently being paid by the County/SAFCA instead of the entire ±40,118-acre Beach Stone Lakes watershed.

These conservative assumptions do not account for the loss of water to evaporation and infiltration as the water moves through the system, and do not take into account the time it would take for the water to travel through the system.

There are 30 residences within the Beach Stone Lake area of which only a few have finished floor elevations at or above the Base Flood Elevation. The calculations indicate that the Mather South Project could add 1/8 of an inch to the water surface elevation in the Beach Stone Lake/Point Pleasant area. This is an indiscernible amount to the regular observer; however, there are two residences that could possibly be flooded that were not previously subject to flooding. The Mather South Project would add to the volume of water which would contribute to an existing floodplain downstream. Additional structures may become flooded or it may increase the duration of flooding to structures already inundated. Therefore, the impacts to off-site flooding are potentially significant.

Mitigation Measure HY-2 requires payment into the County Beach Stone Lakes mitigation fund which provides financial assistance to the programs the County has in place to reduce the cumulative flooding impact. However, flooding would still occur off-site in the Beach Stone Lakes area; therefore, this impact remains **significant and unavoidable**.

MITIGATION MEASURES

HY-2. The Mather South Project shall mitigate its downstream impacts by either of the following options:

a. Payment of the Beach Stone Lakes Mitigation Fee (Sacramento County Water Agency Zone 11A).

b. Ensuring no net project-related increase in volume in Beach Stone Lakes by metering outflow from the Plan Area, increasing storage capacity of onsite facilities, directing drainage into downstream facilities offsite, or other regional drainage solutions as determined by the County Department of Water Resources.

IMPACT: DAM/LEVEE FAILURE

The closest dam to the Plan Area is Mather Dam which provides flood control to the Mather Lake. In 1996 the US Army Corps of Engineers prepared a breach study to analyze the potential impacts of a dam failure at Mather Lake entitled *Mather Lake Dam Breach Study: Morrison Creek Basin, California.* The study concluded that the maximum outflow of a breach at Mather Lake would be approximately 2,000 cubic feet per second with a failure time of four (4) hours. The “dam breach” scenario in the study shows that Zinfandel Drive would be overtopped and the flows from the breach were shown to generally follow the existing path of Morrison Creek to the southwest toward and through the existing Independence at Mather subdivision.

The Plan Area is located over 10 miles south and downslope of Folsom Reservoir. Folsom Dam is approximately 12 miles north of the site. The northern portion of the City of Rancho Cordova (along US 50 and north) is located within the 500-year floodplain

predictions by FEMA and the U.S. Army Corps of Engineers or as a result of complete failure of Folsom Dam. Failure of either the Cordova Meadows Levee or the Sunriver Levee along the American River could also potentially result in the inundation of properties north of the Plan Area (Rancho Cordova 2006). However, the Plan Area is outside of both dam and levee inundation areas. In addition, such an event has an extremely low probability of occurring and is not considered to be a reasonably foreseeable event. The Folsom Dam Safety and Flood Damage Reduction Project (DS/FDR) includes projects that improve dam safety, and provide for flood damage reduction downstream of Folsom Dam. Because of the implementation of the DS/FDR project, the risk of the Plan Area flooding as a result of dam failure would be minimized. Therefore, the risk of dam and/or inundation of the Plan Area would be a **less-than-significant** impact.

MITIGATION MEASURES

None required.

IMPACT: POTENTIAL CLIMATE CHANGE EFFECTS ON THE PROJECT

The standard of practice for planning, designing, and constructing flood protection measures is to identify the probability of inundation, to estimate the associated flow rate, and to take action to prevent property damage or personal injury because of water reaching the level associated with the flow rate. Actions taken to manage flooding can include structural actions, such as the construction of a levee, a detention, or a diversion. Non-structural actions could include floodproofing or constructing property at elevation greater than the stage associated with the design flow rate. Assessment of future flooding hazard potential is critical to the successful planning for flood protection and measures are anticipated to prevent inundation for 50 years or longer. Current science indicates that the climate is changing over time, and flooding potential which is partially driven by climate, may also change. The probability of exceeding a specified flow rate may increase, or the flow rate associated with a specified probability may increase.

At the federal level, Executive Order (EO) 13690, signed in 2015, established a Federal Flood Risk Management Standard (FFRMS). The FFRMS requires federal agencies responsible for flood risk management to accommodate shifting flood frequency in their activities. California Water Code Section 9614(f) requires that the state's Central Valley Flood Protection Plan to consider "the probable impacts of projected climate change…on the ability of the system to provide adequate levels of flood protection."

METHODOLOGY

The Mather South Plan Area is within the watershed of the approximately 180 square mile Morrison Creek Stream Group. Traditional methods for estimating the flow rate for the 10-year and 100-year design event assume that flow rates would not change over time. However, the uncertainty associated with climate change indicates that the potential for flow rates to vary over time in response to changing climate patterns. Because the County does not have adopted hydrologic design standards for climate change, assessment of whether the project could accommodate the changing flow rates

associated with climate change is characterized by evaluating the ability of detention facilities and other associated improvements to withstand additional flows that may be generated from the effects of climate change.

The precipitation and runoff characteristics of the Mather South project under existing and post-development conditions was extensively modeled for the Drainage Master Plan. The results of the analysis indicated that the facilities would provide the required level of protection from the 10-year/24-hour, the 100-year/24-hour and the 100-year/10-day design events. The methodology used to check the resiliency of the Mather South drainage and flood control facilities to control the effects of climate change incorporates projections under climate change scenarios on existing climate discharge frequency curves from the Central Valley Flood Protection Project derived by the California Department of Water Resources. Scaling factors were derived from the analysis for three design events (10-year, 100-year, and 200-year events) and five different durations (1,3,7,15 and 30-days). Sacramento County requested a bookend approach to evaluating the resiliency of the projected Mather South flood control improvements, and scaling factors for Arcade Creek and Pleasant Grove Creek Canal provide an adequate range of impacts for this analysis. Sacramento County DWR suggested that the differences in scaling factors between these two creeks should provide an adequate range of impacts for analysis. Because the climate change analysis relies on scaled-up hydrographs which exaggerate flows, the analysis is considered to be conservative.

CLIMATE CHANGE ANALYSIS

Two models were prepared for the Plan Area (one model for Todd Creek and one for Morrison Creek). For Todd Creek, 12 model scenarios were made for the purposes of scaling the storms to account for climate change and for Morrison Creek, 16 scenarios were created. With one exception, the proposed flood control facilities would maintain climate change flows without overtopping the top of berm elevations of the basins. The one exception is during the 100-year/24-hour event in the Todd Creek model. Under this scenario, there would be an exceedance of about two tenths of a foot over the top of the berm in the worst-case climate change scenario under the Pleasant Grove Creek Canal (PGCC) scenario. If the PGCC scaling factors are adopted, then the proposed design of the basin would need to be redesigned to prevent overtopping during the 100-year PGCC-scaled event. Design changes would be implemented at the time of tentative map preparation and after a climate change standard has been approved by the County.

CONCLUSION

Although the hydrology analysis contained in the Drainage Master Plan demonstrates that the proposed land uses on-site would not be exposed to flooding, there remains some uncertainty regarding future precipitation frequency and intensity because of climate change. The County has not adopted any policies or guidance with regard to the evaluation of hydrologic climate-related impacts. Because of the uncertainty associated with the physical effects of climate change that would be experienced in the Plan Area, it is too speculative to determine with certainty the actual impacts that would occur and render an impact conclusion. The modeling performed for the project is based on a

range of potential climate assumptions (scenarios) that could occur based upon the science as it currently stands. However, climate change science is a rapidly evolving area that is continually subjected to new legislation, policy, and scientific advancement. Concurrently, the County is considering regional policies and solutions to address climate-related impacts, but as of the date of this document, no such solution has been developed.

While the modeling performed for the project shows that changes in precipitation frequency and intensity may result in an increase in runoff in the Plan Area and potential flooding/overtopping of drainage facilities, the County has not adopted a countywide policy directing how new and existing development should assess and plan for hydrologic impacts of climate change. Therefore, a conclusion regarding the actual degree to which flooding or other downstream is too speculative to determine whether the project would be able to adequately accommodate the increased flows from a climate change scenario. Nonetheless, it is acknowledged that some level of planning may be required by the County to address a regional solution to the potential hydrologic impacts that could occur with climate change. Therefore, the County is requiring the implementation of Mitigation Measure HY-3 **to reduce this potential impact to a less-than-significant level.**

MITIGATION MEASURES:

HY-3: At the time of submittal of backbone infrastructure plans, the project applicant shall submit a hydrologic analysis that is based upon adopted County guidance regarding a reasonably foreseeable climate change scenario. Based on the results of the hydrologic analysis and if impacts are identified, the project applicant shall implement all feasible design measures within the project's drainage system to adequately maintain pre-project flows with consideration of climate change effects. Potential improvements could include deepening the existing basin(s) within the Plan Area that would be subject to over-topping. Basin deepening would require minimal construction-related impacts including excavation and hauling of an additional increment of soil from the site. These construction-related impacts have been evaluated throughout this EIR.

Alternatively, if the County has adopted a regional solution for flooding related to climate-change, the project applicant shall contribute its fair share towards funding the construction of the regional solution.

If the County has not developed a regional solution or has not adopted guidance for evaluating hydrologic climate-related impacts, the project applicant shall prepare submit a hydrologic analysis that is based on the best available technical information at that time, in consultation with the County's Department of Water Resources and the Office of Planning and Environmental Review.

13 LAND USE

INTRODUCTION

The Mather Field Project EIR (2016) evaluated the Mather South Plan Area at the plan-level and that analysis is hereby incorporated by reference in this document and summarized below where applicable. This chapter describes the land use context for the project site and its surroundings, including existing land use, land use designations, and zoning. In addition, this chapter includes a summary of applicable land use policies and describes the project's compatibility with adopted land use plans of Sacramento County, including the Sacramento County General Plan, the Cordova Community Plan, and the Mather Field Specific Plan among others.

During the Notice of Preparation (NOP) scoping process, some commenters raised concerns about land use designations, locations and sizes of utility easements, location of school parcels, mix of uses and connectivity, and land use adjacency issues. A copy of the NOP and comment letters received in response to the NOP are included in Appendix PD-2 of this Mather South Project Draft EIR.

ENVIRONMENTAL SETTING

EXISTING CONDITIONS

The Mather South Plan Area covers approximately 848-acres located in the Cordova community of unincorporated Sacramento County. The project site is located approximately 10 miles from downtown Sacramento via Highway 50 and is generally situated within the central portion of Sacramento County. The project is bordered by the City of Rancho Cordova on the north and east, with unincorporated areas of Sacramento County to the south and west (Plate PD-1). The project site is located on an easterly portion of the former Mather Air Force Base and is generally bounded by the Mather Golf Course and Mather Regional Park to the north, the Folsom South Canal to the east, Kiefer Boulevard and the Sacramento Rendering Company to the south and the Mather Preserve and Zinfandel Drive to the immediate west, with the Independence at Mather residential community and active mining uses further west (Plate PD-2).

The project would result in the development of 3,522 residential dwelling units (single-family attached and detached, and multi-family apartments, townhomes, and condominiums), a 28-acre environmental education campus, a 22-acre research and development campus, 21 acres of commercial-retail with up to 225,000 square feet (sq. ft.) of retail space, 44 acres of parkland including 26 acres of neighborhood parks and a 17-acre community park, and 210 acres of open space areas which includes a portion of the Mather Preserve as well as other natural preserves and drainage corridors, storm water quality and detention basins, landscape buffers, and public utility corridors all connected by multi-use pedestrian and bicycle trails. Table LU-1 illustrates the proposed land uses by acreage totals.

Table LU-1: Mather South Community Plan Proposed Land Uses

Land Use	Residential Units	Commercial sq. ft.	Subtotal Acres	Total Acres
Open Space				210.50
Natural Preserve & Creek/Drainage			141.73	
Water Quality/Detention Basin			50.44	
Utility/Trail Corridors			13.48	
Landscape Buffers			4.85	
Parks & Recreation				44.03
Neighborhood			21.55	
Community			22.48	
Environmental Education Campus				27.90
Commercial-Office		275,000	22.90	
Residential RD-20 (20 du/ac)	200		5.00	
Research And Development Campus				21.35
Commercial-Office		325,000	21.35	
Commercial				26.86
Retail		185,000	21.06	
Community Center		15,000	5.80	
Public Facilities				90.43
School			22.19	
Utilities			5.27	
Roadways			62.97	
Residential				427.24
RD-5 (5 du/ac)	849		154.66	
RD-6 (6 du/ac)	476		71.38	
RD-7 (7 du/ac)	628		84.89	
RD-8 (8 du/ac)	338		42.30	
RD-10 (10 du/ac)	449		44.94	
RD-20 (20 du/ac)	581		29.07	
Totals	**3,522**	**800,000**	**848.31**	**848.31**

The Plan Area is included in multiple County plans and, therefore, has multiple overlapping land use designations. These plans will be discussed in greater detail below; however, the Table LU-2 summarizes the existing land use and zoning designations.

Table LU-2: Existing Mather South Plan Area Land Use Designations

	General Plan Land Use Designation	County Zoning District	Mather Field Specific Plan Land Use	Mather Field Special Planning Area Land Use
Plan Area Designation	Urban Development Area (795 acres) Natural Preserve (53.31 acres)	Special Planning Area	Urban Development Area (795 acres) Natural Preserve (53.31 acres)	Urban Development Area (795 acres) Natural Preserve (53.31 acres)

The project would require the following amendment to the County's General Plan to modify the existing land use designations: amend the Land Use Diagram from Urban Development Area (795 acres) to Low Density Residential (622 acres), Medium Density Residential (17 acres), Natural Preserve (86 acres), Commercial and Offices (42 acres), and Public/Quasi-Public (28 acres). Table LU-3 below and Plate PD-10 illustrate the proposed amendments.

Table LU-3: Proposed General Plan Land Use Designations

Existing General Plan Designation	Proposed General Plan Designations	Acre±
Urban Development Area	Low Density Residential	622.0
	Medium Density Residential	17.0
	Natural Preserve	86.0
	Commercial and Offices	42.0
	Public/Quasi-Public	28.0
Total Acres		795.0

The project would also require an amendment to the Mather Field Specific Plan to change a portion of the South Base Area (795 acres) from Urban Development Area (795 acres) to Mather South Community Master Plan (795 acres) (Plate PD-4). Lastly, the project would require the adoption of the Mather South Community Master Plan as an amendment to the Mather Field Specific Plan including text, a Master Plan land use diagram, Design Guidelines and Development Standards.

REGULATORY SETTING

LOCAL

SACRAMENTO COUNTY GENERAL PLAN

The land use policies listed below are included in the Sacramento County General Plan and may be applicable to the project.

OS-1. Actively plan to protect, as open space, areas of natural resource value, which may include but are not limited to wetlands preserves, riparian corridors, woodlands, and floodplains associated with riparian drainages.

OS-13. Permit development clustering in urban areas where grouping of units at a higher density would facilitate onsite protection of woodlands, wetlands, steep slopes, urban stream corridors, scenic areas, or other appropriate natural features as open space, provided that:

- Urban infrastructure capacity is available for urban use.
- On-site resource protection is appropriate and consistent with other General Plan Policies.
- General Plan policies pertaining to floodplain fill or natural preserves would not preclude development of the proposed use in the area to be protected as open space.
- The architecture and scale of development is appropriate for the area.
- Development rights for open space areas are permanently dedicated via conservation easements and appropriate long-term management is provided for by either a public agency or other appropriate entity. (Please also refer to the Conservation Element for related policies).

LU-4. The County shall give priority to residential development on vacant or underutilized sites within existing urban areas that have infrastructure capacity available.

LU-5. All residential projects involving ten or more units, excluding remainder lots and Lot A's, shall not have an average overall density less than 75% of zoned maximums, unless physical or environmental constraints make achieving the minimum densities impractical. For master planned communities with density ranges, this policy will apply to the midpoint of the density range for densities above 15 dwelling units per acre. For density ranges below 15 dwelling units per acre, projects shall not be built out at less than the minimum density of the range.

LU-9. Residential buildout of planned communities shall occur at a minimum of the approved plan densities.

LU-10. Consider private amendment applications that seek to increase densities within planned communities, including in pending and approved Specific Plan areas, when the project area is appropriately designed and sited.

LU-21. Promote a better balance of employment, neighborhood services, and different housing types by reviewing development projects and the surrounding community and designing new projects wherever feasible so that they maintain or improve the mix of uses in the community.

LU-22. Specific Plans and Community Plans should provide a balance of employment, neighborhood services, and different housing types wherever feasible.

LU-23. Providing compact, mixed use developments shall be an integral part of all master planning efforts for new growth areas and commercial corridors.

LU-26. When planning for new development in new communities, the features below shall be incorporated for their public health benefits and ability to encourage more active lifestyles, unless environmental constraints make this infeasible. In existing communities, the features below shall be considered, as appropriate and feasible:

- Where appropriate, compact, mixed use development and a balance of land uses including schools, parks, jobs, retail and grocery stores, so that everyday needs are within walking distance of homes.
- Grid or modified-grid pattern streets, integrated pathways and public transportation that connect multiple destinations and provide for alternatives to the automobile.
- Wide sidewalks, shorter blocks, well-marked crosswalks, on-street parking, shaded streets and traffic-calming measures to encourage pedestrian activity.
- Walkable commercial areas with features that may include doors and windows fronting on the street, street furniture, pedestrian-scale lighting, and served by transit when feasible.
- Open space, including important habitat, wildlife corridors, and agricultural areas incorporated as community separators and appropriately accessible via non-vehicular pathways.

LU-27. Provide safe, interesting and convenient environments for pedestrians and bicyclists, including inviting and adequately-lit streetscapes, networks of trails, paths and parks and open spaces located near residences, to encourage regular exercise and reduce vehicular emissions.

LU-28. Encourage the development of energy-efficient buildings and communities.

LU-29. Promote voluntary participation in incentive programs to increase the use of solar photovoltaic systems in new and existing residential, commercial, institutional, and public buildings.

LU-30. Whenever feasible, incorporate energy-efficient site design, such as proper orientation to benefit from passive solar heating and cooling, into master planning efforts.

LU-38. Community Plans, Specific Plans, and development projects shall be designed to promote pedestrian movement through direct, safe, and pleasant routes that connect destinations inside and outside the plan or project area.

CORDOVA COMMUNITY PLAN

The Cordova Community Plan includes the following land use policies that may apply to the project.

LU-1. Improve the character and quality of existing development through the revitalization of blighted and underutilized development.

LU-2. Emphasize high technology industry, business park uses, and industries such as manufacturing and distribution that provide support for Mather air-cargo operations.

LU-3. Promote a balance between the growth of the air-cargo industry at Mather with the need for housing and residential lifestyles in adjacent neighborhoods.

LU-5. Promote mixed-use concepts that capitalize on synergies between and among different types of land use (e.g., residential and office).

LU-6. Promote high quality, efficient and cohesive land utilization that minimizes negative impacts on adjacent neighborhoods and infrastructure (e.g., traffic congestion and visual blight).

LU-8. Continue the tradition of joint development of parks and schools.

LU-10. Recognize the diversity of the population (based on age, culture and economic status) within the community planning boundaries, and plan land uses according to the needs of this population.

The Cordova Community Plan also includes the following urban design and neighborhood character policies that may apply to the project.

UDNC-1. Provide for commercial districts in new neighborhoods that are integrated into and physically connect with those adjacent neighborhoods.

UDNC-2. Encourage architecture and building design that promotes pedestrian and other multi-model forms of access.

UDNC-5. Ensure that new development reflects local history and architecture, neighborhood concerns, and incorporates features that will help integrate the development into the fabric of the community.

UDNC-7. Encourage the formation of distinct but integrated commercial districts with appropriate focal points, core activity areas, and supporting amenities.

UDNC-8. Promote high-quality architecture, landscape, and streetscape features that enhance the character and identity of activity areas.

UDNC-9. Promote pedestrian-friendly, human-scale urban environments that provide safe and pleasant places for people to live and work.

UDNC-11. Ensure that potentially incompatible and unsafe land uses are separated from residential uses by appropriate transition areas.

UDNC-13. Promote the undergrounding of all electrical utilities.

Sacramento County Zoning Code

The current version of the Sacramento County Zoning Code was adopted by the Board of Supervisors in September 2015 and is used to encourage the most appropriate use of land; to conserve, protect and stabilize the value of property; to provide adequate open space for light and air; to prevent undue concentration of population; to lessen congestion on the streets; to facilitate adequate provisions for community utilities such as transportation, water, sewer, schools, parks and other publicly owned facilities; and to promote public health, safety, and general welfare.

The Mather South Plan Area is zoned Special Planning Area (SPA). The SPA zone is utilized when the countywide zoning regulations do not adequately address local concerns. It is in effect a “mini-Zoning Code” that is established for a defined area. The SPA allows uses, regulations, and standards that would not be allowed under the countywide regulations. The Mather South Special Planning Area Ordinance is the implementing ordinance for the Mather Field Specific Plan which regulates the development standards within the Plan Area.

Mather Field Specific Plan and Special Planning Area Ordinance

The Mather Field Specific Plan was adopted in 1997 to transition the former Mather Field Air Force base to civilian land uses. The purpose of the plan is to guide the evolution of this area in a way that encourages coordinated development and reuse of the site in a manner that responds to local and regional objectives. Chapter 3, Title VI, Article 1, Section 603-10 (Special Planning Area Ordinance) of the Sacramento County Zoning Code regulates improvements and development within the Mather Field Specific Plan Area. It was amended on September 13, 2016 with approval of the Mather Field Project. The amendments established the current Mather Field Project area and Mather

South Plan Area land use designations, established the Mather Preserve, and identified a new alignment for Zinfandel Drive south of Douglas Road.

Mather Airport Comprehensive Land Use Plan and Mather Airfield Airport Planning Policy Area

The Mather South Plan Area is located within the Mather Airport Comprehensive Land Use Plan (CLUP) area and the Mather Airfield Airport Planning Policy Area. The CLUP designates planning boundaries (zones) around the airport and provides guidelines that define compatible types and patterns of future land use. These guidelines fall into three categories: (1) provide height restrictions that aim to protect the navigable airspace around airports for aircraft safety, (2) provide noise compatibility by minimizing the number of people exposed to noise from aircraft operations, and (3) provide for the safety of people on the ground by minimizing the number of people exposed to hazards related to aircraft operations and accidents. The APPA is a space surrounding the Mather Airport that includes the area that contains the 55 community noise equivalent level (CNEL) aircraft noise contour and most of the lower altitude portions of flight tracks for large aircraft flying below 3,000 feet above ground level.

The CLUP and APPA are intended to address uses that are potentially incompatible with airport operations. Project related issues associated with the CLUP and APPA of Mather Airport are addressed in Chapter 7 Airport Compatibility of this EIR.

Sacramento County Urban Services Boundary and Urban Policy Area

According to the Sacramento County General Plan, the Urban Services Boundary (USB) identifies the boundary of the urban limits in the unincorporated county. The Urban Policy Area (UPA) defines the area within the USB that is expected to receive urban levels of public infrastructure and services within the planning period. The General Plan states that the area within the UPA must be able to accommodate growth projected for the 25-year planning period. The USB allows for the permanent preservation of agriculture and rangelands and critical habitat and natural resources, while the UPA concentrates growth within previously urbanized areas, limiting arbitrary and sprawling development patterns. The Mather South Plan Area is within both the UPA and the USB.

Other Relevant Policy or Regulatory Guidance

South Sacramento Habitat Conservation Plan

The South Sacramento Habitat Conservation Plan (SSHCP) was adopted in September 2018 by Sacramento County. Under the federal and state Endangered Species Acts, local jurisdictions using the SSHCP can permit their own projects or extend permit coverage to private applicants for projects that are described in the SSHCP as covered activities. In turn, the SSHCP will provide a comprehensive mitigation strategy for development within the covered area. While the Mather South Plan Area is in the vicinity of the SSHCP, the County removed the entire Mather Field Specific Plan Area

from the covered area in 2004. Therefore, the project is not afforded coverage by the plan.

Sacramento Area Council of Governments

The Sacramento Area Council of Governments (SACOG) is an association of local governments from six counties and 22 cities within the Sacramento Region. The counties include El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba. SACOG is responsible for the preparation of, and updates to, the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) for the region and the corresponding Metropolitan Transportation Improvement Program (MTIP). The MTP/SCS provides a 20-year transportation vision and corresponding list of projects. The MTIP identifies short-term projects (seven-year horizon) in more detail. The current MTP/SCS was adopted by the SACOG board in February 2016.

In 2002 SACOG, in partnership with the region's six counties and cities, launched the Blueprint Project. The Blueprint Project is a comprehensive program that strives to examine how transportation planning and funding could be better linked to land use planning, and to explore alternatives to current land use/transportation patterns for future growth through 2050.

The SACOG Board of Directors adopted the "Preferred Blueprint Scenario" in December 2004, which is a vision for growth in the Sacramento region that promotes compact, mixed-use development and more transit choices as an alternative to low-density development. The "Preferred Scenario" depicts how more compact development patterns and planning for transit options might result in less overall acres developed and less traffic congestion. In particular, the "Preferred Scenario" emphasizes land use patterns that place future residents closer to jobs, and promotes a variety of transportation modes.

The MTP/SCS has been based on the preferred scenario since 2008. In the current MTP/SCS, the Cordova Community Plan area is shown as a developing community bordered on the east by developing communities, on the west and north by established communities, and south by Blueprint Growth Footprint not identified for development during the planning period of the MTP/SCS (SACOG 2016).

Significance Criteria

The evaluation of potential land use effects of the Mather South Project requires a consideration of the existing regulatory framework and requested changes to land use designation, and the potential for physical environmental impacts resulting from those changes.

Based on Appendix G of the State CEQA Guidelines, the project was determined to result in a significant impact to land use if it would:

- physically divide an established community;

- conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, a general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect;
- conflict with any applicable habitat conservation plan or natural community conservation plan; or
- result in conflicts with adjacent land uses.

METHODOLOGY

An evaluation of the potential land use impacts associated with implementation of the Mather South Project was based on a review of planning documents, including the applicable policies of the Sacramento County General Plan, the Cordova Community Plan, the Sacramento Zoning Code, the Mather Field Specific Plan and Special Planning Area Ordinance (SPA Ordinance), Mather Airport CLUP and APPA, and other County regulations affecting planning and implementation of the project.

The project would require an amendment to the Sacramento County General Plan, the Mather Field Specific Plan, and the SPA Ordinance to include the appropriate land use and zoning controls specific to implement the Mather South Community Master Plan. The following amendments would be required to implement the project:

1. A **General Plan Amendment** to amend the County's General Plan Land Use Diagram from Urban Development Area (795 acres) to Low Density Residential (622 acres), Medium Density Residential (17 acres), Natural Preserve (86 acres), Commercial and Offices (42 acres), and Public/Quasi-Public (28 acres). (Plate PD-10)

2. A **General Plan Amendment** to amend the County's General Plan Transportation Plan to reflect proposed roadway alignments and transit systems. (Plate PD-11)

3. A **General Plan Amendment** to amend the County's Bicycle Master Plan to add internal and external bicycle facilities within and through the project area as shown in the Bicycle Master Plan Amendment Diagram. (Plate PD-12)

4. A **Specific Plan Amendment** to amend the Mather Field Specific Plan, to change a portion of the South Base Area (795 acres) from Urban Development Area (795 acres) to Mather South Community Master Plan (795 acres). (Plate PD-13)

5. Adoption of the **Mather South Community Master Plan** as an amendment to the Mather Field Specific Plan including text, a Master Plan land use diagram, Design Guidelines, and Development Standards (Appendix PD-2).

6. A **Zoning Ordinance Amendment** of the SPA Ordinance (SZC 97-0021, Section 603) to incorporate the Mather South Community Master Plan, Design Guidelines, and Development standards into the ordinance.

7. Adoption of a **Development Agreement** for the Mather South Community Master Plan by and between the County of Sacramento and Applicants.

8. Amendment of the Mather Field **Public Facilities Financing Plan**.

Issues Not Discussed Further

This analysis does not include a discussion regarding consistency with SACOG's MTP/SCS. While this regional plan provides some guidance on a preferred land use scenario, SACOG does not have land use authority over this site.

Also, because the Mather South Plan Area is not a covered area under the SSHCP, consistency with the plan is not considered further.

Impacts and Analysis

2016 Mather Field Project EIR Determination

The Mather Field Project EIR evaluated impacts related to land use from implementation of the Mather Field Project which consisted of a realignment of Zinfandel Drive and trunk extension; creation of the Mather Preserve; establishment of an Urban Development Area designation for the Mather South Plan Area.

The EIR concluded that impacts related to the Urban Development Area designation would be less than significant and that analysis can be found on page 4-17. Consistency with plans was determined to be less than significant and is discussed on pages 4-18 through 4-21. Consistency with adjacent land uses was evaluated on pages 4-21 through 4-26 and impacts were determined to be less than significant. This evaluation of impacts is hereby incorporated by reference.

Mather South Project Impacts Determination

Impact: Physically Divide an Established Community

The physical division of a community, as defined by CEQA, would result when a project creates physical barriers within the established community. Examples of such physical barriers could include roadways or other infrastructure improvements.

The Mather South Project would result in the development of a master planned community which would establish a new comprehensive set of land uses that are designed to operate and function together in a cohesive manner. The land upon which the project would be developed is currently vacant, and is adjacent to some residential uses but would not result in the physical division or disruption of those uses.

Additionally, as described in Chapter 1 Project Description, the County is processing several master planned communities concurrently within the same general vicinity as the Mather South Project. The timing and scale of these proposals have the added advantage of planning for synergistic transportation improvements, and other basic infrastructure needs such as electrical generation. As a result, the project and related infrastructure improvements would not result in the physical division of a community, and would in fact, result in efficiencies related to basic service infrastructure. Therefore, the Mather South Project will not disrupt or divide an established community and impacts would be **less than significant**.

MITIGATION MEASURES

None required.

IMPACT: CONFLICT WITH LAND USE PLANS, POLICIES, OR REGULATIONS

CONSISTENCY WITH GENERAL PLAN

The project would require the amendment of the General Plan from the existing Urban Development Area (795 acres) land use designation to a combination of the following: Low Density Residential (622 acres), Medium Density Residential (17 acres), Natural Preserve (86 acres), and Commercial and Offices (42 acres), and Public/Quasi-Public (28 acres). This amendment to redesignate the 885 acres within the Plan Area would allow development of the Mather South Project to commence and is consistent with the County's Board of Supervisors direction to realize the conversion of the former Mather AFB land to a thriving mixed-use community. One of the primary goals of the General Plan is to promote the efficient use of land in Sacramento County by directing new growth to previously urbanized areas and to strategically planned new growth areas. To do this, County policy encourages the use of master or specific plans to prioritize development opportunities and limits new urban development and the provision of urban services to areas within the UPA. The Mather South Community Master Plan would guide the strategic growth of the Plan Area.

The project also includes two additional amendments to the General Plan to implement the Community Master Plan. First, the project would amend the Transportation Plan to reflect proposed roadway alignments and transit systems. This would result in a comprehensive circulation plan that would add new roadways to the County's mapped roads, and provide access throughout and into the Plan Area.

Secondly, the project would amend the County's Bicycle Master Plan to add internal and external bicycle facilities within and through the project area as shown in the Bicycle Master Plan Amendment Diagram which is located in Chapter 4 of the Mather South Community Master Plan, and included in this EIR as Plate PD-12.

The following table shows the policies related to Land Use and applicable to the project, and describes how the project would be consistent.

As described in Table LU-4, below, the project would be consistent with General Plan policies and, therefore, this would be a **less-than-significant** impact.

Table LU-4: Project Consistency with General Plan Policy

Policy	Consistency Discussion
OS-1. Actively plan to protect, as open space, areas of natural resource value, which may include but are not limited to wetlands preserves, riparian corridors, woodlands, and floodplains associated with riparian drainages.	The project would result in the development of an 848-acre master-planned community with residential, commercial, and civic uses. The project would also strategically locate 210-acres of open space (including the 53-acre Mather Preserve on the west size of Zinfandel Drive) within the Plan Area in order to maximize the protection of existing natural wetlands and riparian habitats on the site. Refer to Chapter 8, Biological Resources for a detailed discussion of the open space preservation components of the project. Therefore, the project is consistent with this policy.
OS-13. Permit development clustering in urban areas where grouping of units at a higher density would facilitate on-site protection of woodlands, wetlands, steep slopes, urban stream corridors, scenic areas, or other appropriate natural features as open space, provided that: • Urban infrastructure capacity is available for urban use. • Onsite resource protection is appropriate and consistent with other General Plan Policies. • General Plan policies pertaining to floodplain fill or natural preserves would not preclude development of the proposed use in the area to be protected as open space. • The architecture and scale of development is appropriate for the area. • Development rights for open space areas are permanently dedicated via conservation easements and appropriate long-term management is provided for by either a public agency or other appropriate entity. (Please also refer to the Conservation Element for related policies).	The project land uses within the Plan Area are organized such that higher densities are located in areas that do not contain valuable biological resources. This strategy allows for the maximization of preservation opportunities throughout the site. The project is located within the urban services boundary and as discussed in Chapter 17, Public Utilities, there is adequate infrastructure capacity available for the project. Protecting the onsite resources would be consistent with other general plan policies. Chapter 3, Aesthetics, discusses the architecture and scale of the proposed development and finds that while the visual context will change with urbanization, the scale is appropriate for the development that has been indicated by complementary County planning documents (Mather Field Specific Plan and Mather Field Project). The applicant proposed that the development rights for the protected area would be permanently dedicated. The project would be consistent with this policy.
LU-4. The County shall give priority to residential development on vacant or underutilized sites within existing urban areas that have infrastructure capacity available.	This site is within the USB and has infrastructure capacity available. The project would be consistent with this policy.
LU-5. All residential projects involving ten or more units, excluding remainder lots and Lot A's, shall not have an average overall density less than 75% of zoned maximums, unless physical or environmental constraints make achieving the minimum densities impractical. For master planned communities with density ranges, this policy will apply to the midpoint of the density range for	The existing land use is Urban Development Area which requires the preparation of a Specific Plan. The Mather Field Specific Plan is the guiding document that regulates the density within the Mather South Plan Area. If the project is approved, the upper limit on density would be a maximum of twenty dwelling units per acre. As there is no minimum density and the project would be built at a

Policy	Consistency Discussion
densities above 15 dwelling units per acre. For density ranges below 15 dwelling units per acre, projects shall not be built out at less than the minimum density of the range.	higher density than would generally by allowed by the County's General Plan in accordance with the masterplan, the project would be consistent with this policy.
LU-9. Residential buildout of planned communities shall occur at a minimum of the approved plan densities.	As stated above (for LU-5), the project would be built at a higher density, therefore, the project would be consistent with this policy.
LU-10. Consider private amendment applications that seek to increase densities within planned communities, including in pending and approved Specific Plan areas, when the project area is appropriately designed and sited.	As stated above (for LU-5), the project would be built at a higher density, therefore, the project would be consistent with this policy.
LU-21. Promote a better balance of employment, neighborhood services, and different housing types by reviewing development projects and the surrounding community and designing new projects wherever feasible so that they maintain or improve the mix of uses in the community.	The project would result in the development of up to 3,522 residential dwelling units of various densities (multi-family, detached, and attached single-family), a 28-acre environmental education campus including 200 multi-family dwelling units, a 21-acre research and development park, two elementary schools, a 6-acre community center, 21 acres of commercial-retail with up to 225,000 square feet (sf) of retail space, 44 acres of parkland including 26 acres of neighborhood parks and a 17-acre community park, and 210 acres of open space areas that include a 53-acre portion of the Mather Preserve west of Zinfandel Drive, as well as other natural preserves and drainage corridors, stormwater quality and detention basins, landscape buffers, and public utility corridors all connected by multi-use pedestrian and bicycle trails. This would result in a balanced mix of uses that would co-locate residences with services, in a pedestrian and bicycle emphasized design, which would result in fewer automobile trips, improved air quality, and reduced greenhouse gas emissions. Therefore, the project is consistent with this policy.
LU-22. Specific Plans and Community Plans should provide a balance of employment, neighborhood services, and different housing types wherever feasible.	As stated above (for LU-21), the project would include a balanced mix of uses, therefore, the project would be consistent with this policy.
LU-23. Providing compact, mixed use developments shall be an integral part of all master planning efforts for new growth areas and commercial corridors.	As stated above (for LU-21), the project would include a balanced mix of uses, therefore, the project would be consistent with this policy.
LU-26. When planning for new development in new communities, the features below shall be incorporated for their public health benefits and ability to encourage more active lifestyles, unless environmental constraints make this infeasible. In	As described in detail in Chapter 4 of the Mather South Community Master Plan, the project would be developed with a mix of uses, in a pedestrian-friendly design.

Policy	Consistency Discussion
existing communities, the features below shall be considered, as appropriate and feasible: • Where appropriate, compact, mixed use development and a balance of land uses including schools, parks, jobs, retail and grocery stores, so that everyday needs are within walking distance of homes. • Grid or modified-grid pattern streets, integrated pathways and public transportation that connect multiple destinations and provide for alternatives to the automobile. • Wide sidewalks, shorter blocks, well-marked crosswalks, on-street parking, shaded streets and traffic-calming measures to encourage pedestrian activity. • Walkable commercial areas with features that may include doors and windows fronting on the street, street furniture, pedestrian-scale lighting, and served by transit when feasible. • Open space, including important habitat, wildlife corridors, and agricultural areas incorporated as community separators and appropriately accessible via non-vehicular pathways.	The project is designed around the core commercial and civic uses located along Zinfandel Drive at the midway point of the Plan Area. A majority of the residences would be approximately ½ mile away from the perimeter of the core. This is widely considered a walkable distance in the urban design field. The project would implement a modified street pattern throughout the Plan Area, and would provide ample opportunities to use alternative transportation including, an abundance of sidewalks, bike lanes, a trail network, neighborhood electric vehicle (NEVs) lanes, and funding for transit. The project would include an extensive pedestrian-friendly improvement plan that would feature this type of infrastructure. As described above, the focus of the community would be to create a comprehensive mixed-use community that emphasizes the pedestrian. ~~Over 210~~ **Approximately 142** acres of the 848-acre Plan Area would be devoted to open space and the preservation of habitat. The project would be consistent with this policy.
LU-27. Provide safe, interesting and convenient environments for pedestrians and bicyclists, including inviting and adequately-lit streetscapes, networks of trails, paths and parks and open spaces located near residences, to encourage regular exercise and reduce vehicular emissions.	As stated above (for LU-26), the project emphasizes pedestrians and bicyclist and would include a balanced mix of uses. Therefore, the project would be consistent with this policy.
LU-28. Encourage the development of energy-efficient buildings and communities.	As described in Chapter 7 of the Community Master Plan, the project would be required to implement all energy efficiency design measures in accordance with the County's Zoning Code. Additionally, the project would consider the use of passive solar design, building life-cycle costs, and the use of LEED standards. The project would be consistent with this policy.
LU-29. Promote voluntary participation in incentive programs to increase the use of solar photovoltaic systems in new and existing residential, commercial, institutional, and public buildings.	As described in Chapter 6 of the Community Master Plan, the project is promoting the consideration of passive solar design and the use of solar energy opportunities. The project would be consistent with this policy.
LU-30. Whenever feasible, incorporate energy-efficient site design, such as proper orientation to benefit from passive solar heating and cooling, into master planning efforts.	The project includes the following design guideline: DG 6-8. Passive solar design is encouraged when feasible. Design of buildings shall demonstrate consideration of energy efficient concepts such as natural heating and/or cooling, sun and wind

Policy	Consistency Discussion
	exposure and orientation, and other solar energy opportunities. The project would be consistent with this policy.
LU-38. Community Plans, Specific Plans, and development projects shall be designed to promote pedestrian movement through direct, safe, and pleasant routes that connect destinations inside and outside the plan or project area.	As stated above (for LU-26), the project emphasizes pedestrians and bicyclist and would include a balanced mix of uses. Therefore, the project would be consistent with this policy.

CONSISTENCY WITH CORDOVA COMMUNITY PLAN

The Cordova Community Plan is an extension of the General Plan and provides specific guidance for the development of the area designated by the plan, including the Mather South Plan Area. As described above in the goals and policies listed, the Mather South Project implements the vision of the Cordova Community Plan. For example, the first goal and supportive policies indicate a vision of revitalization that blends a mix of supportive uses, and that can catalyze the undeveloped nature of the old Mather Field site and vicinity. The Mather South Project achieves this goal through the master planning of an 848-acre Plan Area that would result in a mix of supportive land uses that includes residential, commercial, and civic.

The second goal and supportive policies indicate a desire for an integration of neighborhoods with commercial and employment uses that is orderly, well-designed and family friendly. The Mather South Project also illustrates this cohesive vision through the Development Standards included in the Mather South Community Master Plan that would result in a unified landscaping, signage, and neighborhood themed aesthetic. The project is intended to be pedestrian and bicycle friendly and would incorporate trails, sidewalks, bicycle lanes, and civic open space throughout the Plan Area as a means of integrating the different land uses and neighborhoods included in the project.

The project would be consistent with the Cordova Community Plan goals and policies that are applicable to the Plan Area. Impacts would be **less than significant**.

CONSISTENCY WITH THE MATHER FIELD SPECIFIC PLAN AND SPA ORDINANCE

The Mather Field Specific Plan is the existing zoning within the Mather South Plan Area and the SPA Ordinance is the ordinance that implements the Mather Field Specific Plan. The Mather South Project would amend both documents to allow for the development of the project in accordance with the Mather South Community Master Plan. If approved, the Mather Field Specific Plan would be amended to redesignate the portion of the Mather Field Specific Plan that encompasses the Mather South Plan Area, which is called the South Base Area and is currently designated as Urban Development Area (795 acres). It would be changed the Mather South Community Master Plan (795 acres) and would reflect the adoption of the project and all accompanying Design Guidelines and Development Standards contained in the Community Master Plan. The SPA Ordinance would also be amended to reflect adoption of the Mather South Community Master Plan,

Design Guidelines, and Development Standards into the ordinance. Adoption of the Community Master Plan by the County of Sacramento includes adoption of the Development Standards. In general, the Mather Field Specific Plan is the standard for development in the Plan Area; however, in certain conditions relating to the character of the Plan or the need to provide standards for unusual land uses, the standards of the Community Master Plan would take precedence. Where the Plan is silent, the Mather Field Specific Plan would prevail.

The Mather South Project reflects the continued efforts of the County to plan for the orderly development of the Mather South Plan Area and continue the conversion of the former Mather AFB property to a mix of uses that would result in successful economic outcomes and sustained development in the Mather Field Specific Plan area. The project would be consistent with the Mather Field Specific Plan and impacts would be **less than significant**.

CONSISTENCY WITH AIRPORT CLUP AND APPA

The Airport CLUP designates planning boundaries (zones) around the airport and provides guidelines that define compatible types and patterns of future land use. The APPA is a space surrounding the Mather Airport that includes the area that contains the 55 CNEL aircraft noise contour and most of the lower altitude portions of flight tracks for large aircraft flying below 3,000 feet above ground level. As described in detail in Chapter 7 Airport Compatibility of this EIR, the Mather South Project would be developed consistent with all applicable regulations contained with the CLUP and APPA. Impacts are **less than significant**.

In conclusion, the Mather South Project would be consistent with all existing applicable policies, plans, and regulations intended to minimize or eliminate environmental impacts. Therefore, the project's impacts related to this criterion would be **less than significant**.

MITIGATION MEASURES

None required.

Impact: Result in Land Use Conflicts or Adjacency Issues

The Mather Field Project, which was approved in 2016, resulted in the redesignation of the Mather South Plan Area as an Urban Development Area which signaled the intent of the County to pursue a development plan for the area. The Plan Area is also within the Urban Services Boundary and Urban Policy Area which indicates the intent to provide public services to the Plan Area.

The Mather South Project would result in the development of an 848-acre master plan community with up to 3,522 residential dwelling units of various densities (multi-family, detached, and attached single-family), a 28-acre environmental education campus including 200 multi-family dwelling units, a 21-acre research and development park, two elementary schools, a 6-acre community center, 21 acres of commercial-retail with up to 225,000 square feet (sf) of retail space, 44 acres of parkland including 26 acres of

neighborhood parks and a 17-acre community park, and 210 acres of open space areas that include a 53-acre portion of the Mather Preserve west of Zinfandel Drive, as well as other natural preserves and drainage corridors, stormwater quality and detention basins, landscape buffers, and public utility corridors all connected by multi-use pedestrian and bicycle trails. The project has been master-planned and would result in a mix of uses that are designed to complement each other to establish a new full-service community. Development standards and design guidelines would ensure orderly and consistent aesthetics throughout.

The project is surrounded by land that is largely undeveloped, or in various states of agricultural or industrial use. To the southwest of the project are active mining uses, and to the south is an animal rendering facility. The Mather Field Project established protective industrial resource zoning for the southwestern portion of the Mather Field Specific Plan to preserve the present mining activities that are occurring and preclude future development from limiting future extractions of mineral resources.

The animal rendering plant, Sacramento Rendering Company, currently occupies approximately 60-acres along the south side of Kiefer Boulevard, directly across the road from the southern portion of the Plan Area. The facility has existed in this location since 1955 and while there are plans to relocate the use, the timing is uncertain. Rendering plants are generally considered intensive uses, with operations typically occurring 24 hours a day, seven days a week. Rendering plants create loud noise day and night (from trucks and on-site equipment), involve nighttime lighting, and generate objectionable odors. These conditions are potentially incompatible with urban uses, depending upon the degree to which the conditions exist, the distance of the facility to the urban uses, the type of urban use, and other factors such as the direction of prevailing winds and the intervening landscape type. Chapters 4, Air Quality, and 14, Noise, also address the potential for impacts related to the facility.

The Mather Field Project EIR evaluated the potential adjacency issues previously, but the former land use was assumed to be Commercial-Recreation. The Mather Field Project SPA ordinance 603-19 required that future residents of these properties be notified of the possibility of the presence of objectionable odors from time to time. The current Mather South Project includes residential multi-family uses up to 20 dwelling units/acre (R-22 and R-23) directly north of the facility, which would result in approximately 800 feet of distance between the facility's main building and the dwelling units. The rendering facility is currently fenced and screened from view by large pine trees which helps to minimize the aesthetic impacts. Project-specific design details for the residential uses are not available; however, standard conditions imposed on the project at the time of building permits could help alleviate some of the potential for impacts (e.g., fencing or walls, screening, building orientation, double paned windows, etc.). Nonetheless, because no specific measures are currently in place to address potential land use conflicts between sensitive uses and the operations of the Sacramento Rendering Company, this would be a potentially significant impact. Implementation of Mitigation Measures LU-1 and LU-2 would reduce the project's land use conflicts to **less than significant impacts with mitigation**.

MITIGATION MEASURES

LU-1. Require implementation of Mather Field Specific Plan Ordinance Section 603-19 for all properties located within the R-22 and R-23 land use designation along the southern portion of the Plan Area prior to occupancy or sale.

LU-2. At the time of site plan approval, require the implementation of standard conditions to minimize the potential for noise and odor issues resulting from adjacency to the rendering facility including fencing or walls, screening, building orientation, double paned windows, etc.).

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14 NOISE

INTRODUCTION

The Mather Field Project EIR (2016) evaluated noise conditions for the Mather South Plan Area at the plan-level and that analysis is hereby incorporated by reference in this document and summarized as appropriate below. This section describes the existing noise environment in the Plan Area for the Mather South Project and the potential of the project to generate noise levels exceeding the applicable exterior noise level standards at noise-sensitive receptors in areas affected by plan implementation. This section includes analysis of non-transportation noise, ground borne vibration, and transportation noise impacts at existing land uses which could potentially be affected the project as well as news proposed land uses as part of the project. Mitigation measures are included where potentially significance impacts were identified.

During the NOP scoping process, no comments were raised related to noise. A copy of the NOP and comment letters received in response to the NOP are included in Appendix PD-2 of this Mather South Project Draft EIR.

ENVIRONMENTAL SETTING

ACOUSTIC FUNDAMENTALS

Before discussing the noise setting for the project, background information about sound, noise, vibration, and common noise descriptors is needed to provide context and a better understanding of the technical terms referenced throughout this section.

SOUND, NOISE, AND ACOUSTICS

Sound can be described as the mechanical energy of a vibrating object transmitted by pressure waves through a liquid or gaseous medium (e.g., air) to a human ear. Noise is defined as loud, unexpected, annoying, or unwanted sound.

In the science of acoustics, the fundamental model consists of a sound (or noise) source, a receiver, and the propagation path between the two. The loudness of the noise source and obstructions or atmospheric factors affecting the propagation path to the receiver determines the sound level and characteristics of the noise perceived by the receiver. The field of acoustics deals primarily with the propagation and control of sound.

FREQUENCY

Continuous sound can be described by frequency (pitch) and amplitude (loudness). A low-frequency sound is perceived as low in pitch. Frequency is expressed in terms of cycles per second, or hertz (Hz) (e.g., a frequency of 250 cycles per second is referred to as 250 Hz). High frequencies are sometimes more conveniently expressed in

kilohertz, or thousands of hertz. The audible frequency range for humans is generally between 20 Hz and 20,000 Hz.

Sound Pressure Levels and Decibels

The amplitude of pressure waves generated by a sound source determines the loudness of that source. Sound pressure amplitude is measured in micro-Pascals (mPa). One mPa is approximately one hundred billionth (0.00000000001) of normal atmospheric pressure. Sound pressure amplitudes for different kinds of noise environments can range from less than 100 to 100,000,000 mPa. Because of this large range of values, sound is rarely expressed in terms of mPa. Instead, a logarithmic scale is used to describe sound pressure level (SPL) in terms of decibels (dB).

Addition of Decibels

Because decibels are logarithmic units, SPLs cannot be added or subtracted through ordinary arithmetic. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In other words, when two identical sources are each producing sound of the same loudness at the same time, the resulting sound level at a given distance would be 3 dB higher than if only one of the sound sources was producing sound under the same conditions. For example, if one idling truck generates an SPL of 70 dB, two trucks idling simultaneously would not produce 140 dB; rather, they would combine to produce 73 dB. Under the decibel scale, three sources of equal loudness together produce a sound level approximately 5 dB louder than one source.

A-Weighted Decibels

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear.

Human hearing is limited in the range of audible frequencies as well as in the way it perceives the SPL in that range. In general, people are most sensitive to the frequency range of 1,000–8,000 Hz, and perceive sounds within this range better than sounds of the same amplitude with frequencies outside of this range. To approximate the response of the human ear, sound levels of individual frequency bands are weighted, depending on the human sensitivity to those frequencies. Then, an “A-weighted” sound level (expressed in units of A-weighted decibels) can be computed based on this information.

The A-weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments of the relative loudness or annoyance of a sound, their judgment correlates well with the A-scale sound levels of those sounds. Thus, noise levels are typically reported in terms of A-weighted decibels. All sound levels discussed in this section are A-weighted decibels. Table NOI-1 describes typical A-weighted noise levels for various noise sources.

Table NOI-1: Typical A-Weighted Noise Levels

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
	— 110 —	Rock band
Jet fly-over at 1,000 feet	— 100 —	
Gas lawn mower at 3 feet	— 90 —	
Diesel truck at 50 feet at 50 miles per hour	— 80 —	Food blender at 3 feet, Garbage disposal at 3 feet
Noisy urban area, daytime, Gas lawn mower at 100 feet	— 70 —	Vacuum cleaner at 10 feet, Normal speech at 3 feet
Commercial area, Heavy traffic at 300 feet	— 60 —	
Quiet urban daytime	— 50 —	Large business office, Dishwasher next room
Quiet urban nighttime	— 40 —	Theater, large conference room (background)
Quiet suburban nighttime	— 30 —	Library, Bedroom at night
Quiet rural nighttime	— 20 —	
	— 10 —	Broadcast/recording studio
Lowest threshold of human hearing	— 0 —	Lowest threshold of human hearing
Source: Caltrans 2013b: Table 2-5		

HUMAN RESPONSE TO CHANGES IN NOISE LEVELS

As discussed above, the doubling of sound energy results in a 3-dB increase in the sound level. However, given a sound level change measured with precise instrumentation, the subjective human perception of a doubling of loudness will usually be different from what is measured.

Under controlled conditions in an acoustical laboratory, the trained, healthy human ear is able to discern 1-dB changes in sound levels when exposed to steady, single-frequency (“pure-tone”) signals in the mid-frequency (1,000–8,000 Hz) range. In general, the healthy human ear is most sensitive to sounds between 1,000 and 5,000 Hz and perceives both higher and lower frequency sounds of the same magnitude with less intensity (Caltrans 2013a:2-18). In typical noisy environments, changes in noise of 1–2 dB are generally not perceptible. However, it is widely accepted that people are able to begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness (Caltrans 2013a:2-10). Therefore, a doubling of sound energy (e.g., doubling the volume of traffic on a highway) that would result in a 3-dB increase in sound would generally be perceived as barely detectable.

As depicted in Table NOI-2, a noise level increase of 5.0, or greater, would typically be considered to result in increased levels of annoyance where existing ambient noise levels are less than 60 dB. Within areas where the ambient noise level ranges from 60 to 65 dB, increased levels of annoyance would be anticipated at increases of 3 dB, or greater. Increases of 1.5 dB, or greater, could result in increased levels of annoyance in areas where the ambient noise level exceeds 65 dB. The rationale for the Federal Interagency Committee on Noise recommended criteria is that as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause significant increases in annoyance (FICON 1992, FAA 2000).

Table NOI-2: Federal Interagency Committee on Noise Recommended Criteria for Evaluation of Increases in Ambient Noise Levels

Ambient Noise Level Without Project	Increase Required for Significant Impact
<60 dB	5.0 dB, or greater
60–65 dB	3.0 dB, or greater
>65 dB	1.5 dB, or greater
Source: FAA 2000, FICON 1992	

VIBRATION

Vibration is the periodic oscillation of a medium or object with respect to a given reference point. Sources of vibration include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous, (e.g., operating factory machinery) or transient in nature (e.g., explosions). Vibration levels can be depicted in terms of amplitude and frequency, relative to displacement, velocity, or acceleration.

Vibration amplitudes are commonly expressed in peak particle velocity (PPV) or root-mean-square (RMS) vibration velocity. PPV and RMS vibration velocity are normally described in inches per second (in/sec) or in millimeters per second. PPV is defined as the maximum instantaneous positive or negative peak of a vibration signal. PPV is typically used in the monitoring of transient and impact vibration and has been found to correlate well to the stresses experienced by buildings (FTA 2006:7-3, Caltrans 2013b:6).

Although PPV is appropriate for evaluating the potential for building damage, it is not always suitable for evaluating human response. It takes some time for the human body to respond to vibration signals. In a sense, the human body responds to average vibration amplitude. The RMS of a signal is the average of the squared amplitude of the signal, typically calculated over a 1-second period. As with airborne sound, the RMS velocity is often expressed in decibel notation as vibration decibels (VdB), which serves to compress the range of numbers required to describe vibration (FTA 2006:7-4, Caltrans 2013b:7). This is based on a reference value of 1 micro inch per second.

The typical background vibration-velocity level in residential areas is approximately 50 VdB. Ground vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels (FTA 2006:7-8, Caltrans 2013b:27).

Typical outdoor sources of perceptible ground vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur to fragile buildings. Construction activities can generate sufficient ground vibrations to pose a risk to nearby structures. Constant or transient vibrations can weaken structures, crack facades, and disturb occupants (FTA 2006:7-5).

Vibrations generated by construction activity can be transient, random, or continuous. Transient construction vibrations are generated by blasting, impact pile driving, and wrecking balls. Continuous vibrations are generated by vibratory pile drivers, large pumps, and compressors. Random vibration can result from jackhammers, pavement breakers, and heavy construction equipment.

Table NOI-3 summarizes the general human response to different ground vibration-velocity levels.

Table NOI-3: Human Response to Different Levels of Ground Noise and Vibration

Vibration-Velocity Level	Human Reaction
65 VdB	Approximate threshold of perception.
75 VdB	Approximate dividing line between barely perceptible and distinctly perceptible. Many people find that transportation-related vibration at this level is unacceptable.
85 VdB	Vibration acceptable only if there are an infrequent number of events per day.
Notes: VdB = vibration decibels referenced to 1 µ inch/second and based on the RMS velocity amplitude. Source: FTA 2006:7-8	

Common Noise Descriptors

Noise in our daily environment fluctuates over time. Various noise descriptors have been developed to describe time-varying noise levels. The following are the noise descriptors used throughout this section.

Equivalent Continuous Sound Level (L_{eq}): L_{eq} represents an average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound level that actually occurs during the same period (Caltrans 2013a:2-48). For instance, the 1-hour equivalent sound level, also referred to as the hourly L_{eq}, is the energy average of sound levels occurring during a 1-hour period and is the basis for noise abatement

criteria used by California Department of Transportation (Caltrans) and Federal Highway Administration (FHWA) (Caltrans 2013a:2-47, FTA 2006:2-19).

Percentile-Exceeded Sound Level (L_X): L_X represents the sound level exceeded for a given percentage of a specified period (e.g., L_{10} is the sound level exceeded 10 percent of the time, and L_{90} is the sound level exceeded 90 percent of the time) (Caltrans 2013a:2-16).

Maximum Sound Level (L_{max}): L_{max} is the highest instantaneous sound level measured during a specified period (Caltrans 2013a:2-48, FTA 2006:2-16).

Day-Night Level (L_{dn}): L_{dn} is the energy average of A-weighted sound levels occurring over a 24-hour period, with a 10-dB "penalty" applied to sound levels occurring during nighttime hours between 10 p.m. and 7 a.m. (Caltrans 2013a:2-48, FTA 2006:2-22). L_{dn} is sometimes referred to DNL, when specifically discussing aircraft noise exposure.

Community Noise Equivalent Level (CNEL): CNEL is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to sound levels occurring during the nighttime hours between 10 p.m. and 7 a.m. and a 5-dB penalty applied to the sound levels occurring during evening hours between 7 p.m. and 10 p.m. (Caltrans 2013a:2-48). Many agencies and local jurisdictions in California often have established noise standards using the CNEL metric. The CNEL metric is not used by federal agencies and not commonly used in standards established by local communities outside of California.

Sound Propagation

When sound propagates over a distance, it changes in level and frequency content. The manner in which a noise level decreases with distance depends on the following factors:

Geometric Spreading

Sound from a localized source (i.e., a point source) propagates uniformly outward in a spherical pattern. The sound level attenuates (or decreases) at a rate of 6 dB for each doubling of distance from a point source. Roads and highways consist of several localized noise sources on a defined path and hence can be treated as a line source, which approximates the effect of several point sources, thus propagating at a slower rate in comparison to a point source. Noise from a line source propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of 3 dB for each doubling of distance from a line source.

Ground Absorption

The propagation path of noise from a source to a receiver is usually very close to the ground. Noise attenuation from ground absorption and reflective-wave canceling provides additional attenuation associated with geometric spreading. Traditionally, this additional attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is usually sufficiently accurate for distances of less than 200 feet. For acoustically hard sites (i.e., sites with a reflective surface between the

source and the receiver, such as a parking lot or body of water), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface between the source and the receiver, such as soft dirt, grass, or scattered bushes and trees), additional ground-attenuation value of 1.5 dB per doubling of distance is normally assumed. When added to the attenuate rate associated with cylindrical spreading, the additional ground attenuation results in an overall drop-off rate of 4.5 dB per doubling of distance. This would hold true for point sources, resulting in an overall drop-off rate of up to 7.5 dB per doubling of distance.

ATMOSPHERIC EFFECTS

Receivers located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lowered noise levels, as wind can carry sound. Sound levels can be increased over large distances (e.g., more than 500 feet) from the source because of atmospheric temperature inversion (i.e., increasing temperature with elevation). Other factors such as air temperature, humidity, and turbulence can also affect sound attenuation.

SHIELDING BY NATURAL OR HUMAN-MADE FEATURES

A large object or barrier in the path between a noise source and a receiver attenuate noise levels at the receiver. The amount of attenuation provided by shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dB of noise reduction (Caltrans 2013a:2-41, FTA 2006:5-6, 6-25). Barriers higher than the line of sight provide increased noise reduction (FTA 2006:2-12). Vegetation between the source and receiver is rarely effective in reducing noise because it does not create a solid barrier unless there are multiple rows of vegetation (FTA 2006:2-11).

EXISTING NOISE LEVELS

The primary noise sources within the Plan Area and vicinity is vehicle traffic along roadways adjacent to and near the project site and aviation-related noise from nearby Mather Field Airport (refer to Chapter 5 Airport Compatibility for Mather Field noise-related issues). Roadways in close proximity to the Plan Area include Jackson Road, Excelsior Road, Sunshine Boulevard, directly to the east, and Douglas Road, directly to the north. Noise modeling for roadway traffic noise levels was conducted using data (i.e. daily traffic volumes, vehicle speeds) included in the Traffic Impact Analysis (TIA) conducted for this EIR. For full details on traffic noise modeling results (e.g., noise contours), see Appendix NOI-1**.** Table NOI-14 under Impact NOI-3 provides the existing traffic noise levels for all roadway segments included in the TIA.

SACRAMENTO RACEWAY

The Sacramento Raceway is located 1.3 miles southwest of the southwest corner of the Plan Area. The raceway property contains an oval track, a drag strip, a motocross course, spectator stands, concessions buildings and various other structures for storage. The facility is home to race events including pro-drag races, street-legal drag

races, motocross motorcycle races, and stock car races throughout the year. Both continuous and short-term noise level measurements were conducted during three race events in 2013, including a street-legal drag race on August 7, a motocross motorcycle race on August 9, and a pro-drag race on August 10. Plate NOI-1 illustrates noise contours for the 75 dB L_{max} and 55 dB hourly L50 noise levels measures for the loudest event which was identified as the drag racing events.

As shown in Plate NOI-1, the noise contours from the drag racing event cover a substantial portion of the Jackson Township Plan Area which is shown by the dotted black line on the figure. The Mather South Specific Plan area is located approximately ½ mile to the northeast of the Jackson Township Specific Plan area. The 75 dB L_{max} noise contours from the street-legal drag race event extend outside of the raceway property, but not to the same extent as the drag race event. The 75 dB L_{max} noise contours from motocross motorcycle event are contained entirely within the raceway property. None of the Sacramento Raceway noise contour lines are within the Plan Area.

Stationary Noise Sources

Sacramento Rendering Company is located near the southern border of the Plan Area, on the south side of Kiefer Boulevard. The facility is located approximately 700 feet south of the project boundary. Based on noise monitoring included in the Sunrise Douglas Community/Sunridge Specific Plan (2002), the noise level at the entrance of the site (approximately 500 feet from the facility) was 50 dB. The primary noise source associated with the facility is the approximately 90 truck trips per day which bring deliveries to the site (City of Rancho Cordova 2006).

Existing Sensitive Receptors

The Plan Area is located adjacent to the City of Rancho Cordova, whose city boundary begins on the east side of Sunrise Boulevard. A low-density residential neighborhood (Anatolia Village) is located to the east of Sunrise Boulevard with the nearest residential units approximately 500 feet from the project boundary. Additionally, a low-density residential neighborhood is located approximately 2,250 feet to the west of the western project boundary.



Source: Image provided by J.C.Brennan & Associates

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Plate NOI-1: Sacramento Raceway Drag Strip Noise Contour

ASCENT ENVIRONMENTAL

REGULATORY SETTING

STATE

CALIFORNIA GENERAL PLAN GUIDELINES

The State of California 2017 General Plan Guidelines, published by the California Governor's Office of Planning and Research (2017), provides guidance for the compatibility of projects within areas of specific noise exposure. Acceptable and unacceptable community noise exposure limits for various land use categories have been determined to help guide new land use decisions in California communities. In many local jurisdictions, these guidelines are used to derive local noise standards and guidance. Citing the U.S. Environmental Protection Agency materials and the State Sound Transmissions Control Standards, the State's general plan guidelines recommend interior and exterior CNEL of 45 and 60 dB for residential units, respectively (OPR 2017:378).

CALIFORNIA DEPARTMENT OF TRANSPORTATION

In 2013, Caltrans published the Transportation and Construction Vibration Manual (Caltrans 2013b). The manual provides general guidance on vibration issues associated with construction and operation of projects in relation to human perception and structural damage. Table NOI-4 presents recommendations for levels of vibration that could result in damage to structures exposed to continuous vibration.

Table NOI-4: Caltrans Recommendations Regarding Levels of Vibration Exposure

PPV (in/sec)	Human Reaction	Effect on Buildings
0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Architectural damage and possible minor structural damage
0.2	Vibrations may begin to annoy people in buildings	Risk of architectural damage to normal dwelling houses
0.1	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Virtually no risk of architectural damage to normal buildings
0.08	Vibrations readily perceptible	Recommended upper limit of vibration to which ruins and ancient monuments should be subjected
0.006-0.019	Range of threshold of perception	Vibration unlikely to cause damage of any type
Notes: PPV= Peak Particle Velocity; in/sec = inches per second Source: Caltrans 2013a		

LOCAL

SACRAMENTO COUNTY GENERAL PLAN

The following policies related to noise are contained within the Sacramento County General Plan.

TRAFFIC AND RAILROAD NOISE SOURCES

NO-1. The noise level standards for noise-sensitive areas of *new* uses affected by traffic or railroad noise sources in Sacramento County are shown by Table NOI-5. Where the noise level standards of NOI-5 are predicted to be exceeded at new uses proposed within Sacramento County which are affected by traffic or railroad noise, appropriate noise mitigation measures shall be included in the project design to reduce projected noise levels to a state of compliance with the NOI-5 standards.

Table NOI-5: Noise Standards for New Uses Affected by Traffic and Railroad Noise

New Land Use	Sensitive Outdoor Area – Ldn	Sensitive Interior Area – Ldn
All Residential[5]	65	45
Transient lodging[3,5]	65	45
Hospitals and nursing homes[3,4,5]	65	45
Theaters and auditoriums[3]	None	35
Churches, meeting halls, schools, libraries, etc.[3]	65	40
Office buildings[3]	65	45
Commercial buildings[3]	None	50
Playgrounds, parks, etc.	70	None
Industry[3]	65	50

Sensitive areas are defined in acoustical terminology section.

Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.

Where there are no sensitive exterior spaces proposed for these uses, only the interior noise level standard shall apply.

Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation either by hospital staff or patients.

If this use is affected by railroad noise, a maximum (L_{max}) noise level standard of 70 dB shall be applied to all sleeping rooms to reduce the potential for sleep disturbance during nighttime train passages.

AIRCRAFT NOISE SOURCES

NO-2. Proposals for new development within Sacramento County which may be affected by aircraft noise shall be evaluated relative to Table 4 (*of the Sacramento County Noise Element*): Land Use Compatibility for Aircraft Noise.

NO-3. New residential development within the 60 CNEL noise contours adopted by the County for planning purposes at any airport or Helipad within Sacramento County shall be prohibited. This policy is not applicable to Executive Airport.

NO-4. New residential development within adopted Airport Policy Area boundaries, but outside the 60 CNEL, shall be subject to the following conditions:

A. Provide minimum noise insulation to 45 dB CNEL within new residential dwellings, including detached single-family dwellings, with windows closed in any habitable room.

B. Notification in the Public Report prepared by the California Department of Real Estate disclosing the fact to prospective buyers that the parcel is located within an Airport Policy Area.

C. An Avigation Easement prepared by the Sacramento County Counsel's Office granted to the County of Sacramento, recorded with the Sacramento County Recorder, and filed with Department of Airports. Such Avigation Easement shall acknowledge the property location within an Airport Planning Policy Area and shall grant the right of flight and unobstructed passage of all aircraft into and out of the subject Airport.

Exceptions: New accessory residential dwellings on parcels zoned Agricultural, Agricultural-Residential, Interim Agricultural, Interim General Agricultural, or Interim Limited Agricultural and between the 60 and 65 CNEL contours, shall be permitted within adopted Airport Policy Area boundaries, but would be subject to the conditions listed above.

NON-TRANSPORTATION NOISE SOURCES

NO-5. The interior and exterior noise level standards for noise-sensitive areas of new uses affected by existing non-transportation noise sources in Sacramento County are shown by NOI-6. Where the noise level standards of NOI-6 are predicted to be exceeded at a proposed noise-sensitive area due to existing non-transportation noise sources, appropriate noise mitigation measures shall be included in the project design to reduce projected noise levels to a state of compliance with the NOI-6 standards within sensitive areas.

Table NOI-6: Sacramento County Non-Transportation Noise Standards

New Land Use	Sensitive Outdoor Area [Median (L50) / Maximum (L_{max})]		Sensitive Interior Area[3] [Median (L50) / Maximum (L_{max})]
	Daytime	Nighttime	Day & Night
All Residential	55 / 75	50 / 70	35/55
Transient lodging[4]	55 / 75	---	35/55
Hospitals and nursing homes[5,6]	55 / 75	---	35/55
Theaters and auditoriums[6]	---	---	30/50
Churches, meeting halls, schools, libraries, etc.[6]	55 / 75	---	35/60
Office buildings[6]	60 / 75	---	45/65
Commercial buildings[6]	---	---	45/65
Playgrounds, parks, etc[6]	65 / 75	---	None
Industry[6]	60 / 80	---	50/70

Notes: The NOI-6 standards shall be reduced by 5 dB for sounds consisting primarily of speech or music, and for recurring impulsive sounds. If the existing ambient noise level exceeds the standards of NOI-6, then the noise level standards shall be increased at 5 dB increments to encompass the ambient.

Sensitive areas are defined acoustic terminology section

Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions

Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours.

Hospitals are often noise-generating uses. The exterior noise level standards for hospitals are applicable only at clearly identified areas designated for outdoor relaxation by either hospital staff or patients.

The outdoor activity areas of these uses (if any), are not typically utilized during nighttime hours.

Where median (L50) noise level data is not available for a particular noise source, average (L_{eq}) values may be substituted for the standards of this table provided the noise source in question operates for at least 30 minutes of an hour. If the source in question operates less than 30 minutes per hour, then the maximum noise level standards shown would apply.

TRANSPORTATION PROJECTS

NO-9. For capacity enhancing roadway or rail projects, or the construction of new roadways or railways, a noise analysis shall be prepared in accordance with the Table NOI-5 requirements. If projected post-project traffic noise levels at existing uses exceed the noise standards of Table NOI-5, then feasible methods of reducing noise to levels consistent with the Table NOI-5 standards shall be analyzed as part of the noise analysis. In the case of existing residential uses, sensitive outdoor areas shall be mitigated to 60 dB, when possible, through the application of feasible methods to reduce noise. If 60 dB cannot be achieved after the application of all feasible methods of reducing noise, then noise levels up to 65 dB are allowed.

If pre-project traffic noise levels for existing uses already exceed the noise standards of Table NOI-5 and the increase is significant as defined below, feasible methods of reducing noise to levels consistent with the Table NOI-5 standards should be applied. In no case shall the long-term noise exposure for non-industrial uses be greater than 75 dB; long-term noise exposure above this level has the potential to result in hearing loss.

A significant increase is defined as follows:

Table NOI-7: Sacramento County Noise Ordinance

Pre-Project Noise Environment (Ldn)	Significant Increase
Less than 60 dB	5+ dB
60 – 65 dB	3+ dB
Greater than 65 dB	1.5+ dB
Source: Sacramento County General Plan, Noise Chapter, Table NO 4	

NO-11. If noise-reducing pavement is to be utilized in conjunction with a roadway improvement project, of if such paving existing adjacent to a proposed new noise-sensitive land use, the acoustical benefits of such pavement shall be included in the noise analysis prepared for the project.

CONSTRUCTION NOISE

NO-8. Noise associated with construction activities shall adhere to the County Code requirements. Specifically, Section 6.68.090(e) addresses construction noise within the County.

GENERAL NOISE POLICY

NO-12. All noise analyses prepared to determine compliance with the noise level standards contained within the Noise Element shall be prepared in accordance with Table 3 of the Sacramento County Noise Element.

The requirements as listed are that an acoustical analysis shall:

1. Be the responsibility of the applicant.

2. Be prepared by qualified persons experienced in the fields of environmental noise assessment and architectural acoustics.

3. Include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions.

4. Estimate projected future (20 year) noise levels in terms of the Standards of Tables 1 and 2, and compare those levels to the adopted policies of the Noise Element.

5. Recommend appropriate mitigation to achieve compliance with the adopted policies and standards of the Noise Element.

6. Estimate interior and exterior noise exposure after the prescribed mitigation measures have been implemented.

NO-13. Where noise mitigation measures are required to satisfy the noise level standards of the Noise Element, emphasis shall be placed on the use of setbacks and site design to the extent feasible, prior to consideration of the use of noise barriers.

NO-14. Noise analyses prepared for multi-family residential projects, town homes, mixed-use, condominiums, or other residential projects where floor ceiling assemblies or party-walls shall be common to different owners/occupants, shall be consistent with the State of California Noise Insulation standards.

NO-15. The County shall have the flexibility to consider the application of 5 dB less restrictive exterior noise standards than those prescribed in Tables NOI-5 and NOI-6 (*Tables 1 and 2 of the Sacramento County General Plan Noise Element*) in cases where it is impractical or infeasible to reduce exterior noise levels within infill projects to a state of compliance with the Table NOI-5 or NOI-6 standards (*Tables 1 and 2 of the Sacramento County General Plan Noise Element*). In such cases, the rational for such consideration shall be clearly presented and disclosure statements and noise easements should be included as conditions of project approval. The interior noise level standards of Tables NOI-5 and NOI-6 (*Tables 1 and 2 of the Sacramento County General Plan Noise Element*) would still apply. The maximum allowable long-term noise exposure permissible for non-industrial uses is 75 dB.

EXEMPTIONS

NO-16. The following sources of noise shall be exempt from the provisions of this Noise Element:

a. Emergency warning devices and equipment operated in conjunction with emergency situations, such as sirens and generators which are activated during power outages. The routine testing of such warning devices and equipment shall also be exempt provided such testing occurs during daytime hours.

b. Activities associated with events for which a permit has been obtained from the County.

Table NOI-8: Land Use Compatibility for Airport Noise for all public use airports except for Sacramento International Airport[1]

Land Use Designation	60-65 CNEL	65-70 CNEL	70-75 CNEL	75-80 CNEL	80-85 CNEL
Residential					
Single-family detached	No	No	No	No	No
Two-family dwelling	No	No	No	No	No
Multi-Family Dwelling	No	No	No	No	No
Public and Quasi-Public Services					
Elementary and Secondary schools	Yes	Yes[2,3]	No	No	No
Colleges and Universities	Yes	Yes[2,3]	No	No	No
Recreation					
Community-wide and regional parks	Yes	Yes	Yes[1]	No	No
Open space and natural areas	Yes	Yes	Yes[1]	Yes[1]	Yes[1]
Retail Trade	Yes	Yes	Yes	Yes	No
Business and Retail Trade	Yes	Yes	Yes	Yes	No

Note: This table has been modified to display only land uses within the table that will be built as part of the project. For the full table see Table 4 of the Sacramento County General Plan.

1. In the case of Sacramento International Airport, use the Land Use Compatibility Plan prepared for Sacramento International Airport dated December 12, 2013, adopted herein by reference.)
2. Measures to achieve an interior noise level of 50 CNEL must be incorporated into the design and construction of portions where the public is received, office areas, and other areas where people work or congregate.
3. Measures to achieve an interior noise level of 45 CNEL must be incorporated into the design and construction of all noise sensitive areas including, but not limited to, rooms designed for the purpose of sleep, libraries, churches, and areas intended for indoor entertainment events.

Source: Sacramento County General Plan Noise Element (2017)

Sacramento County Noise Control Ordinance

The County's Noise Control Ordinance sets limits for exterior noise levels on some designated agricultural-residential and all residential properties. The Noise Ordinance does not apply to noise levels at agriculturally zoned properties. The standards found in the County's Noise Control Ordinance are based on the duration of noise on private property over one-hour periods. The ordinance is primarily concerned with regulating noise other than noise generated by transportation noise sources (e.g., passing cars or aircraft flyovers). The ordinance limits the duration of noise based on many factors, including the type of source, tonal characteristics of the source, ambient noise levels, time of day, etc., by utilizing a system of noise criteria not to be exceeded based on the duration of noise over any given hour. Construction noise is specifically exempted from the Noise Ordinance (Sacramento County Code Section 6.68).

Table NOI-9 summarizes the Noise Ordinance standards. In recognition of ambient noise, the ordinance allows the standards set forth in Table NOI-9 to be adjusted in 5 dBA increments to encompass the ambient noise level. For example, if the ambient noise level for a given hour was 57 dBA, the daytime L_{50} noise standard would be

increased to 60 dBA. The Noise Control Ordinance also states that each of the standards identified in NOI-9 should be reduced by 5 dBA for impulsive or simple tone noises[1], or for noises consisting of speech or music.

Table NOI-9: Sacramento County Noise Ordinance

Cumulative Duration of the Intrusive Sound	Descriptor	Exterior Noise Standard, dB	
		Daytime (7am – 10pm)	Nighttime (10pm – 7am)
30 – 60 minutes per hour	L_{50}	55	50
15 – 30 minutes per hour	L_{25}	60	55
5 – 15 minutes per hour	L_{08}	65	60
1 – 5 minutes per hour	L_{02}	70	65
Level not to be exceeded at any time	L_{max}	75	70
Source: Sacramento County, Noise Control Ordinance. Chapter 6.68.070			

Section 6.68.070 of the Sacramento County Code contains exterior noise standards for specific zoning districts. The project is currently zoned as an Urban Development Area. under the County's General Plan. The lots adjacent to the Plan Area in the County are all zoned for agricultural-residential with between 1-acre minimum lots to 10-acre minimum lots. The exterior noise standards for the zoning districts detailed above is 55 dB between 7 a.m. and 10 p.m. and 50 dB between 10 p.m. and 7 a.m.

Section 6.68.090 of the Sacramento County Code provides the following exemption to the exterior noise standards:

> Noise sources associated with construction, repair, remodeling, demolition, paving or grading of any real property, provided said activities do not take place between the hours of eight p.m. and six a.m. on weekdays and Friday commencing at eight p.m. through and including seven a.m. on Saturday; Saturdays commencing at eight p.m. through and including seven a.m. on the next following Sunday and on each Sunday after the hour of eight p.m. Provided, however, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after eight p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner.

In addition to the day and nighttime thresholds set for the various land uses for non-transportation noise source, the County Code also includes specific regulation about the use of noise generating mechanical equipment. Sacramento County Noise Ordinance Section 6.68.120 Machinery, Equipment, Fans and Air Conditioning establishes the following:

a. It is unlawful for any person to operate any mechanical equipment, pump, fan, air conditioning apparatus, stationary pumps, stationary cooling towers, stationary compressors, similar mechanical devices, or any combination thereof installed after July 1, 1976 in any manner so as to create any noise which would cause the maximum noise level to exceed:

    1. Sixty dBA at any point at least one foot inside the property line of the affected residential property and three to five feet above ground level;

    2. Fifty-five dBA in the center of a neighboring patio three to five feet above ground level;

    3. Fifty-five dBA outside of the neighboring living area window nearest the equipment location. Measurements shall be taken with the microphone not more than three feet from the window opening but at least three feet from any other surface.

b. Equipment installed five years after July 1, 1976 must comply with a maximum limit of fifty-five dBA at any point at least one foot inside the property line of the affected residential property and three to five feet above ground level.

c. Equipment installed before December 17, 1970 must comply with a limit of sixty-five dBA maximum in sound level at any point at least one foot inside the affected property line and three to five feet above ground level by January 1, 1977. Equipment installed between December 16, 1970 and July 1, 1976 must comply with a limit of sixty-five dBA maximum sound level at any point at least one foot inside the property line of the affected residential property and three to five feet above ground level. (SCC 254 § 1, 1976.)

City of Rancho Cordova General Plan

The Plan Area is located adjacent to the City of Rancho Cordova, whose city boundary runs along Sunrise Boulevard and directly east of the project site. The following goals and policies in the City of Rancho Cordova General Plan are included below as they relate to potential noise sources generated from project implementation.

Policy N.2.2 Ensure that operational noise levels of new roadway projects will not result in significant noise impacts.

Policy N.2.3 Emphasize mitigation methods other than soundwall installation to reduce noise to acceptable levels in residential areas originally constructed without soundwalls.

Table NOI-10: Maximum Transportation Noise Exposure

Land Use	Outdoor Activity Areas[1] Ldn/CNEL, dB	Interior Spaces	
		Ldn/CNEL, dB[2]	Leq, dB[2]
Residential	60[3]	45	--
Residential subject to noise from railroad tracks, aircraft overflights, or similar noise sources which produce clearly identifiable, discrete noise events (e.g., the passing of a single train)	60[3]	40[5]	--
Transient lodging	60[4]	45	--
Hospitals, nursing homes	60[3]	45	--
Theaters, auditoriums, music halls	--	--	35
Churches, meeting halls	60[3]	--	40
Office buildings	--	--	45
Schools, libraries, museums	--	--	45
Playgrounds, neighborhood parks	70	--	--

1. Where the location of outdoor activity areas is unknown, the exterior noise level standard shall be applied to the property line of the receiving land use. Where it is not practical to mitigate exterior noise levels at patio or balconies of apartment complexes, a common area such as a pool or recreation area may be designated as the outdoor activity area.
2. As determined for a typical worst-case hour during periods of use.
3. Where it is not possible to reduce noise in outdoor activity areas to 60 dB Ldn/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB Ldn/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.
4. In the case of hotel/motel facilities or other transient lodging, outdoor activity areas such as pool areas may not be included in the project design. In these cases, only the interior noise level criterion will apply.
5. The intent of this noise standard is to provide increased protection against sleep disturbance for residences located near railroad tracks.

Source: City of Rancho Cordova, Municipal Code Chapter 6.68.070

Sacramento County Design Guidelines

The Sacramento County Design Guidelines provide a set of cohesive design principles to implement the County's General Plan. The purpose of design guidelines is to create design recommendations and standards for review of projects that are easy to understand and will result in well-designed and sustainable projects that raise the overall design quality of development occurring within the County. The following design policies pertain specifically to addressing noise impacts for development projects.

4.2.8 Transition to Residential Areas

New and renovated projects should be designed to enhance adjacent residential neighborhoods and promote active transportation from these neighborhoods rather than autos for short trips. Projects should be designed to reduce the visual, noise and use impacts on adjacent residential areas.

4.6 OPERATIONAL ELEMENTS

- In many cases, the proposed use of a building or the operational characteristics of the use may influence site design. Public and private spaces often have different screening and safety needs, and the intended hours or anticipated noise levels may influence the entryways, lighting, access, and orientation of the building, particularly when located close to a residential neighborhood. The following guidelines should be considered in the site design for all new or substantially renovated commercial, mixed-use and employment projects, and also incorporated into future business practices.

6.3.6 SERVICE AREAS

- Service and loading dock areas in village centers should be placed in locations that are not visually prominent and be screened from view.

CITY OF RANCHO CORDOVA MUNICIPAL CODE

Section 6.68.070 of the City of Rancho Cordova's Municipal Code establishes exterior noise standards for various noise sensitive land uses within City limits. These standards are shown in Table NO-11.

Table NOI-11: Rancho Cordova Exterior Noise Standards

City Zoning District	Exterior Noise Standard, dB	
	Daytime (7am – 10pm)	Nighttime (10pm – 7am)
RE-1, RD-1, RE-2, RD-2, RE-3, RD-3, RD-4, R-1-A, RD-5, R-2, RD-10, R-2A, RD-20, R-3, RD-30, RD-40, RM-1, RM-2, A-1-B, AR-1, A-2, AR-2, A-5, AR-5	55	50
Source: City of Rancho Cordova, Municipal Code Chapter 6.68.070		

Additionally, Section 6.68.090 of the City's municipal code provides the following exemption to the exterior noise standards:

> Noise sources associated with construction, repair, remodeling, demolition, paving or grading of any real property, provided said activities do not take place between the hours of 8:00 p.m. and 6:00 a.m. on weekdays and Friday commencing at 8:00 p.m. through and including 7:00 a.m. on Saturday; Saturdays commencing at 8:00 p.m. through and including 7:00 a.m. on the next following Sunday and on each Sunday after the hour of 8:00 p.m.; provided, however, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after 8:00 p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner. (Rancho Cordova Municipal Code Section 6.68.090)

Mather Field Specific Plan and Special Planning Area

The Mather Field Specific Plan and Special Planning Area contains the following policy relate to noise.

M-EM-13. Prevent the encroachment of incompatible land uses on Mather Field.

Mather South Community Master Plan

The Sustainability and Resource Management (Section 4.5) portion of the Mather South Community Master Plan includes the following policy regarding noise levels.

4.5.6 Noise

Major sources of noise affecting the Plan Area are aircraft overflights from Mather Field Airport, and vehicular traffic, particularly along arterial roadways. The Community Master Plan allows development of residential uses (which are considered to be noise-sensitive users) adjacent to internal collector streets. In most cases, the edge treatments and orientation of buildings along arterial streets will reduce outdoor noise levels to an acceptable 60-decibel day-night average noise level, (60 dB DNL) or less). Typically, the site detention/water quality basins along Zinfandel Drive will serve as a set back and buffer to reduce noise levels to less than 60 dB DNL.

Policy 4.5-9. Soundwalls along collector streets are generally discouraged and will be allowed only where noise analysis determines that soundwalls are an effective means of mitigating noise impacts.

Policy 4.5-10. Where noise mitigation measures are required, a combination of on-site planning, mounding, walls, and project design is the preferred method of mitigating noise impacts.

Significance Criteria

According to the CEQA Guidelines, an impact may be significant if the project results in any one of the following:

1. Exposure of persons to or generation of noise levels in excess of standards established in the Sacramento County General Plan, Zoning Code and Noise Ordinance regarding exterior noise levels, specifically Sacramento County's non-transportation noise standards established in Table NOI-6 and the City of Rancho Cordova's noise standards established in Table NOI-11.

2. Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels. For this analysis, the significance thresholds presented in Table NOI-4 were used to analyze potential vibrational impacts on people and buildings within the project area.

3. Expose people to a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project. For this analysis, the Sacramento County General Plan existing thresholds for exterior noise levels from non-transportation noise sources shown in Table NOI-7 are used as significance thresholds.

METHODOLOGY

CONSTRUCTION-RELATED NOISE AND VIBRATION

Predicted noise levels at nearby noise-sensitive land uses were modeled using typical reference noise levels and usage rates associated with construction equipment, derived from the FHWA's Roadway Construction Noise Model (Version 1.1) (FHWA 2006). Analysis of the project buildout was based was on the Mather South proposed land uses included in Table PD-2 in Chapter 1 Project Description as well as the anticipated project development phasing. To remain conservative, construction noise was modeled for construction phases which typically use the loudest equipment (i.e. demolition, site preparation). The construction noise modeling also assumes that, because of the phased construction of the project, noise sensitive land uses to be built from the initial phase of the project could be occupied and construction of subsequent stages could occur close to these new noise sensitive land uses. Using a worst-case scenario, modeling assumes construction could occur 25-feet away from new noise sensitive land uses. Equipment included in this modeling scenario included a excavator, dozer, dump truck, front end loader and grader operating simultaneously.

Construction activities in the project vicinity have the potential to expose nearby buildings to levels of ground vibration that could result in structural damage and/or negative human response. These types of activities were assessed based on the types of construction equipment that would be used, the levels of ground vibration typically generated by these types of equipment, and the proximity of construction activity to existing nearby buildings. Referenced ground vibration levels for typical construction equipment are provided by FHWA's Roadway Construction Noise Model (FHWA 2006). Construction vibration levels and contour distances were calculated based on typical construction equipment vibration levels and assuming a conservative rate of 1.1 for ground attenuation. Groundborne vibration impacts were evaluated based on the typically applied criteria of 0.2 in/sec ppv for structural damage and human annoyance (Table NO-4).

TRAFFIC NOISE INCREASES AT EXISTING RECEPTORS

Traffic noise levels were modeled based on the Caltrans traffic noise analysis protocol and the technical noise supplement (Caltrans 2013a), Additional input data included day/night percentages of autos, medium and heavy trucks, vehicle speeds, ground attenuation factors, and roadway widths. For this analysis, the mix of vehicles on the roadway was adjusted based on information from the traffic analysis conducted for this

project. To assess this impact, traffic noise levels under existing and existing-plus-project conditions for affected roadway segments were modeled. The modeling conducted does not account for any natural or human-made shielding (e.g., the presence of vegetation, berms, walls, or buildings) and; consequently, represents worst-case noise levels. For roadway segments that will be constructed or widened as a result of buildout of the project, future roadway widths were assumed to be the same as existing roadways with similar characteristics (i.e. number of lanes). Note that the traffic noise modeling does not account for any natural or human- made shielding (e.g., the presence of trees or solid backyard fences or walls) and, consequently, estimates worst-case noise exposure levels. For cases in which traffic noise level increases are shown to exceed applicable standards under existing plus project conditions, a visual analysis using Google Earth was conducted to identify if sound barriers currently exist in these locations. A sound barrier that is just tall enough to break the line of sight between vehicles traveling on a roadway and ground level receptors results in at least 5 dB of noise reduction and can achieve an approximate 1 dB additional reduction for each 2 feet of height above where the sound barrier breaks the line of sight (with a maximum theoretical total reduction of 20 dB) (FHWA 2011:56).The compatibility of proposed land uses was evaluated based on projected future transportation noise levels with project implementation. Predicted noise levels were compared with the County's corresponding noise criteria for determination of land use compatibility (Table 5.10-7, Table 5.10-12). For complete details on model inputs, outputs, and assumptions see NOI-1.

Issues not Discussed Further

Potential exposure to excessive noise levels associated with airport operations from are discussed in the Chapter 5 Airport Compatibility and are not discussed further in this chapter.

Impacts And Analysis

2016 Mather Field Project EIR Determination

The Mather Field Project EIR evaluated impacts related to noise from implementation of the Mather Field Project which consisted of a realignment of Zinfandel Drive and trunk extension, creation of the Mather Preserve and the establishment of an Urban Development Area designation for the Mather South Plan Area.

The EIR concluded less than significant impacts with mitigation related to noise from airports (see Chapter 5 Airport Compatibility) and less than significant or no impacts related to substantial temporary increase in ambient noise levels in the project vicinity because of construction activities. The discussion of impacts can be found on page CK-6 of the Mather Field Project EIR and is hereby incorporated by reference.

MATHER SOUTH PROJECT IMPACTS DETERMINATION

IMPACT: CONSTRUCTION NOISE

Construction activity associated with the development of land uses included in the Mather South Project as well as project related infrastructure would result in construction noise, although construction noise would be temporary in nature depending on the characteristics of the construction activity and land uses being developed. Noise associated with the construction of buildings, facilities, and infrastructure for land uses in the Mather South Project would be associated with the operation of off-road construction equipment including demolition and excavation equipment, material handlers, and portable generators. Noise levels associated with construction activity is of increased concern during nighttime hours (i.e., 8 p.m. to 6 a.m.) when community activities (e.g. vehicle traffic) typically decrease. Construction noise levels occurring during noise sensitive hours is more pronounced and could cause increased annoyance as well as potential sleep loss for noise sensitive land uses (e.g. residential) in close proximity to the construction activity. Table NOI-12 provides a list of the typical noise levels associated with the various individual pieces of off-road construction equipment used on construction noise modeling.

Table NOI-12: Typical Construction Equipment Noise Levels

Off-Road Construction Equipment	Typical Noise Level (dBA) at 50 Feet from Source	
	L_{max}	L_{eq}
Backhoe/Front End Loader	80	76
Dozer/Grader/Excavator/Scraper	85	81
Paver	85	82
Pile Driver (Impact Type)	101	94
Truck (Dump/Flat Bed)	84	80
Sources: FHWA 2006		

As shown in Chapter 1 Project Description, project implementation would involve development of a various of land uses in the project area. Project development would also result in the development of new roadways and infrastructure which would occur simultaneously with the phased development of these land uses. Development of these land uses and associated infrastructure is anticipated to occur in four phases spanning the lifetime of the project and would end in 2032. While construction noise would occur, the phased development of the project would reduce the levels and duration of construction noise occurring at any one location as construction activities would move to another location once complete with a phase.

Construction noise modeling assumed 5 pieces of equipment could be operating simultaneously at any one location on the project site. Noise modeling also included a project construction scenario for the potential use of an impact pile driver in addition to

the 5 other pieces of equipment. Construction noise modeling was compared to Table NOI-9 which are the Exterior Noise Standards included in the Sacramento County General Plan Noise Element as well as rules in Section 6.68.070 of the Sacramento County Code pertaining to noise.

Construction noise activity modeling results show that typical construction noise levels could be as high as 93.2 L_{eq} dB and 97.2 L_{max} dB at 25 feet and 81.1 L_{eq} dB and 85.1 L_{max} dB at 100 feet away. Construction activity which included an impact pile driver could reach 96.6 L_{eq} dB and 98.1 L_{max} at 25 feet and 84.6 L_{eq} dB and 86.8 L_{max} dB at 100 feet. The Sacramento County General Plan's standards for Non-Transportation Noise includes thresholds for various noise sensitive land uses. The lowest of these thresholds would be applicable to land uses included in the project (i.e., residential, schools). As shown in Table NOI-8, the threshold for these land uses are a median level (L_{50}) of 55 dB and a maximum level (L_{max}) of 75 dB during daytime hours (7 a.m. to 10 p.m.) and a median level (L_{50}) of 50 dB and a maximum level (L_{max}) of 70 dB during nighttime hours.

Based on construction noise modeling results, noise levels would exceed both the Sacramento County exterior noise thresholds for both the daytime and nighttime standards. As discussed in the Regulatory Settings, Section 6.68.090 of the Sacramento County Code provides exemptions to the County's exterior noise standards for construction activity. According to Section 6.68.090, noise sources associated with construction activity are exempt from the exterior noise standard so long as these activities do not occur between the hours of 8 p.m. and 6 a.m. on weekdays and Friday commencing at 8 p.m. through and including 7 a.m. on Saturday; Saturdays commencing at 8 p.m. through and including 7 a.m. on the next following Sunday and on each Sunday after the hour of 8 p.m. Additionally, the exemption states that when unforeseen or unavoidable conditions occur, construction activity may continue past 8 p.m. until the specific project work can be completed.

In addition to new noise sensitive land uses developed as part of the project, there is an existing residential neighborhood within the City of Rancho Cordova located approximately 500 feet to the east of the project site. Assuming construction activity would occur along the eastern border of the Plan Area, construction noise levels could be as high 67.2 L_{eq} dB and 71.1 L_{max} dB at 500 feet away. Construction activity which would include an impact pile driver could reach 70.6 L_{eq} dB and 72.9 L_{max} dB at 500 feet. As a result, construction noise levels would exceed the City's exterior noise standard of 60 dB L_{dn}/CNEL for residential land uses. However, as discussed in the Regulatory Settings, Section 6.68.090 of the City's Municipal Code provides exemptions to the County's exterior noise standards for construction activity so long as these activities do not occur between the hours of 8 p.m. and 6 a.m. on weekdays and Friday commencing at 8 p.m. through and including 7 a.m. on Saturday; Saturdays commencing at 8 p.m. through and including 7 a.m. on the next following Sunday and on each Sunday after the hour of 8 p.m. Additionally, the exemption states that when unforeseen or unavoidable conditions occur, construction activity may continue past 8 p.m. until the specific project work can be completed.

As discussed, construction activity associated with project implementation would potentially exceed the City's exterior noise standard. Construction activity during each phase of the project would be temporary, intermittent and vary in size and characteristics depending on the type of land uses being developed in each phase. However, noise sensitive land uses developed in each phase may be adversely affected by construction activity from the subsequent phases of project development. Additionally, existing receptors and sensitive land uses in the City of Rancho Cordova may also be adversely affected by construction noise levels from project construction. However, in both Sacramento County and the City of Rancho Cordova construction activity which results in noise level in exceedance of applicable standards is exempt if conducted within the permissible hours discussed above. However, if nighttime construction were required, construction activity including an impact pile driver could reach 70.6 L_{eq} dB and 72.9 L_{max} dB at 500 feet, exceeding the 50 L_{eq} and 70 L_{max} exterior noise standards detailed in the County Noise Control Ordinance (listed in Table NO-6).

Assuming the average exterior-to-interior noise level reduction of 24 dBA typically provided by residential buildings with the windows closed (EPA 1978: 11), the highest L_{eq} and L_{max} in the interior of rooms for all nearby sensitive receptors where people normally sleep, could exceed the 35 L_{eq}/L_{50} and 55 L_{max} interior noise standards detailed in the County General Plan (listed in Table NO-6) during nighttime construction. As a result, construction activity associated with project implementation could result in impacts to sensitive receptors. This impact would be a potentially significant impact.

Additionally, the project would require offsite improvements that would result in construction activities that have not been accounted for in the noise modeling for the project because they would occur as mitigation for traffic impacts and as separate future projects, would require additional environmental analysis. However, the operational noise aspects related to project traffic have been evaluated in this EIR.

Segments of roadway along Grant Line Road, Jackson Road, Sunrise Boulevard, and Zinfandel Drive would be widened to accommodate additional project-related traffic. Additionally, intersections within the traffic study area would be improved from two-way stops to either roundabouts or signalized controls. In some cases, lanes would be reconfigured to provide an additional turn lane. In the case of freeway capacity issues, an electronic traffic management system would be implemented which may result in future improvements to carrying capacity of parallel local facilities.

Implementation of traffic mitigation measures may result in environmental impacts because of construction activities and ground-disturbance, specifically including resource areas such as air quality, biological resources, cultural resources, and noise. Where mitigation and impacts are internal to the Plan Area, impacts are evaluated throughout the EIR. In the case of offsite impacts related to traffic improvements such as widening roads, installing signals and roundabouts, or reconfiguring lanes, additional environmental review would occur, and mitigation similar to that recommended for the project would likely be implemented to reduce impacts. All feasible mitigation would be required to be implemented consistent with state and federal requirements, as well as can be found in the County's General Plan, Grading Ordinance, Erosion and Sediment

Control Plan, and any other relevant County regulation for the minimization of environmental impacts.

MITIGATION MEASURES:

NOI-1. Reduce sensitive receptor exposure to construction noise during noise-sensitive time periods.

Consistent with County Noise Control Ordinance Section 6.68.090 Exemptions, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after 8 p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner.

For all outdoor construction/decommissioning activity that is to take place outside of the Sacramento County construction noise exception timeframes (i.e., between 6:00 a.m. and 8:00 p.m., Monday through Friday, and between 7:00 a.m. and 8:00 p.m. on Saturdays and Sunday), the contractor shall ensure that a noise monitoring plan is prepared by a qualified acoustical engineer and approved by the project applicant. The noise monitoring plan shall, at a minimum, include the following components:

- detailed description of the proposed nighttime construction/decommissioning activities,
- list of equipment used during all nighttime construction/decommissioning activities,
- projected noise levels generated during the nighttime construction/decommissioning activities at surrounding noise-sensitive land uses,
- location of sensitive receptors in relation to the proposed nighttime construction/decommissioning activities, and
- detailed description of the location and times that noise monitors would be deployed.

Subsequently, during any nighttime construction, noise shall be monitored and documented for the nearest sensitive land use to ensure that the County's exterior noise standards for non-transportation noise sources are not exceeded. In the event that monitored noise levels exceed applicable noise standards, onsite construction activities shall cease operations immediately. Before resuming nighttime construction activities, noise-control measures shall be implemented to reduce operational noise levels to below acceptable levels.

Noise control measures could include, but are not limited to, the following:

- All equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.
- Where available and feasible, equipment with back-up alarms shall be equipped with either audible self-adjusting backup alarms or alarms that only sound when an object is detected. Self-adjusting backup alarms shall automatically adjust to 5 dBA over the surrounding background levels. All non-self-adjusting backup alarms shall be set to the lowest setting required to be audible above the surrounding noise levels.
- To the extent that noise-generating outdoor construction activity needs to occur at night as part of a continuous construction activity, the activity shall be planned such that the portion that needs to take place closest to residential receptors takes place during less noise-sensitive daytime hours.
- Noise-reducing enclosures and techniques shall be used around stationary noise-generating equipment (e.g., concrete mixers, generators, compressors).
- Heavy-duty equipment shall be operated at the lowest operating power possible.
- Temporary noise curtains shall be installed as close as possible to the noise-generating activity such that the curtains obstruct the direct line of sight between the noise-generating construction/decommissioning activity and the nearby sensitive receptors. Temporary noise curtains shall consist of durable, flexible composite material featuring a noise barrier layer bounded to sound-absorptive material on one side. The noise barrier layer shall consist of rugged, impervious, material with a surface weight of at least one pound per square foot.

If project construction activity were to occur during nighttime hours, implementation of Mitigation Measure NOI-1 would ensure compliance with all applicable noise reduction strategies for noise generating construction activity. These strategies would ensure, to the extent possible, that nighttime construction activity comply with the County's noise standards. In the event that applicable hourly and noise-level standards are exceeded, nighttime construction would not be permitted to resume until noise control measures to reduce operational noise levels to below acceptable levels are implemented. If necessary to implement, these noise control measures would provide substantial reductions in levels of construction noise exposure at noise-sensitive receptors by ensuring proper equipment use; locating noise-generating equipment away from sensitive land uses, and requiring the use of enclosures, shields, and noise curtains. Implementation of these noise control measures would result in substantial reductions construction noise levels and subsequently in levels of annoyance and potential sleep disruption to occupants of nearby residential dwellings. Therefore, with implementation of Mitigation Measure NOI-1, this impact would be **less than significant with mitigation.**

Impact: Construction Vibration

The Mather South Project would not result in the development of any major sources of ground vibration such as commercial railways or passenger rail transit lines. Long-term operational activities associated with project implementation are not anticipated to result in permanent or substantial levels of ground vibration and this impact focusses on construction-related vibration.

The use of off-road heavy-duty construction equipment as well as other construction equipment (e.g., impact pile driver) can result in temporary ground vibration, depending on the type of equipment used and the type of construction activities occurring. However, the intensity of vibration generated by construction activity diminishes with increases in distance. Given the size and varying land uses included in the project, the specific types of equipment and construction activities are not known at this time but are assumed to be typical of construction activity of land uses included in the project. Table NOI-13 provides a list of vibration levels typically associated with various pieces of construction equipment.

Table NOI-13: Typical Construction Equipment Noise Levels

Equipment	PPV at 25 feet (in/sec)[1]	Approximate L_v (VdB) at 25 feet[2]
Pile Driver (impact) upper range	1.518	112
typical	*0.644*	*104*
Pile Driver (sonic) upper range	0.734	105
typical	*0.170*	*93*
Blasting	1.13	109
Large Dozer	0.089	87
Caisson Drilling	0.089	87
Loaded Trucks	0.076	86
Rock Breaker	0.059	83
Jackhammer	0.035	79
Small Dozer	0.003	58

PPV = peak particle velocity; LV = the root mean square velocity expressed in vibration decibels (VdB), assuming a crest factor of 4

1. Does not include the simultaneous operation of multiple pieces of equipment.
2. Based on a vibration threshold of 0.2 in/sec ppv, which is typically considered sufficient to protect against structural damage (excluding fragile and historic structures). This same threshold also represents the level at which vibrations would be potentially annoying to people in buildings (Caltrans 2002b, 2004). Does not include vibration-sensitive exterior activities.
3. Based on conservative ground attenuation rates. Actual levels/contour distances may vary depending on equipment selected and site conditions.
4. Includes hoe rams, bulldozers, tractors, front-end loaders, caisson drills, loaded trucks, and jackhammers.

Source: FTA 2006 p.12-6,12-8

At the lowest levels, vibration from construction activity can result in a detectable low rumbling sounds and, at its loudest levels, can result in annoyance and sleep disturbance. Typically, during construction activity, the highest vibration levels are generated from the use of pile drivers. According to FTA, vibration levels associated with pile driving are 1.518 in/sec PPV at 25 feet, which would exceed the established threshold of 0.2 in/sec PPV for structural damage within 100 feet of pile-driving activities (FTA 2006: 7-3).

Vibration levels can also cause annoyance for receptors located at noise sensitive land uses in which sleep typically occurs, such residences, hotels, and hospitals. The annoyance potential also depends on the frequency of the vibration events, with events occurring more than 70 times per day considered to be "frequent events." Frequent vibration events in excess of 72 VdB are considered to result in a significant vibration impact causing annoyance or disturbance. According to FTA, vibration levels associated with pile driving are 112 VdB at 25 feet. According to FTA's recommended methodology for assessing propagation adjustments for vibrations, "frequent events" using a pile driver within 550 feet of a sensitive receptor could result in a significant vibration impact.

Project implementation would result in the development of land uses during various time periods over the four phases of project development. The phased development of the project could potentially result in construction activity involving pile drivers in close proximity to new sensitive receptors to be developed as part of the project. It is unknown at this time where specific pile-driving activities would be required and to what extent they would occur. Therefore, it is possible that construction activities using a pile driver and other vibration-inducing construction activity could occur within 550 feet or within 100 feet of sensitive land uses with new or existing sensitive receptors, resulting in disturbance or possible structural damage. This impact would be a potentially significant impact.

MITIGATION MEASURES:

NO-2. Develop and implement a vibration control plan.

This mitigation measure would apply to construction activity involving pile-driving activities located within 100 feet of any building, to reduce the potential for structural damage, and within 550 feet of an occupied residence/building, to minimize disturbance from pile-driving activities.

A vibration control plan shall be developed by the project applicant and his/her construction contractors to be submitted to and approved by Sacramento County before issuance of any Improvement Plans or Grading Permits for the project. The plan shall consider all potential vibration-inducing activities that would occur within the distance parameters described above and include various measures, setback distances, precautions, monitoring programs, and alternative methods to traditional pile-driving activities with the potential to result in structural damage or excessive noise. The following vibration control measures (or other equally effective measures approved by the County) shall be included in the plan:

- To prevent structural damage, minimum setback requirements for different types of ground vibration-producing activities (e.g., pile driving) for the purpose of preventing damage to nearby structures shall be established based on the proposed pile-driving activities and locations, once determined. Factors to be considered include the specific nature of the vibration producing activity (e.g., type and duration of pile driving), local soil conditions, and the fragility/resiliency of the nearby structures. Established setback requirements (i.e., 100 feet) can be breached if a project-specific, site specific analysis is conducted by a qualified geotechnical engineer or ground vibration specialist that indicates that no structural damage would occur at nearby buildings or structures.
- To prevent disturbance to sensitive land uses, minimum setback requirements for different types of ground vibration producing activities (e.g., pile driving) shall be established based on the proposed pile-driving activities and locations, once determined. Established setback requirements (i.e., 550 feet) can be breached only if a project-specific, site-specific, technically adequate ground vibration study indicates that the buildings would not be exposed to ground vibration levels in excess of 72 VdB, and ground vibration measurements performed during the construction activity confirm that the buildings are not being exposed to levels in excess of 72 VdB.
- All vibration-inducing activity within the distance parameters described above shall be monitored and documented for ground vibration noise and vibration noise levels at the nearest sensitive land use and associated recorded data submitted to Sacramento County so as not to exceed the recommended FTA and Caltrans levels.
- Alternatives to traditional pile driving (e.g., sonic pile driving, jetting, cast-in-place or auger cast piles, non-displacement piles, pile cushioning, torque or hydraulic piles) shall be considered and implemented where feasible to reduce vibration levels.
- Limit pile-driving activities to the daytime hours between 6:00 a.m. and 8:00 p.m. Monday through Friday and between 8:00 a.m. and 8:00 p.m. Saturday and Sunday.
- Predrill pile holes to the maximum feasible depth to reduce the number of blows required to seat a pile.
- Operate all vibration inducing impact equipment as far away from vibration-sensitive sites as reasonably possible from nearby structures.
- Phase pile-driving and high-impact activities so as not to occur simultaneously with other construction activities, to the extent feasible. The total vibration level produced could be significantly less when each vibration source is operated at separate times.

Project implementation has the potential to result in construction activity which would involve pile drivers and, therefore, result in ground vibration levels which could result in structural damage and/or annoyance to new or existing sensitive receptors.

Implementation of Mitigation Measure NOI-2 would serve to reduce potential impacts from the use of piles drivers during construction activities. Mitigation Measure NOI-2 would reduce potential impacts by requiring minimum setbacks to sensitive land uses, impact monitoring during pile driving activity, use of alternative equipment when appropriate, and restrictions on hours of use to avoid annoyance to sensitive receptors. Through these measures, potential impacts on sensitive land uses from the use of pile drivers would be avoided and this impact would **less than significant with mitigation.**

IMPACT: OPERATIONAL TRAFFIC NOISE

Project implementation would result in the generation of new trips from land use development. Based on the results of the TIA conducted, the Mather South Project would result in increases in traffic volumes on roadways in the area surrounding the project site. Using the Caltrans traffic noise analysis protocol project generated traffic volumes were analyzed for increases in traffic noise levels which may impact sensitive receptors. Based on noise modeling results, traffic volume increases along affected roadways would result in increases in traffic noise levels which have the potential to cause disturbance to new or existing sensitive receptors. As shown in Table NOI-14, under existing plus project conditions, project generated traffic volume increases would generate noise levels above the Sacramento County's transportation noise threshold of 65 dB along several roadway segments. For roadway segments affected within the City of Rancho Cordova, project generated traffic volume increases would increase noise levels along certain roadway segments above the City of Rancho Cordova's transportation noise threshold of 60 dB.

Table NOI-14: Predicted Existing Plus Project Traffic Noise Levels

Roadway	Segment		Noise Level Range (L_{dn} dB) at 100 feet from Roadway Centerline	
	From	To	Existing Conditions	Existing plus Project Conditions
Bradshaw Road	Folsom Boulevard	Calvine Road	65 -71	71
Calvine Road	Waterman Road	Excelsior Road	60-67	67
Chrysanthy Boulevard	Sunrise Boulevard	Rancho Cordova Pkwy	59	58
Douglas Road	Mather Boulevard	Grant Line Road	62-65	66
Eagles Nest Road	Kiefer Boulevard	Grant Line Road	50-55	65
Elder Creek Road	65th St	Excelsior Road	58-66	66
Elk Grove-Florin Road	Florin Road	Gerber Road	67	67
Excelsior Road	Kiefer Blvd	Douglas Road	58-62	62
Florin Road	Stockton Blvd	Sunrise Blvd	62-68	68
Folsom Blvd	Howe Ave	Jackson Road	69	69
Fruitridge Road	65th Street	Power Inn Road	55-66	66
Grant Line Road	White Rock Road	Bond Road	64-67	68

Roadway	Segment		Noise Level Range (L_{dn} dB) at 100 feet from Roadway Centerline	
	From	To	Existing Conditions	Existing plus Project Conditions
Happy Lane	Old Placerville Road	Routier Extension	57	59
Hedge Avenue	Jackson Road	Rock Creek Parkway	57-59	59
Howe Avenue	US 50	Folsom Boulevard	71	71
International Dr	Mather Field Road	Sunrise Boulevard	63-66	66
Jackson Road	Folsom Boulevard	Grant Line Road	65-69	69
Kiefer Boulevard	Florin Perkins Road	Rancho Cordova Parkway	55-67	67
Mather Blvd / Norden Avenue	Von Karman Street	Bleckely Street	59	60
Mather Boulevard	Bleckely Street	Femoyer Street	59	60
Mather Blvd-Excelsior Road	Douglas Road	Kiefer Boulevard	61	61
Mather Field Road	US 50	Peter A McCuen Boulevard	67-71	71
Mayhew Road	Folsom Boulevard	Fruitridge Road	56-62	62
Old Placerville Road	Bradshaw Road	Rockingham Drive	62-66	66
Power Inn Road	Folsom Boulevard	14th Avenue	69	69
Rockingham Drive	Old Placerville Road	Mather Field Road	66	67
South Watt Ave	Folsom Blvd	Florin Road	68-71	71
Sunrise Boulevard	US 50	Grant Line Road	65-71	71
Vineyard Road	Gerber Road	Calvine Road	59	59
Watt Avenue	US 50	Folsom Boulevard	74	74
White Rock Road	International Drive	Prairie City Road	58-66	66
Zinfandel Drive	US 50	Kiefer Boulevard	58-69	69
Collector MS-1	Kiefer Boulevard	Collector MS-5	0	58
Collector MS-2	Eagles Nest Road	Collector MS-5	0	57
Collector MS-3	Eagles Nest Road	Collector MS-5	0	56
Collector MS-4	Eagles Nest Road	Collector MS-5	0	56
Collector MS-5	Kiefer Boulevard	Collector MS-1	0	55

Notes: dB = decibels; L_{dn} = day-night average noise level; Numbers are approximate due to rounding

Refer to Appendix E for detailed modeling input data and output results.

Measurements in bold are roadway segments which exceed the county's 65 dB standard under existing conditions

Source: Modeled by Ascent Environmental 2018

Table NOI-4, included in the Existing Conditions section, identifies traffic noise levels under existing conditions. Table NOI-15 is an abbreviated version of Table NOI-14 and displays the roadway segments under existing plus project conditions which would

experience an increase in traffic noise levels above the Sacramento County threshold of 65 L_{dn} dB.

Table NOI-15: Existing Plus Project Traffic Noise Levels which exceed 65 L_{dn} dB

Roadway	Segment		Noise Level (L_{dn} dB) at 100 feet from Roadway Centerline	
	From	To	Existing Conditions	Existing Plus Project Conditions
Zinfandel Drive	International Drive	Baroque Drive	62.3	66.3
	Baroque Drive	City Limit	62.3	66.3
	City Limit	Douglas Rd	62.3	66.3
	Douglas Rd	Collector MS-2	58.0	66.0

Provided below is a brief description of the locations which would experience traffic noise levels that exceed applicable standards and their associated land uses.

- Under existing plus project conditions, traffic noise levels would increase from 62.3 to 66.3 L_{dn} dB along Zinfandel Drive between International Drive and Collector MS-2. Land uses along this portion of Zinfandel Drive are located in the City of Rancho Cordova and include land uses zoned as Office Professional Mixed Use (OPMU) and Commercial/Main Street District (CM-S) zoning designations, which are not included as noise sensitive land uses within the City's Exterior Noise Standards (See Table NOI-11)

Under existing plus project conditions, traffic noise levels would increase from 62.3 to 66.3 L_{dn} dB along Zinfandel Drive between International Drive and Douglas Road. Land uses along this portion of Zinfandel Drive are located in the City of Rancho Cordova and include land uses zoned as Retail Commercial (RC), Business Professional (BP0), and Low-Density Residential (LD). LD is listed as a noise sensitive land use in the City's Exterior Noise Standards (See Table NOI-11). The residential portion of this segment of Zinfandel Drive is separated from the roadway by a soundwall which is approximately ten feet in height. This sound barrier is not accounted for in the traffic noise modeling scenario. Assuming a conservative reduction in traffic noise levels of 5 dB from the presence of soundwall, as discussed in the Methodology section, existing condition noise levels are closer to 57.3 dB with the existing plus project conditions increase traffic noise levels to 61.3 dB. Of the roadway segments that would experience noise levels above the threshold standards of 65 dB in the Sacramento County and 60 dB in the City of Rancho Cordova, only the segment of Zinfandel Drive between International Drive and Douglas Road includes noise sensitive land uses that would be subject to the City of Rancho Cordova's transportation noise threshold. Under existing plus project conditions and adjusted for the presence of the soundwall, the residential segment of Zinfandel Drive discussed above would be 61.3 dB and above the 60-dB threshold or residential land uses in the City of Rancho Cordova. As noted in Table NOI-11, for cases in which transportation noise levels are above the 60 dB threshold but available exterior noise level reduction measures have been implemented, a 65 dB L_{dn}/CNEL

threshold is allowed. In consideration of the existence of a soundwall adjacent to roadways along the residential land uses, feasible exterior noise level reduction measures have been implemented and the 61.3 dB traffic noise level under existing plus project conditions would be below the allowable 65 dB L_{dn}/CNEL threshold.

As shown Table NOI-14, as a result of project implementation traffic noise levels would increase along roadway segments surrounding the project area. As shown in Table NOI-15, traffic noise level increases that would exceed applicable thresholds only occur along several roadway segments surrounding the project site. Of these locations, only one roadway segment along Zinfandel Drive between International Drive and Douglas Road in the City of Rancho Cordova includes a noise sensitive land use (residential). As discussed above, the noise level increase would remain below the applicable standards shown in Table NOI-11 for transportation noise sources. Project implementation would not result in traffic noise volume increase that would exceed any applicable noise standards in the City of Rancho Cordova or Sacramento County. This impact would be **less than significant.**

MITIGATION MEASURES:

None required.

IMPACT: EXPOSURE OF EXISTING SENSITIVE RECEPTORS TO NEW STATIONARY NOISE SOURCES.

This impact assesses the long-term exposure of existing sensitive receptors to increased operational-source noise levels from proposed land use development. This impact analysis evaluates non-transportation noise sources that would occur because of project operation.

Existing sensitive receptors adjacent to the project site include the Anatolia Village neighborhood in the City of Rancho Cordova located approximately 500 feet to the northeast of the project boundary. This neighborhood includes sensitive receptors including residential land uses as well as the Heron Landing park in the southwest corner of the neighborhood.

MECHANICAL EQUIPMENT

Buildout of the Mather South Project would result in development of various land uses (e.g., residential, commercial, educational, public, **parks**). Based on the Mather South Project land use plan, Plate PD-9 in Chapter 1 Project Description, the land uses that would be located adjacent to the existing Anatolia Village neighborhood would include residential, public, and a park. Typically, noise sources associated with residential land uses include heating, cooling, and air conditioning (HVAC) units, lawn mowers and landscaping maintenance equipment.

Noise levels from HVAC equipment vary substantially depending on unit efficiency, size, and location, but generally range from 45 to 70 dB L_{eq} at a distance of 50 feet (EPA 1971). Assuming the higher, more conservative value of these reference noise levels, HVAC units located within 189 feet of noise-sensitive land uses could exceed the City of

Rancho Cordova's exterior noise standard for daytime noise (i.e., 55 dBA), detailed in Table NOI-11. In addition, HVAC units located within 295 feet of noise-sensitive land uses could exceed the City's noise standard for nighttime noise (i.e., 50 dBA L_{eq}). Considering that the closest noise sensitive land use (Anatolia Village) is located approximately 500 feet from the project boundary, HVAC equipment associated with the development of the projects residential land uses closest to this noise sensitive land use would not result in noise levels that would exceed the city's noise standard.

Additionally, Sacramento County Noise Ordinance Section 6.68.120 Machinery, Equipment, Fans and Air Conditioning prohibits the operation of "any mechanical equipment, pump, fan, air conditioning apparatus, stationary pumps, stationary cooling towers, stationary compressors, similar mechanical devices, or any combination thereof installed after July 1, 1976" that would exceed 55 dBA outside of the neighboring living area window nearest the equipment location. As discussed above, the Mather South Project would include the development of residential land uses in the northeast portion of the project site, adjacent to the closest noise sensitive land use (Anatolia Village). Section 6.68.120 of the Sacramento County Noise Ordinance would apply to the development of the projects residential land uses adjacent to City of Rancho Cordova neighborhood. Therefore, noise levels from mechanical equipment as part of this development would not exceed the City of Rancho Cordova's 55 dBA (daytime) and 50 dBA (nighttime) exterior noise standard. The siting of new stationary noise as part of project implementation would not result in new noise sources that would exceed Sacramento County or City of Rancho Cordova noise standards and any noise sensitive land uses. Therefore, this impact would be **less than significant**.

MITIGATION MEASURES:

None required.

IMPACT: EXPOSURE OF NEW SENSITIVE RECEPTORS TO EXISTING AND NEW STATIONARY NOISE SOURCES.

This impact assesses the long-term exposure of proposed new sensitive receptors to future operational-source noise levels from other proposed land use development. This impact analysis evaluates non-transportation noise sources that would occur as a result of project operation. This analysis was conducted using the Sacramento County Non-Transportation Noise Standards as the threshold of significance, which provides maximum allowable noise standards for various land uses (See Table NOI-6). Given the various land uses included in the project, each noise sensitive land use included in the project is discussed in detail below.

Implementation of the Mather South Project would result in the development of new land uses which would include new stationary noise sources which may affect new sensitive receptors. Stationary mechanical equipment such as emergency generators, heating, cooling, and air conditioning (HVAC) units would be included in various land uses within the project site (e.g. commercial, residential). Vehicular and human activity in parking lots, commercial activity at loading docks at retail locations would all potentially generate noise levels which could exceed the County's applicable noise

standards for various land uses (See Table NOI-6). Utility infrastructure associated with implementation of the project, particularly electrical transmission lines and substations would generate noise with the potential to cause disturbance to new sensitive receptors. The project is a multi-phase plan with various land uses to be developed over many years. The Mather South Project's current land use plan has the potential for new sensitive receptors to be located adjacent to the above-mentioned stationary noise sources and has the potential to cause disturbance to new sensitive receptors, resulting in exceedance of Sacramento County Non-Transportation Noise Standards.

FUTURE RESIDENTIAL SENSITIVE RECEPTORS

The project includes low to high density residential land uses located throughout the plan area. Based on the land use plan included as part of Chapter 1 Project Description, several of these residential land uses would be located adjacent to commercial and retail land uses which would include stationary equipment which would generate noise capable of exceeding the threshold of 55 L_{50} and 75 L_{max} during the daytime and 50 L_{50} and 70 L_{max} during the nighttime established for residential land uses established in the County's Non-Transportation Noise Standards (See Table NOI-6). As a result, new sensitive receptors in the residential land uses could be exposed to noise levels exceeding applicable standard and therefore cause disturbance or potential loss of sleep. Additionally, HVAC equipment could be included in the development of the various residential land uses and has the potential to expose new sensitive receptors to noise levels exceeding the County's Non-Transportation Noise Standards. However, Sacramento County Noise Ordinance Section 6.68.120 Machinery, Equipment, Fans and Air Conditioning prohibits the operation of "any mechanical equipment, pump, fan, air conditioning apparatus, stationary pumps, stationary cooling towers, stationary compressors, similar mechanical devices, or any combination thereof installed after July 1, 1976" that would exceed 55 dBA outside of the neighboring living area window nearest the equipment location. As such, new residential land uses which include HVAC equipment would have to comply with Section 6.68.120 Sacramento County Noise Ordinance, ensuring that stationary sources included in new development would not exceed 60 dBA at one foot inside the property line or exceed 55 dBA outside of the neighboring living area window nearest the equipment location.

IMPACT OF NEW NON-RESIDENTIAL LAND USES ON SENSITIVE RECEPTORS

The Mather South Project includes non-residential land uses which could include stationary equipment resulting in noise levels that would exceed the County's Non-Transportation Noise Standards (See Table NOI-6). As shown in Plate PD-9 in Chapter 1 Project Description, these land uses include commercial/retail, research and development, and environmental education campus. Each of these land uses, and their associated potential stationary noise sources is discussed in detail below.

Implementation of the project would include the development of the several commercial/retail land uses within the project site. The location of these land uses are adjacent to noise sensitive land uses (i.e. residential, parks) that would also be developed as part of project implementation. Stationary noise sources typically associated with commercial/retail land uses include human and vehicular activity in

parking lots, activity at loading docks, HVAC equipment as part of commercial building design, and emergency back-up generators. As discussed in the Regulatory Settings section of this chapter, Section 6.68.120 of the Sacramento County Noise Ordinance includes specific regulation regarding noise levels generated by mechanical equipment. The regulation states that any new development which includes any mechanical equipment, pump, fan, air conditioning apparatus, stationary pumps, stationary cooling towers, stationary compressors, similar mechanical devices, or any combination thereof shall not allow noise levels from this equipment to exceed 60 dBA at one foot inside the property line or exceed 55 dBA outside of the neighboring living area window nearest the equipment location.

While the specific location of various mechanical equipment is unknown at this time, based on the land uses included in the project land use plan, it is assumed that commercial/retail land uses may include emergency back-up generators or HVAC equipment. For emergency generators with rated power outputs from 50 to 125 kilowatts, noise levels typically range from 61 to 73 dB L_{eq} and 63–84 dB L_{max} at a distance of 45 feet (EPA 1971, FHWA 2006). Noise levels generated from HVAC equipment vary substantially depending on unit efficiency, size, and location. Generally, HVAC equipment noise levels range from 45 to 70 dB L_{eq} at a distance of 50 feet (EPA 1971).

As a plan level project, the specific location of these types of equipment in the commercial land uses relative to adjacent sensitive receptors are not unknown at this time. For this analysis, the distance at which this equipment would exceed applicable non-transportation noise standards is provided. Assuming the higher value of these reference noise levels, HVAC units could exceed the County's noise standard for mechanical equipment (i.e., 60 dBA) if located within 200 feet of noise-sensitive land uses. Although only used in emergency situations, back-up generators could exceed the County's noise standard for mechanical equipment (i.e., 60 dBA) within 140 feet. Given that the future location of this equipment relative to residential land uses is unknown, this impact would be potentially significant.

Commercial land uses as well as research and development land use could include loading dock areas generating noise in exceedance of the County's Non-Transportation Noise Standards. Noise sources associated with general activity in a loading dock area include on-site truck circulation, truck idling, use of truck mounted refrigeration units, movement of material goods, and the operation of forklifts. In 2016, the Railyard Specific Plan (RSP) EIR was completed for the City of Sacramento. The Noise Chapter of the EIR includes discussion of general noise levels associated with loading dock areas based on a 2008 truck noise study of a Fresh and Easy (Grocery Store) Distribution Center in Riverside, CA. As stated in the RSP EIR, noise levels reaching 80 dBA L_{max} and 60 dBA L_{eq} at a distance of 50 feet could be generated from typical activities in a loading dock area (City of Sacramento 2016). Based on this information, loading dock areas located within 90 feet of noise sensitive land uses would exceed the County's noise standard for non-transportation sources (i.e. 55 L_{50}/75 L_{max} dB) during the daytime. If loading dock activities were to occur at nighttime (i.e. 10 p.m. – 7 a.m.), loading dock activities within 160 feet would exceed the County's non-transportation noise nighttime standard of 50 L_{50}/L_{max} 70. Additionally, assuming the average exterior-

to-interior noise level reduction of 24 dBA typically provided by residential buildings with the windows closed (EPA 1978: 11), the highest L_{max} and L_{eq} in the interior of rooms for all nearby sensitive receptors where people normally sleep, could exceed the County's interior noise standard of 35 L_{eq}/L_{50} and 55 L_{max} (listed in Table NOI-6). The Sacramento County Design Guidelines includes design policies for the development of various land uses within the County. Specifically, guidelines under section 4.2.8 and 6.3.6 (See Regulatory Settings section) encouraging that the siting of new loading docks consider noised impacts and be located away from residential areas and use architectural and landscaping strategies to reduce noise impacts. However, given that the specific location and design of loading dock areas relative to noise sensitive land uses is currently unknown, this impact would be potentially significant.

Project implementation would result in the development of a new Sacramento Municipal Utility District (SMUD)-owned and operated electrical distribution substation and subsequent electrical transmission lines to adequately service the new energy demand generated by the project. Noise generated by electrical facilities such as transmissions lines is a result of the corona effect (crackling and hissing hum-like sound). The corona effect is a result of small variabilities in the conductor material which results in air being ionized around a gap in the material. Variabilities in conductor materials can include a burr (raised area), a small irregularity, or some non-insulated component during the conductance of electricity through power lines. Additionally, electrical substations generate noise through the operation of various pieces of equipment within the substation including transformers, cooling fans, substation circuit breakers and capacitors. Typically, substation transformers generate the highest noise levels which is described as a "humming" or "buzzing" noise. In 2016, SMUD published an Initial Study/Mitigated Negative Declaration (IS/MND) for the Franklin Electric Transmission Project. For reference, the bulk substation proposed in the Franklin Electric Transmissions Project IS/MND is larger than the distribution substation proposed for the Mather South Project. Based on information included in the noise study included as part of the Franklin Electric Transmission Project, the 224 mega-volt ampere (MVA) bulk substation was estimated to generate noise levels of 60 dBA L_{eq}/L_{50} at 6 feet (SMUD 2017). Based on this information, the substation to be developed as part of project implementation would exceed the County's nighttime non-transportation noise standard of 50 dBA L_{50} if the substation were to be located within 16 feet of the nearest sensitive receptor. Based on the current land use map for the project, SMUD has identified two locations for the new substation, each of which could be built within 16 feet of a noise sensitive land use. This impact would be potentially significant.

As discussed above, project implementation would result in the development of various land uses (e.g., residential, commercial/retail, research and development) which would include new noise generating stationary equipment as well as land uses with new noise generating activity areas (e.g. loading dock areas). While the land use plan (See Plate PD-9) within Chapter 1 Project Description provides the anticipated location of each of the new land uses, the specific location of the new stationary equipment and noise generating activity areas within these land uses is unknown. As a result, the development of new land uses which would include stationary equipment and/or new noise generating activity areas could be located in close proximity to new noise

sensitive land uses and could result in noise levels that exceed the County's non-transportation noise standards of 55 L_{50} and 75 L_{max} during the daytime and 50 L_{50} and 70 L_{max} during the nighttime and could also exceed the County's interior noise standard of 35 L_{eq}/L_{50} and 55 L_{max} (listed in Table NOI-6) during nighttime construction. As discussed, the Sacramento County Design Guidelines includes design policies encouraging the siting of new loading docks consider noised impacts and be located away from residential areas and use architectural and landscaping strategies to reduce noise impacts. Even in consideration of these policies, because the location of new stationary equipment and/or new noise generating activity areas is not fully known at this time, these sources could still exceed the County's non-transportation noise standards and cause disturbance to sensitive receptors. Therefore, this impact would be potentially significant.

MITIGATION MEASURES:

NOI-3. Conduct site-specific noise study and implement recommendations.

To prevent future sensitive receptors from disturbance during the sensitive times of the day, project applicants of a residential land use or a structure containing residential units shall, before the issuance of building permits, provide to the County a site-specific noise study prepared by a qualified acoustical engineer addressing interior noise levels in residential units. The noise study shall consider the types of land uses being proposed in the same building or in the vicinity as the residential units in a mixed-use structure and existing noise sources adjacent to the proposed structure. The noise study shall confirm, using approved calculation methodologies, that building design and materials are sufficient to maintain exterior noise levels of 55 L_{50} and 75 L_{max} during the daytime and 50 L_{50} and 70 L_{max} during the nighttime and an interior noise level of (L_{50}) of 35 and maximum (L_{max}) of 55 dB L_{dn} /CNEL, with windows closed, in residential units given the reasonably foreseeable noise generation sources within the building, and existing noise sources adjacent to the building. If the study shows such standards would not be met with the design as proposed, the project applicants shall implement recommendations of the study that are shown to achieve the standards.

NOI-4. Reduce noise exposure to existing sensitive receptors from proposed stationary noise sources in non-residential land uses.

The siting of new stationary sources in non-residential land uses shall first consider providing adequate distance between the noise source and residential land uses. Siting distance recommendations for each source type are provided below.

- New loading dock or commercial delivery sources shall be located a minimum of 1,600 feet from existing residential land uses.
- New HVAC units shall be located a minimum of 500 feet from existing residential land uses.
- New mechanical generators shall be located a minimum of 640 feet from existing residential land uses.

- New overhead transmissions lines and substations shall be located a minimum of 16 feet from existing residential land uses.

If the above siting requirements cannot be achieved because of specific building locations or other site-specific constraints, the following measures shall be required for future development applications including stationary sources.

- Routine testing and preventive maintenance of emergency electrical generators shall be conducted during the less sensitive daytime hours (i.e., 6:00 a.m. to 8:00 p.m.), per the Sacramento County Noise Ordinance. All electrical generators shall be equipped with noise control (e.g., muffler) devices in accordance with manufacturers' specifications.
- External mechanical equipment, including HVAC units, associated with buildings shall incorporate features designed to reduce noise emissions below the stationary noise source criteria. These features may include, but are not limited to, locating equipment within equipment rooms or enclosures that incorporate noise reduction features, such as acoustical louvers, and exhaust and intake silencers. Equipment enclosures shall be oriented so that major openings (i.e., intake louvers, exhaust) are directed away from nearby noise-sensitive receptors. In addition, when locating HVAC units on buildings adjacent to residential land uses, HVAC units shall not be located directly adjacent to windows of residential units. HVAC locations shall be chosen to minimize noise at nearby residential land uses.
- Loading docks shall be located and designed so that noise emissions do not exceed the stationary noise source criteria established in this analysis (i.e., exterior daytime [6:00 a.m. to 8:00 p.m.] standards of 55 dB L_{eq}/70 dB L_{max} and the exterior nighttime [8:00 p.m. to 6:00 a.m.] standards of 50 dB L_{eq} /70 dB L_{max}) at any existing sensitive receptor. At the time of conformity review application submittal for discretionary entitlement, the project applicant shall provide to the County a specialized noise study to evaluate specific design and ensure compliance with Sacramento County noise standards. Reduction of loading dock noise can be achieved by locating loading docks as far away as possible from noise sensitive land uses, constructing noise barriers between loading docks and noise-sensitive land uses, or using buildings and topographic features to provide acoustic shielding for noise-sensitive land uses. Final design, location, and orientation shall be dictated by findings in the noise study, if applicable.
- Parking lots and structures shall be located and designed so that noise emissions do not exceed the stationary noise source criteria identified in this analysis (i.e., exterior daytime [6:00 a.m. to 8:00 p.m.] standards of 55 dB L_{eq}/70 dB L_{max} and the exterior nighttime [8:00 p.m. to 6:00 a.m.] standards of 50 dB L_{eq}/ 70 dB L_{max}) at any existing sensitive receptor. At the time of conformity review application submittal for discretionary entitlement, the project applicant shall provide to the County a specialized noise study to evaluate specific design and ensure compliance with Sacramento County noise standards. Reduction of parking lot noise can be achieved by locating parking lots away from noise

sensitive land uses, constructing noise barriers between parking lots/structures and noise-sensitive land uses, incorporating noise barriers into parking structure designs (e.g., providing solid walls around the top levels of parking structures), or using buildings and topographic features to provide acoustic shielding for noise-sensitive land uses. Final design, location, and orientation shall be dictated by findings in the noise study, if applicable.

Mitigation Measure NOI-3 requires new residential development to conduct a site-specific noise study prepared by a qualified acoustical engineer addressing interior noise levels in residential units before the issuance of building permits. This would ensure that residential land uses to maintain exterior noise levels of 55 L_{50} and 75 L_{max} during the daytime and 50 L_{50} and 70 L_{max} during the nighttime and an a median level of 35 (L_{50}) and maximum level (L_{max}) of 55 dB L_{dn} /CNEL interior noise level and remain below the County's interior noise standard. Mitigation Measure NOI-4 would serve to reduce exposure to existing sensitive receptors from proposed stationary noise sources including but not limited to mechanical equipment and loading dock areas through site design features and site-specific constraints from stationary noise sources. However, the location of new stationary equipment and/or new noise generating activity areas adjacent to noise sensitive land uses could still exceed the County's non-transportation noise standard for outdoor noise sensitive areas of 55 L_{50} and 75 L_{max} during the nighttime and 50 L_{50} and 70 L_{max} dB (L_{dn} /CNEL) during the nighttime. No additional feasible mitigation is available to reduce this impact; therefore, this impact would remain **significant and unavoidable**.

Impact: Substantial Increase in the Existing Ambient Noise Levels

New land uses to be developed as part of the Mather South Project, specifically commercial/retail land uses, would result in the siting of new noise sources associated with stationary equipment as part of building operations as well as new commercial activities areas (i.e. loading docks). In consideration of the implementation of NOI-4 and its anticipated noise reduction benefits, stationary equipment is assumed not to contribute to existing ambient noise levels. Project land uses which result in new vehicle trip generation would contribute to traffic volume increases along roadways in and around the Plan Area and increase traffic related noise levels in the surrounding area. Based on project related increases in traffic volumes on affected roadways, project implementation could result in an increase in existing ambient noise levels. For this analysis, the perceptible incremental increases in noise levels which are discussed in Table NOI-2 are used as a threshold for determining potential impacts on ambient noise levels. As stated in Table NOI-2, a noise level increase of 5.0 dB, or greater, would typically be considered to result in increased levels of annoyance where existing ambient noise levels are less than 60 dB. Within areas where the ambient noise level ranges from 60 to 65 dB, increased levels of annoyance would be anticipated at increases of 3 dB, or greater. Increases of 1.5 dB, or greater, could result in increased levels of annoyance in areas where the ambient noise level exceeds 65 dB.

Using data from the project's TIA, Table NOI-16 includes roadway segments that would experience a substantial increase in traffic noise volumes as a result of project

implementation. Table NOI-16 includes traffic noise levels under existing conditions and existing plus project conditions as well as the incremental increase in traffic noise levels as a result of project implementation.

Table NOI-16: Summary of Modeled Substantial Traffic Noise Level Increases from Existing to Existing Plus Project Conditions

Roadway	Segment		Noise Levels (L_{dn} dB)		Net Change (dB)
	From	To	Existing Conditions	Existing Plus Project Conditions	
Eagles Nest Road	Kiefer Boulevard	North Bridgewater Drive	54.9	64.7	9.8
	North Bridgewater Drive	South Bridgewater Drive	54.9	64.7	9.8
	South Bridgewater Drive	Jackson Road	54.9	64.7	9.8
	Jackson Road	Florin Road	54.1	62.5	8.4
	Florin Road	Grant Line Road	49.8	59.6	9.8
Kiefer Boulevard	Eagles Nest Road	West Collector MS-1	55.2	62.0	6.9
	East Collector MS-1	Sunrise Boulevard	55.2	65.3	10.1

The segment of Eagles Nest Road between Kiefer Boulevard and Jackson Road which would be affected by substantial traffic noise level increases is currently zoned as Light Industrial and is located in Sacramento County. This segment of Eagles Nest Road does include several single-family homes as well as a community cemetery. The Light Industrial land use designation is not considered a noise sensitive land use under any County standard, although sensitive receptors along this roadway would experience substantial traffic noise level increases as a result of project implementation. The segment of Eagles Nest Road between Jackson Road and Grant Line Road is currently zoned as Agricultural. There are currently several single-family homes located along this segment of Eagles Nest Road that would also experience traffic noise increases as a result of project implementation.

Land uses along the segment of Kiefer Boulevard between Eagles Nest Road and Sunrise Boulevard are currently zoned as Agricultural and does not include residences within the area. The only facility along this roadway segment is the recycling facility discussed the Existing Conditions section. Based on the threshold criteria for this analysis, new traffic volume increases would result in a substantial increase in ambient noise levels although no sensitive receptors would be impacted by this increase.

As shown in Table NOI-16, the roadways to be developed as part of project implementation would result in a substantial increase in noise levels within the surrounding area. However, these increases would not exceed Sacramento County's traffic noise standard of 65 dB and would remain consistent with policy NOI-9 of the

Sacramento County General Plan Noise Element. Additionally, Policy 4.3.4 Noise of the Mather South Community Master Plan discusses the use of site design measures (e.g. sound barriers) to ensure that noise sensitive land uses would remain below applicable thresholds. The inclusion of this policy as part of project implementation would ensure that new noise sensitive land uses and associated sensitive receptors would not be disturbed by these traffic volume increases.

However, based on the traffic noise modeling conducted, several affected roadway segments and their adjacent land uses outside of the Plan Area would experience substantial increases in ambient noise levels. Implementation of the project would result in roadway volume increases resulting in subsequent increases in traffic noise levels above the thresholds established for this impact in Table NOI-2. As discussed above, there are single family homes adjacent to several of the roadways that would experience substantial noise level increases as a result of project implementation. Single family homes located along affected roadways that are within agricultural land uses are generally isolated, stand-alone residences and typically have larger setbacks from the roadway. Although these setbacks would attenuate noise levels over the distance of these setbacks, there is still the potential for the residences to experience a substantial noise level increase as a result of traffic volume increases generated by the project. Therefore, this impact would be potentially significant.

MITIGATION MEASURE:

NOI-5. Install Outdoor Sound Barriers at residential land uses along Eagles Nest Road between Kiefer Boulevard and Jackson Road to reduce increases in Traffic Noise Levels.

- To offset the increase in noise levels from traffic volume increase along Eagles Nest Road, the project applicant shall offer the owners of residences along Eagles Nest Road the construction of a sound barrier (e.g., sound wall, berm) to reduce exterior traffic noise levels on the property. The project applicant shall offer the owners of all the residences with addresses along this roadway segment the installation of a sound barrier along the property line of their affected residential properties. The sound barriers must be constructed of solid material (e.g., wood, brick, adobe, an earthen berm, or combination thereof) and designed to ensure that the incremental increase in traffic noise is less than 5 dB L_{dn}. All barriers shall blend into the overall landscape and have an aesthetically pleasing appearance that agrees with the color and rural character of the houses and the general area, and not become the dominant visual element of the community. Relocation of the driveway at each residence may be necessary to preclude having gaps in the sound barrier. Relocation of landscaping may also be necessary to achieve an aesthetically pleasing appearance. The owners of the affected properties may choose to refuse this offer; however, the offer shall be made available to subsequent owners of the property if change of ownership occurs before project construction is complete. If an existing owner refuses these measures, a deed notice must be included with any future sale of the property to comply with California state real estate law, which requires that sellers of real property disclose “any fact materially affecting the value and desirability of the

property" (California Civil Code, Section 1102.1[a]) and shall indicate that the project applicant agrees to install a sound barrier, as described above. To ensure compliance with applicable noise standards, a site-specific noise study shall be conducted by the project applicant or one of its approved consultants to determine specific noise barrier design. The project applicant shall also be responsible for removal of these sound barriers at the end of project construction.

Implementation of Mitigation Measure NOI-5 would require the project applicant to offer the owners of residences along Eagles Nest Road the construction of a sound barrier that would ensure that the incremental increase in traffic noise is less than 5 dB L_{dn}. If developed, sound barriers would reduce traffic noise level increases to below the 5-dB incremental increase threshold (See Table NOI-2) applicable to noise sensitive land uses along Eagles Nest Road. However, the offer to construct a sound barrier does not guarantee that all owners of these residential land uses would agree to construction of a sounds barrier.

Implementation of Mitigation Measure NOI-6 would further reduce the potential for noise impacts.

NOI-6. Use rubberized hot-mix asphalt for the road widening project along Eagles Nest Road.

- Paving the nearby segment of roadway with rubberized hot-mix asphalt (RHMA) or equivalent surface treatment with known noise-reducing properties on top of the roadway surface. The RHMA overlay shall be designed with appropriate thickness and rubber component quantity (typically 15 percent by weight of the total blend), such that traffic noise levels are reduced by an average of 4 to 6 dB (noise levels vary depending on travel speeds, meteorological conditions, and pavement quality) as compared to noise levels generated by vehicle traffic traveling on standard asphalt. RHMA has been found to achieve this level of noise reduction in other parts of California (Sacramento County 1999). Pavement will require more frequent than normal maintenance and repair to maintain its noise attenuation effectiveness.

The project would also implement cumulative noise mitigation that requires all offsite roadway paving improvements to include rubberized asphalt (described in Chapter 19 Summary of Impacts and Their Disposition). It is not known whether Mitigation Measures NOI-5 and NOI-6 would fully reduce traffic noise levels along Eagles Nest Road to a less than significant level for all affected sensitive receptors, because there is no guarantee that residents would accept the offer of a sound barrier. Therefore, this impact would remain **significant and unavoidable**.

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15 PUBLIC SERVICES

INTRODUCTION

The Mather Field Project EIR (2016) evaluated the Mather South Plan Area at the plan-level and that analysis is hereby incorporated by reference in this document and summarized as appropriate below. This chapter describes the regulatory and environmental setting for public services in the Plan Area, identifies and analyzes impacts related to public services from implementation of the Mather South Project at a project-level, and if necessary, recommends mitigation measures to reduce or eliminate significant impacts.

During the NOP scoping process, commenters raised issues with fire station siting, size and design of school, and size and design of parks. A copy of the NOP and comment letters received in response to the NOP are included in Appendix PD-2 of this Mather South Project EIR.

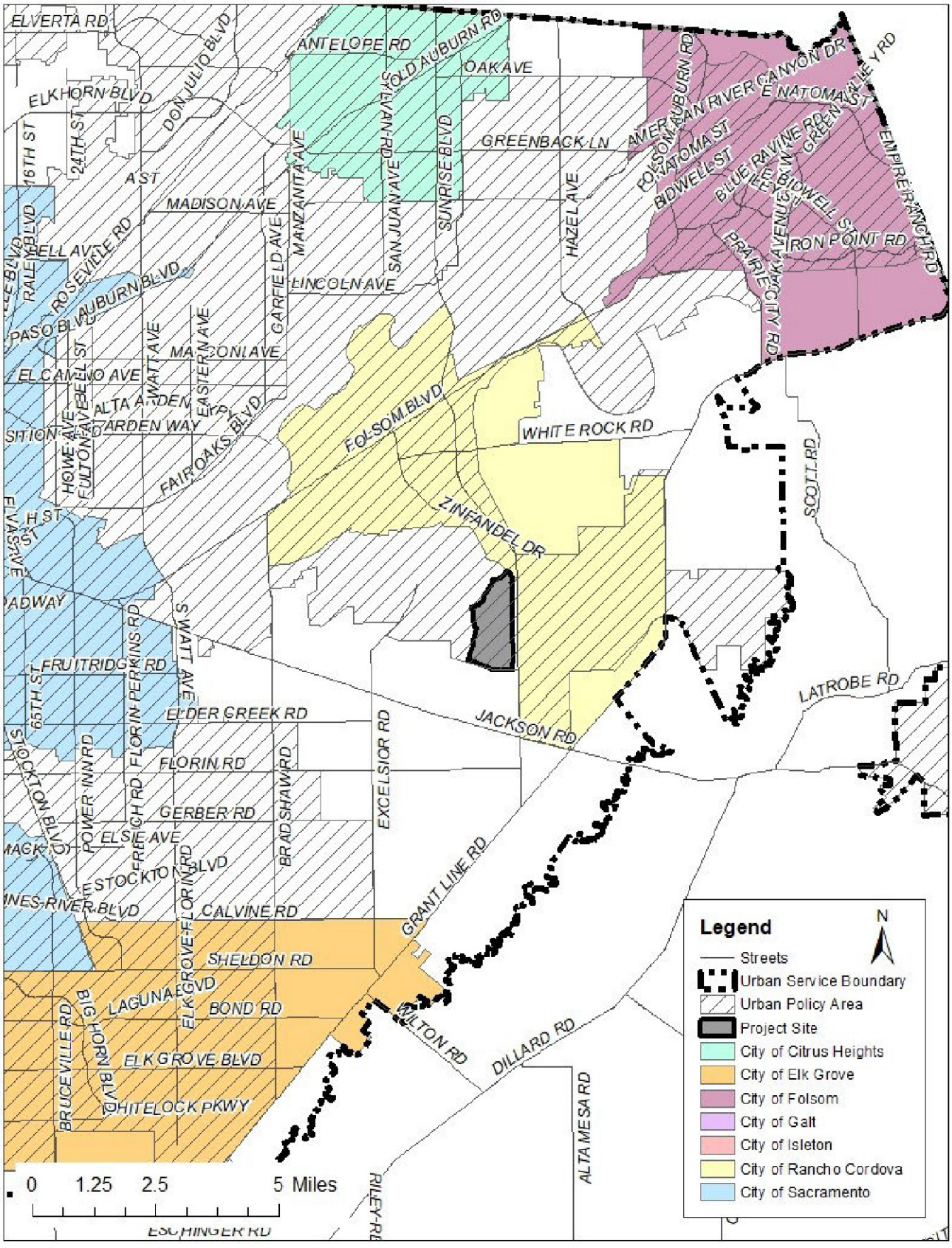
ENVIRONMENTAL SETTING

The Mather South Project is located within the Urban Services Boundary (USB) and Urban Policy Area (UPA), as defined in the Land Use Element of the County of Sacramento General Plan (Plate PS-1). The Mather South Project is located within the following public service districts (additional information on each service is included below):

Fire Protection Service:	Sacramento Metropolitan Fire District
Law Enforcement Service:	Sacramento County Sheriff's Department
School Services:	Elk Grove Unified School District
Parks and Recreation Service:	Cordova Recreation and Park District
Library:	Sacramento Public Library

FIRE PROTECTION AND EMERGENCY RESPONSE

The Mather South Plan Area is within the service area of the Sacramento Metropolitan Fire District (Metro Fire). Metro Fire is a special district that serves a population of over 738,000 in a 358-square mile service area in Sacramento County. As a special district, Metro Fire is governed by a Board of Directors; each member is elected by the voters within a geographical area, or division, of Metro Fire's operational area. Operations include fire and rescue, emergency medical, training and safety, special operations, homeland security, fire investigation, and health and wellness divisions. Metro Fire does not have any adopted performance standards, but it strives to maintain minimum response times of five minutes in 90 percent of all cases, which is a national voluntary standard set by the National Fire Protection Association.



Source: County of Sacramento

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Plate PS-1: Urban Services Boundary and Urban Policy Area

Metro Fire uses a range of standards for response times based upon the density of the area being served. In the case of the Mather South Project, it is undeveloped and would be considered rural before build out of the project. The required service times for a rural fire is 14 minutes for the first arriving fire truck. Upon buildout of the project, response times would be required to comply with urban/suburban service time which is 4 minutes for the first truck arrival (Metro Fire 2013).

Metro Fire has six existing fire stations within 5 miles of the Mather South Plan Area (Metro Fire 2018). Metro Fire Station 66, located at 3180 Kilgore Road, is the closest operating fire station, and is approximately 3.5 mile north of the Plan Area. The station has an engine company, one Type III Fire Engine, a Battalion Chief, and a Water Tender vehicle (Metro Fire 2018). Metro Fire is currently in the process of planning several additional stations in the area surrounding the Plan Area due to planned and approved development in the City of Rancho Cordova, the Vineyard community, and the proposed master plan areas surrounding the Plan Area. The total number of new stations will be determined based upon approval and buildout of communities in and around the Mather South Plan Area (Metro Fire 2013).

LAW ENFORCEMENT

The Mather South Plan Area is within the service area of the Sacramento County Sheriff's Department (SSD), which provides law enforcement services in unincorporated Sacramento County. Local law enforcement services include response to calls for service and trouble spots, investigations, surveillance, and routine patrolling. The County maintains a service ratio goal of having one sheriff's deputy per 1,000 residents (Sacramento County 2017). The closest SSD Substation is the Kilgore Station East Division located approximately 3.5 miles north in Rancho Cordova at 2897 Kilgore Road. SSD staff assigned to the substation provide general law enforcement services to Rancho Cordova, Rosemont, Rancho Murieta, Gold River, Mather, and Butterfield-Riviera East. The East Division provides patrol, investigative, Problem Oriented Policing, report writing, crime prevention, and crime analysis functions (SSD 2018).

SCHOOLS

The Mather South Plan Area is within the service area of the Elk Grove Unified School District (EGUSD). EGUSD covers 320 square miles and includes the communities of Florin, Franklin, Laguna Creek, Laguna West, Rancho Murieta, Sheldon, Sloughhouse, Valley Hi, Vineyard, Wilton, the City of Elk Grove and parts of the cities of Sacramento and Rancho Cordova. EGUSD operates 42 elementary schools, nine middle schools, nine comprehensive high schools, four alternative education schools (including a virtual academy), one charter school, one special education school, and one adult education school (EGUSD 2018a). During the 2016-2017 school year, EGUSD had a total student enrollment of 63,061 students (EGUSD 2018b).

The Plan Area is currently located within the attendance area of Sierra Enterprise Elementary School for grades K-6, Katherine L. Albiani Middle School for grades 7-8, and Pleasant Grove High School for grades 9-12. As of February 2018, both Katherine

Albiani Middle School and Pleasant Grove High School were overcrowded; therefore, students moving into the Plan Area could be redirected to Smedberg Middle School and Sheldon High School unless new school facilities are built (School Site Locator 2018). EGUSD may adjust attendance boundaries as needed in the future to accommodate changes in population and as new school facilities are developed.

Parks and Recreation

The Mather South Plan Area is located within the Cordova Recreation and Park District (CRPD). CRDP serves approximately 120,000 residents of Rancho Cordova, Rosemont, Gold River, East College Greens, and Mather. CRPD is an independent, special district within the County of Sacramento and is governed by an elected board. They own and operate over 600 acres of open space and parkland, including over 40 parks, four recreation centers, three sports centers and community pools and spray parks (CRPD 2018). The closest parks to the Plan Area are Heron Landing Park (0.1 mile), Argonaut Park (0.4 mile), Sandpiper Park (0.5 mile), Eagles Nest Park (0.3 mile), and Kavala Ranch Park (0.7 mile); however, these parks are located to the east on the other side of the Folsom South Canal and may not be easily accessible to residents within the Plan Area. Therefore, the most accessible parks from the Plan Area are Independence Park (0.9 mile) and Veterans Park (1.3 miles), which are both located in the Independence at Mather community to the west.

The Plan Area is part of the Mather Regional Park, which is managed by Sacramento County Regional Parks. Mather Regional Park includes Mather Golf Course and Mather Lake, and provides amenities for golfing, picnicking, and fishing. Mather Preserve, which is managed by Sacramento County, is located directly to the west of the Plan Area. Mather Preserve was established in 2016 and was intended to create a secure, actively managed habitat preserve.

Libraries

The Sacramento Public Library System provides library services to the residents of Sacramento County. The library system is comprised of interdependent branches providing services to all residents. Branches are grouped by services, geography, and usage patterns to provide efficient and economical services to the residents of the County. The Plan Area is within the Sunrise Douglas Service Area (previously known as Rancho Cordova Service Area) and the nearest library is the Rancho Cordova Community Library, approximately 4.3 miles northwest of the Plan Area on Folsom Boulevard.

Regulatory Setting

Sacramento County General Plan

To assure adequate service levels and funding for public services, the Sacramento County General Plan includes the following policies that may applicable to the project.

LU-65. Levels of service shall be consistent with policies in this Plan, or where none are applicable, shall use Federal and State environmental standards and commonly accepted industry norms and standards as guidelines.

LU-66. Assure service availability, adequacy, and funding at each stage of the development process for all public services for the life of the project consistent with the intent of the adopted Public Facilities Financing Plan and accompanying Phasing Plan.

LU-67. Funding to construct community and regional facilities located in new growth areas shall be based on broad based funding. Developments within new growth areas shall participate, when possible, in a program to fund the construction of community and regional facilities.

LU-69. Supplemental mitigation fees may be established by the Board of Supervisors provided they find that supplemental fees are critical and necessary to meet the facility funding needs of a service provider and that traditional methods are inadequate.

CORDOVA COMMUNITY PLAN

The Cordova Community Plan contains the following policies related to public services:

PS-6. Ensure the availability and accessibility of public services for all segments of the population.

PS-7. Promote the concept of coordinated development of a single site by multiple agencies (e.g., fire, libraries, schools and parks) to provide greater convenience for the public.

PS-8. Provide support for the Sacramento Metropolitan Fire District in the siting, remodeling, consolidation, and relocation of fire stations and fire prevention facilities due to their recent reorganization.

PS-9. Promote suitable fire protection/prevention measures for all developments.

PS-11. Promote coordination between the Sheriff and RT in matters related to safety in public transit use.

PS-12. Encourage the concept of neighborhood policing, and the formation of “Neighborhood Watch” programs.

PS-13. Promote a method or system for community communication for the Sheriff.

PS-14. Promote coordination between the Sheriff and local school districts.

ED-4. Promote neighborhood participation in school site planning of facilities, services and connectivity.

ED-5. Ensure adequate school facilities to serve newly developing areas.

ED-10. Encourage efforts to identify new funding sources for school facilities.

ROS-1. Promote a high-quality network of parks and open space that provides a mix of passive and active recreational opportunities for community residents.

ROS-2. Ensure a balanced mix of passive and active recreation opportunities in open space areas, and promote the environmental sustainability of these resources.

PS-10. Ensure that all library sites are adequately served by public transit.

MATHER FIELD SPECIFIC PLAN AND SPECIAL PLANNING AREA

603-19. PERFORMANCE STANDARDS FOR MATHER FIELD EXCEPT THE SINGLE FAMILY RESIDENCES AND PARKS SUBAREAS AS IDENTIFIED IN SECTION 603-20.3 AS "Site D."

INFRASTRUCTURE PROVISION AND FINANCING

B. All development within the Mather Field Special Planning Area (SPA), new and existing, regardless of private or public ownership, shall be subject to the payment of fees, assessments, special taxes, and any other charges in accordance with any subsequent infrastructure financing plan adopted by the Board of Supervisors for the Mather Field SPA, including any authorized adjustments thereto as provided within such infrastructure financing plan, and any other fees adopted by the County in accordance with the requirements of Chapter 5 (commencing with Section 66000) of Division 1 of Title 7 of the Government Code or pursuant to any other enabling law. Such infrastructure financing plan may include, but not by way of limitation, roadway, transit, water supply, sanitary sewer, drainage, fire protection, landscape and lighting facilities, and utilities.

PUBLIC SAFETY

M. Crime prevention measures recommended by the Sheriff Department's Crime Prevention Unit should be incorporated into the design of future developments within Mather Field to the maximum extent feasible.

FIRE PROTECTION AND EMERGENCY SERVICES

STATE

CALIFORNIA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

In accordance with CCR Title 8 Sections 1270, "Fire Prevention" and Section 6773 "Fire Protection and Fire Equipment," the California Occupational Safety and Health Administration has established minimum standards for fire suppression and emergency medical services. The standards include, but are not limited to, guidelines on the

handling of highly combustible materials; fire hose sizing requirements; restrictions on the use of compressed air; access roads; and the testing, maintenance, and use of all firefighting and emergency medical equipment.

EMERGENCY RESPONSE/ EVACUATION PLANS

The State of California passed legislation authorizing the Office of Emergency Services to prepare a Standardized Emergency Management System (SEMS) program, which sets forth measures by which a jurisdiction should handle emergency disasters. SEMS unifies all elements of California's emergency management community into a single system. Non-compliance with SEMS could result in the State withholding disaster relief reimbursements from the non-complying jurisdiction in the event of an emergency disaster.

LOCAL

FIRE DISTRICT MASTER PLANS

Fire District Master Plans provide policy guidance, objectives, and activities in an effort to improve emergency response to the districts' citizens, use existing resources more efficiently, and improve district facilities. In 2010, Metro Fire adopted a neighborhood-based deployment plan to have response times that meet national best practice recommendations. In areas that have over 1,000 people per square mile, the standard travel time is four minutes with an overall reflex time of seven minutes (1st Due and 1st Alarm requirement). In 2013, Metro Fire issued the Fire Department Growth Analysis, which reviewed the number and location of new fire stations that would be required to meet 1st Due and 1st Alarm response requirements, taking into consideration the various planning areas where development is proposed.

SACRAMENTO COUNTY GENERAL PLAN PUBLIC FACILITIES ELEMENT

The policies in the Public Facilities Element of the Sacramento County General Plan that support emergency services strategies and may be relevant to the Mather South Project include the following:

PF-54. Require new development to install fire hydrants and associated water supply systems which meet the fire flow requirements of the appropriate fire district.

PF-55. New development shall provide access arrangements pursuant to the requirements of the California Fire Code.

PF-57. New development, redevelopment or traffic signal replacement shall require the installation of emergency signal activation systems in all street improvements requiring signalization when requested by a fire district.

PF-58. Traffic calming measures should be used wherever possible in a manner that does not delay emergency vehicle responses.

PF-59. Alternative methods of fire protection and access must be instituted if access is reduced to emergency vehicles.

PF-60. Require that structures of four stories or more in height provide on-site equipment and facilities to the satisfaction of the appropriate fire district, consistent with industry norms and standards.

PF-61. Mitigation fees may be established by the Board of Supervisors or Fire Districts for the purpose of funding adequate fire protection and emergency medical response facilities provided they find that such fees are critical and necessary to meet the facility funding needs of the fire district and that existing methods of financing are inadequate.

PF-63. Mitigation fees established by County ordinance or Fire District shall, together with other reasonably assured sources of funding identified in the fire district's financing plan, be sufficient to implement the adopted financing plan.

PF-64. No building permit for new residential or commercial construction shall be issued when there is a Board of Supervisors certified fire district financing plan for any applicable fire district, which provides for mitigation fees, until the applicant has contributed all required mitigation fees.

LAW ENFORCEMENT SERVICES

LOCAL

SACRAMENTO COUNTY GENERAL PLAN PUBLIC FACILITIES ELEMENT

Sacramento County General Plan contains policies pertinent to law enforcement services, which are intended to provide adequate protection services to all of Sacramento County. The following policy may be relevant to the Mather South Project:

PF-53. Design neighborhoods and buildings in a manner that prevents crime and provides security and safety for people and property; when feasible.

SCHOOL SERVICES

STATE

LEROY F. GREENE SCHOOL FACILITIES ACT OF 1998

The "Leroy F. Greene School Facilities Act of 1998," also known as Senate Bill 50 (SB 50) established a State program to provide per-pupil funding for new construction and modernization of existing school facilities. The passage of Proposition 1A in 1998 allowed SB 50 to be fully implemented. SB 50 limited the power of cities and counties to require mitigation of school facilities as a condition of approving new development and authorized school districts to assess fees (at various levels) to directly offset the costs associated with increased capacity as a result of new development.

OFFICE OF PUBLIC SCHOOL CONSTRUCTION AND THE STATE ALLOCATION BOARD

The State Allocation Board (SAB) is responsible for determining the allocation of state resources used for the new construction and modernization of local public school facilities. The SAB is also responsible for the administration of the State School Facility Program, the State Relocatable Classroom Program and the Deferred Maintenance Program. The SAB is the policy-level body for the programs administered by the Office of Public School Construction (OPSC). The OPSC, as staff to the SAB, implements and administers the School Facility Program and other programs of the SAB. The OPSC also has the responsibility of verifying that all applicant school districts meet specific criteria based on the type of funding which is being requested.

There have been four Kindergarten – University Public Education Facilities Bond Acts passed by voters (Proposition 1A, 47, 44 and 1D) that allocated billions of dollars in general obligation bonds for K–12 facilities through the School Facility Program. These funds help assist school districts with overcrowding, accommodating future enrollment growth and repairing and modernization of older facilities.

CALIFORNIA EDUCATION CODE

The California Education Code authorizes the California Department of Education to develop site selection standards for school districts. The California Department of Education School Facilities Planning Division has prepared a School Site Selection and Approval Guide that provides criteria for location appropriate school sites in the State of California. School sites within the Plan Area are required to meet these criteria (in order of importance): safety, location, environment, soils, topography, size and shape, accessibility, public services, utilities, cost, availability, and public acceptance.

LOCAL

SACRAMENTO COUNTY OFFICE OF EDUCATION

The Sacramento County Office of Education (SCOE) offers various services and programs to the 13 school districts and 244,000+ K-12 public school students within Sacramento County. They provide services such as technical assistance, curriculum and instructional support, staff development, legal and financial advice and oversight. SCOE also directly educates more than 30,000 children and adults.

SACRAMENTO COUNTY GENERAL PLAN PUBLIC FACILITIES ELEMENT

The Sacramento County General Plan contains policies that are pertinent to public school facilities. These policies are intended to support the stated goal to have “new public schools which serve as a neighborhood focus and maintain a quality learning environment for Sacramento County’s residents as the County population increases.”

The below policies pertain to developing schools that are functionally and physically integrated within their surrounding neighborhoods; developed through a coordinated planning effort between school districts; and equivalent to state standards for school enrollment and school site size for all Sacramento schools. Applicable General Plan policies include:

PF-27. Community plans shall identify all existing and planned school sites and shall include guidelines and conceptual examples for incorporating new schools into overall neighborhood design.

PF-28. Community and Specific Plans shall consider the needs of community colleges and address the feasibility and appropriateness of off-campus facilities, particularly in TODs.

PF-29. Schools shall be planned as a focal point of neighborhood activity and interrelated with neighborhood retail uses, churches, neighborhood and community parks, greenways and off-street paths whenever possible.

PF-30. New elementary schools in the urban area should be planned whenever possible so that almost all residences will be within walking distance of the school (one mile or less) and all residences are within two miles of a school.

PF-31. Schools shall be planned adjacent to neighborhood parks whenever possible and designed to promote joint use of appropriate facilities. The interface between the school and park shall be planned with an open design and offer unobstructed views to promote safety.

PF-32. Elementary schools shall not be located along arterials and thoroughfares. Junior high and high schools should be located near roadways with adequate capacity and should provide adequate parking to facilitate the transport of students.

PF-34. All school site plans shall be designed to minimize traffic speed and maximize traffic flow around the school, allowing for several access points to and from the site.

PF-35. New schools should link with planned bikeways and pedestrian paths wherever possible.

PF-38. Land dedications or reservations for schools should meet state guidelines for school parcel size. Where more than one owner or development project is involved, there shall be appropriate assurances and conditions to assure that requisite acreage can and will be assembled to meet facility site requirements.

PF-39. Specific Plans shall show the location of future school sites based upon adopted school district master plans and criteria in the General Plan.

PARK AND RECREATION SERVICES

STATE

CALIFORNIA GOVERNMENT CODE SECTION 66477

California Government Code Section 66477 (Quimby Act) allows local governments to exact land dedications or fees in lieu for park purposes from new subdivisions. The law prescribes a standard consistent with the circumstances of each park district based on a minimum of 3 acres and a maximum of 5 acres per 1,000 residents. Sacramento County's Planning Division and Municipal Services Agency oversee these requirements in the unincorporated area.

LOCAL

TITLE 22

Title 22 of the Sacramento County Code provides direction on calculating park acreage requirements for residential developments. Depending on the park district, residential developments are required to provided dedicated land for park construction or pay in-lieu fees. For the CRPD, Title 22 sets a standard of 4.87 acres per 1,000 persons for land dedication or in lieu fees.

SACRAMENTO COUNTY GENERAL PLAN PUBLIC FACILITIES AND OPEN SPACE ELEMENT

The Sacramento County General Plan contains policies pertinent to park and recreation facilities. These policies are intended to support the goal to have "adequate and well-funded local park facilities for existing and new developments." Applicable General Plan policies include:

PF-122. To help assure that local recreation and park district Master Plan standards for levels of service may be achieved and maintained, the County may require new development to dedicate land, pay in-lieu fees, development impact fees, or otherwise contribute a fair share to the acquisition and development of parks and recreation facilities. For development in infill areas where land dedication may not be practical, the County in cooperation with the affected park district may explore creative alternatives for providing park and recreation facilities.

PF-123. At a minimum, new residential developments approved by the County shall provide sites for local parks for their prospective residents consistent with the Quimby Act and the land dedication standards for each local recreation and park district adopted by Sacramento County in Chapter 22.40 of the Sacramento County Code. These requirements may be satisfied by land dedication, payment of fees in lieu of dedication, or on-site improvements per the provisions of Chapter 22.40, which will be regularly updated to reflect changing demography. These include the baseline standard of three acres of land for parks per 1,000 residents or in cases where existing parklands within a park district exceed three acres per 1,000 population, that higher ratio shall be

the standard for new developments up to a maximum of five acres of land for parks per 1,000 residents based on calculations specified in SCC Chapter 22.40.

PF-125. The County shall promote the provision of on-site recreational amenities and gathering places that are available to the public by large scale development projects and may consider providing incentives such as density bonuses or increases in building coverage for that purpose.

PF-127. Require new residential developments to participate in park O & M financing mechanisms where established by local park districts or the County.

PF-128. Encourage park development adjacent to school sites and the formation of joint use agreements between school and park districts.

OS-10. Sacramento County shall seek to attain the County Regional Park System standard of 20 acres of regional parkland per 1,000 population.

LIBRARIES

LOCAL

SACRAMENTO COUNTY GENERAL PLAN PUBLIC FACILITIES ELEMENT

The policies in the Public Facilities Element that support the County's library services strategies and are relevant to the Mather South Project are as follows:

PF-42. Share capital costs of library construction and renovation for existing residents through bond financing or other appropriate measures and by new residents and workers through fees on new development.

PF-43. Include community library needs among facilities to be financed by financing districts created in new urban areas.

PF-45. New commercial development in financing districts shall contribute to library financing such that fees based on projected employment are approximately equivalent to the fees for an equivalent number of new residents.

PF-46. Incorporate planned libraries into community and specific plans for new development.

LIBRARY FACILITY MASTER PLAN 2007 – 2025

The Library Facility Master Plan (FMP) for the Sacramento Public Library System sets forth general standards and criteria for the renovation and construction of all new libraries. Existing and future library needs are largely population driven, e.g., for every 30,000 residents in a community, at least one full service library is required. Ideally, new libraries would have 0.4 to 0.6 square feet per capita with some basic minimum and maximum sizes. The Library FMP also establishes preferred sizing and footprint and

desirable components such as volumes and collection, meeting rooms, study areas, computer terminals and so on. Each of these items is standards driven. One of the most critical items for future library development is location. A new library in a poor location is an under-utilized library, and conversely, an older, under-sized library in a good location is a highly used library. Important location criteria include: land availability, cost, quality of the site, size, accessibility (parking, pedestrian access, public transportation), and synergy/location with other public and private uses. For example, a new library is often better positioned in a new town square, rather than in a residential neighborhood.

SIGNIFICANCE CRITERIA

The criteria used to evaluate the significance of impacts to public services resulting from the Mather South Project were developed based on Appendix G of the State CEQA Guidelines and professional standards.

Impacts of the project on public services are considered significant if implementing the project would:

1. Result in substantial adverse physical impacts associated with the provision of emergency services and fire protection services.
2. Result in substantial adverse physical impacts associated with the provision of law enforcement services.
3. Result in substantial adverse physical impacts associated with the provision of public school services.
4. Result in substantial adverse physical impacts associated with the provision of park and recreation services, or result in substantial physical deterioration of an existing facility due to increased use.
5. Result in substantial adverse physical impacts associated with the provision of library services.

METHODOLOGY

An evaluation of potential impacts associated with public services is based on a review of existing services and demand projections from the development of the project. Demand projections are based on the facility plans and/or comments received from the applicable public service purveyors.

ITEMS NOT DISCUSSED FURTHER

All issues have been evaluated below.

IMPACTS AND ANALYSIS

2016 MATHER FIELD PROJECT EIR DETERMINATION

The Mather Field Project EIR evaluated impacts related to public services from implementation of the Mather Field Project which consisted of a realignment of Zinfandel Drive and trunk extension, creation of the Mather Preserve and the establishment of an Urban Development Area designation for the Mather South Plan Area.

The EIR concluded less than significant related to the construction of facilities needed to provide public services. The discussion of impacts can be found on page 11-24 and 11-25 of the Mather Field Project EIR and is hereby incorporated by reference. The EIR also concluded less than significant related to provision of fire service upon payment of mitigation fees, less than significant related to provision of law enforcement service upon payment of property tax into General Fund, less than significant related to waste service, less than significant related to schools with dedication of land and payment of fees as applicable, and less than significant related to parks with dedication of land. The discussion of impacts is located on pages 11-31 through 11-34 of the Mather Field Project EIR and is hereby incorporated by reference.

MATHER SOUTH PROJECT IMPACTS DETERMINATION

IMPACT: FIRE PROTECTION AND EMERGENCY SERVICES

The Mather South Project would increase the demand for fire protection and emergency services provided by Metro Fire. The project includes 3,522 new dwelling units, commercial, retail, and civic uses. Utilizing the County's estimate of 2.64 persons per dwelling unit, the Mather South Project would increase the population of the Jackson Road corridor area by approximately 9,298 residents (i.e., 3,522 du x 2.64 persons). This increase in demand would require additional staff and fire facilities to maintain service levels and to ensure that adequate fire protection is provided.

Metro Fire has indicated that the Mather South Project would trigger the need for a new fire station within the Plan Area (Metro Fire 2017). As a result, the project has included a new fire station site within the site plan, which is located along Gateway North Drive near Zinfandel Drive within a residential parcel (R1; Plate PS-2), and included in Phase 1 of scheduled development. This proposed location offers easy access to Zinfandel Drive and the ability to serve the Plan Area and surrounding areas with a 4-minute maximum response time. Metro Fire has requested that the site be 2.5 acres with a minimum frontage of 350 feet and the land for the fire station would be dedicated to Metro Fire as a part of the Mather South Project. The exact location and size of the parcel will be finalized when the land is dedicated; however, it would be required to meet Metro Fire location requirements for new fire stations and be approved by the agency.

The fire station would serve the entire Mather South Plan Area, in addition to adjacent areas outside of the Plan Area. Once operational, no other fire protection or emergency services facilities would be required to serve the project. Because this facility is located within the Plan Area as a part of the project, the environmental impacts associated with the development of this facility are evaluated throughout this EIR. Construction and operation of the fire station would not result in any physical impacts that are not already evaluated within this document. Furthermore, the project would adhere to all applicable stipulations of the Fire Code as it related to new development. Therefore, impacts associated with fire protection services would be **less than significant**.

MITIGATION MEASURES

None required.

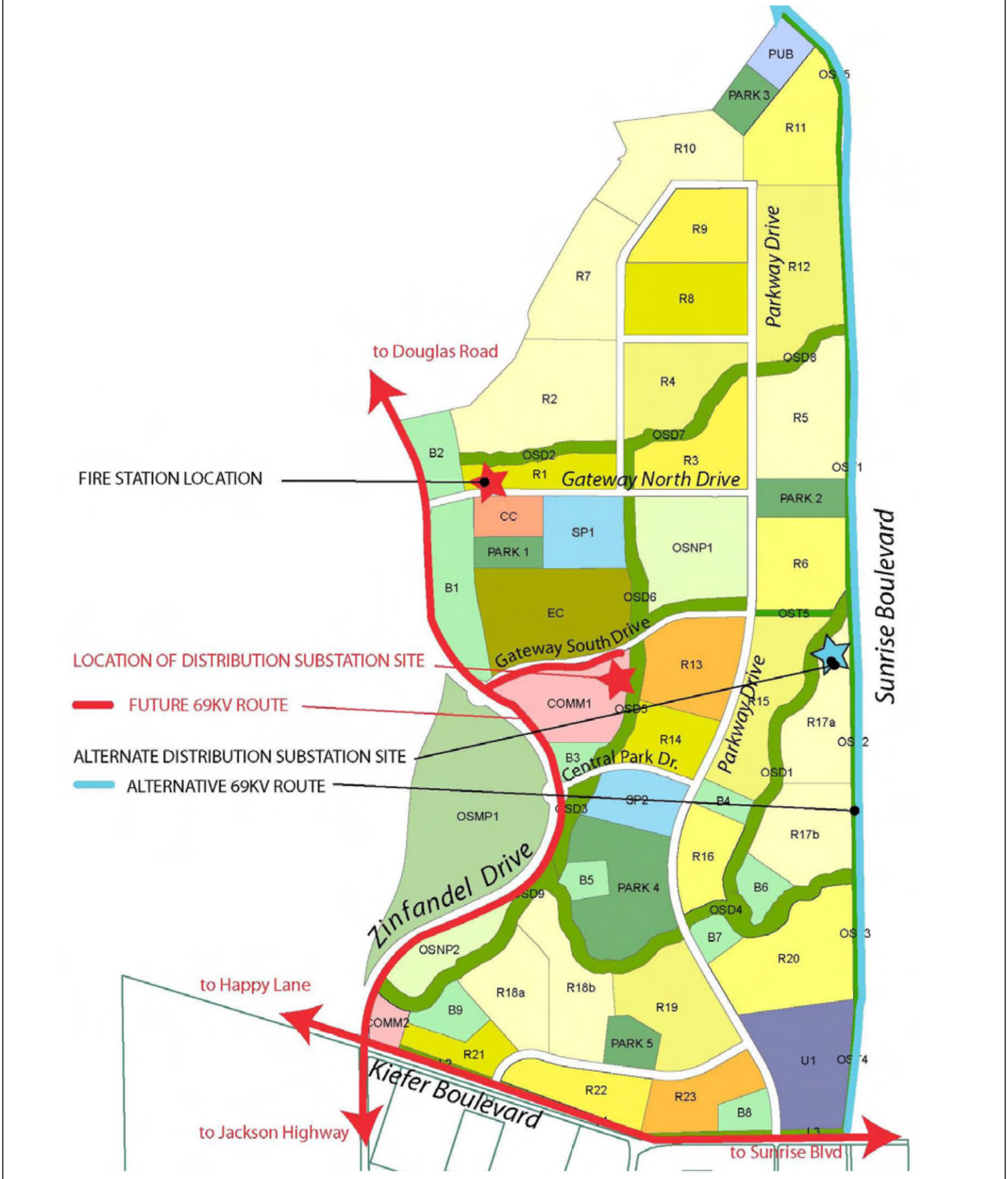
IMPACT: LAW ENFORCEMENT SERVICES

The Mather South Project includes a maximum of 3,522 residential units which would provide housing for a residential population of approximately 9,298 residents, as well as associated non-residential uses, including commercial, retail, and civic uses which would increase the demand for law enforcement services to be provided by SSD. The provision of law enforcement services are not necessarily based on facility locations, as timely services are generally provided by personnel who are on patrol within communities. SSD has substations located throughout the unincorporated county, including the closest one, Kilgore Station East Division located approximately 3.5 miles north in Rancho Cordova at 2897 Kilgore Road. SSD has indicated that the existing substation can accommodate new staffing and equipment that may be needed to serve the growth associated with the Mather South Project.

The project would provide funding in the form of development impact fees and ongoing property taxes that would provide funding for additional staffing and equipment needed to maintain and improve service levels for law enforcement within the Mather South Plan Area and the surrounding areas. Law enforcement services will be funded through the County Police Services Community Facilities District 2005-1 (CFD 2005-1) annual special tax. Taxes will be levied on each new residential unit developed with in the Project area in accordance with the provisions of CFD 2005-1. These funding mechanisms, policies, and regulations would assist SSD in adequately serving new growth and demand. Because no new facilities are required as a result of the project, there would be no additional impacts on the physical environment associated with the construction of a new facility. Therefore, the impact would be **less than significant.**

MITIGATION MEASURES

None required.



Source: Mather South Community Master Plan 2018

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Plate PS-2: Proposed Fire Station Site

ASCENT ENVIRONMENTAL

Impact: School Services

The Mather South Project is within the service area of the EGUSD. Development of the project would result in increases to the local student population. Based on student generation rates from the EGUSD's March 2018 Development Fee Justification Study/School Facilities Needs Analysis (EGUSD Analysis), the estimated student enrollment resulting from the project would be approximately 2,288 total students, with approximately 1,271 students in grades K – 6 (elementary school), 355 in grades 7 – 8 (middle school), and 662 in grades 9 – 12 (high school). Refer to Table PS-1.

Table PS-1: Student Generation Estimates

Housing Type	Target Housing Units	Student Generation Rate			
		Elementary	***Middle School***	***High School***	***Total***
Single Family	2,741	0.3952	0.1111	0.2045	0.7108
Multi family	781	0.2405	0.0649	0.1297	0.4351
Students Generated from Single Family		1083.2	304.5	560.5	1948.3
Students Generated from Multi-Family		187.8	50.7	101.3	339.8
Total Generated		**1271.1**	**355.2**	**661.8**	**2288.1**
Source: EGUSD 2018					

The EGUSD Analysis also indicates that the typical student capacity is 850 students for an elementary school, 1,200 students for a middle school, and 2,200 students for a high school. Based on this assumption, the estimated student generation for the Mather South Project would increase the demand for schools by 1.5 elementary schools, 0.3 middle schools, and 0.3 high schools at full buildout.

The project includes two elementary school sites within the Plan Area, each 10-12 acres in size, which would accommodate all of the potential elementary school students generated by the project, as well as students from other nearby areas. According to the EGUSD Analysis, the school district as a whole is over capacity by 6,570 students for elementary schools, 325 students for middle schools, and 320 students for high schools. Therefore, although the project would create additional capacity for elementary school students, it would increase demand for middle and high school capacity in a school district that is already considered over capacity (EGUSD 2018b).

California Government Code Section 65995(h) states that the payment or satisfaction of a fee, charge, or other requirement levied or imposed pursuant to Section 17620 of the Education Code is deemed to be full and complete mitigation of the impacts for the planning, use, development, or the provisions of adequate school facilities. Section 65996(b) finds that these provisions provide full and complete school facilities mitigation. The Mather South Project would pay all fees related to school facilities consistent with SB50 and Government Code.

Because the construction of two elementary schools would be located within the Plan Area and are part of the project, the environmental impacts associated with the construction and operation of the schools are evaluated throughout this EIR.

Therefore, the Mather South Project provides two elementary school sites and would be required to contribute school impact fees in compliance with Government Code Sections 65995(h) and 65996(b), the project would satisfy its school requirements and impacts related to school services would be **less than significant**.

MITIGATION MEASURES

None required.

IMPACT: PARKS AND RECREATION SERVICES

The County Land Development Ordinance (Title 22 of Sacramento County Code) requires new residential developments to dedicate land, pay a fee in lieu thereof, or provide a combination of dedication and in-lieu fees for park facilities consistent with Quimby Act requirements. The Quimby Act and the Sacramento County General Plan require 3-5 acres of parkland per 1,000 residents.

The Mather South Project includes four neighborhood parks and one community park which are distributed throughout the Plan Area. The total proposed acreage of neighborhood parks would be 21.55 acres, with each ranging in size from 4.55 acres to 7.03 acres. The project also includes the construction of a 22.28-acre community park. Therefore, the total proposed park acreage within the Plan Area would be 44.03 acres.

Park land dedication requirements as outlined in the Community Master Plan are based on County Code sections 22.40.035[1] and 22.40.045, which allow 4.87 acres of parkland per 1,000 residents in the Cordova area. Title 22 provides parkland calculation factors to assist in determining the appropriate amount of parkland required for projects located within the CRPD based on housing type. Table PS-2 below provides these factors and shows the project's parkland dedication requirement.

Table PS-2: Park Acreage Dedication Calculation

Land Use	Gross Acres	Zone Designation	Target Units	Park Acreage per Dwelling	Total Park Acreage Required
LDR	353.23	RD-5 – RD-8	2,292	0.0142	32.54
MDR	44.9	RD-10	449	0.0119	5.34
HDR	34.07	RD-20	781	0.0097	7.58
Totals	432.24		3,522		45.46
Total Parkland Provided					44.03
Difference					-1.43

[1] Title 22 requires 4.87 acers of parkland dedication per 1,000 residents. This is slightly below the dedication requirements in CRPD's Master Plan. However, according to CRPD's staff use of Title 22s requirements within the unincorporated county is acceptable. (CRPD 2018)

As shown in the table above, a minimum of 45.46 acres of active parkland is required and only 44.03 acres are proposed, thus there is a shortage of 1.43 acres of parkland within the Plan Area. However, the Mather South Community Master Plan includes a policy that addresses this shortfall and ensures that the required parkland would be dedicated. The policy is as follows:

5-7: Any shortfall in parkland acres required under the County Code shall be addressed in adjusting the size, and potentially the configuration, of Park 1 in Phase 1 in the Tentative Map approval process established in the County Code.

In addition to the above parkland, the Mather South Project includes 210.50 acres of open space area, which is not included in the overall acreage for park dedication. This area may provide some passive recreation opportunities for future residents, but it does not qualify as parkland as defined by the Quimby Act and, therefore, is not used in required parkland dedication requirements. This open space land includes 13.48 acres of open space trails, 4.85 acres of landscape buffers, 50.44 acres of water quality/detention basins, 80.06 acres of natural preserve and 55.6 acres of an open space drainage system.

Although the Mather South Project would not dedicate the amount of parkland required under County Code, the applicant would make up that acreage through the implementation of Policy 5-8, or if infeasible, through in-lieu fees, consistent with Title 22 of the Sacramento County Code. Furthermore, given that substantial park and open space would be developed in the Plan Area, it is unlikely that the project would increase the demand for existing park services such that a substantial physical deterioration of existing facilities would result. Impacts related to park and recreation services would be ***less than significant***.

MITIGATION MEASURES

None required.

IMPACT: LIBRARIES

Residents of the Mather South Project would increase the demand for library services provided by the Sacramento Public Library Authority. The project does not include plan for a new library facility; however, the Sacramento Public Library Authority Facility Master Plan 2007 – 2025 (Library Master Plan) divides the County into service areas. The Mather South Plan Area is located within the Rancho Cordova/Sunrise Douglas Service Area. The Library Master Plan took into account anticipated growth in this service area and recommends three to four new libraries for Rancho Cordova/Sunrise Douglas Service Area. This is to correct current deficiencies and to accommodate the anticipated growth of 100,000 people in the area from 2007 to 2025 (Sacramento Public Library Authority 2007). Although none of the proposed new branch locations are anticipated to be located within the Plan Area, they are in close proximity to the Plan Area and would serve the Mather South Project residents once they are built.

Implementation of the Library Master Plan would serve the additional population generated by the Project.

The Mather South Project would provide funding in the form of development impact fees and ongoing property taxes that would provide a funding mechanism to help the Sacramento Public Library Authority implement the Library Master Plan, which accommodates planned growth in the Plan Area and surrounding areas. Therefore, the project would not result in substantial adverse physical impacts associated with the provision of library services. Impacts would be **less than significant**.

MITIGATION MEASURES

None required.

16 PUBLIC UTILITIES

INTRODUCTION

The Mather Field Project EIR (2016) evaluated the Mather South Plan Area at the plan-level and that analysis is hereby incorporated by reference in this document and is summarized below where appropriate. This chapter describes the regulatory and environmental setting for public utilities in the Plan Area, identifies and analyzes impacts related to public utilities from implementation of the Mather South Project at a project-level, and if necessary, recommends mitigation measures to reduce or eliminate significant impacts.

The Mather South Project is located within the following public utility and service districts. Electricity and natural gas are discussed separately in Chapter 9 Energy:

Local Sewer Service: Sacramento Area Sewer District

Regional Sewer Service: Sacramento Regional County Sanitation District

Solid Waste: Sacramento County Waste Management and Recycling

During the Notice of Preparation (NOP) scoping process, some comments were raised related to sewer connections. A copy of the NOP and comment letters received in response to the NOP are included in Appendix PD-2 of this Mather South Project Draft EIR.

ENVIRONMENTAL SETTING

SEWER SERVICES

The Mather South Plan Area is within the service area of Sacramento Area Sewer District (SASD) and Sacramento Regional County Sanitation District (Regional San). SASD builds and maintains trunk lines whereas Regional San builds and operates the interceptor lines and regional wastewater treatment plant. Sewage is routed to the Sacramento Regional Wastewater Treatment Plant (SRWTP) by the collections systems owned by Regional San. The SRWTP is a high-purity oxygen-activated sludge facility. SRWTP is permitted to treat an average dry weather flow (ADWF) of 181 million gallons per day (mgd) and a daily peak wet weather flow of 392 mgd; SRWTP currently receives and treats approximately 141 mgd. After secondary treatment and disinfection, a portion of the effluent from the plant is further treated in Regional San's Water Reclamation Facility and then used for non-potable purposes, such as landscape irrigation within select areas of Elk Grove and the SRWTP. The majority of the treated wastewater is dechlorinated and discharged into the Sacramento River. Pursuant to the 2010 National Pollutant Discharge Elimination System (NPDES) permit issued by the

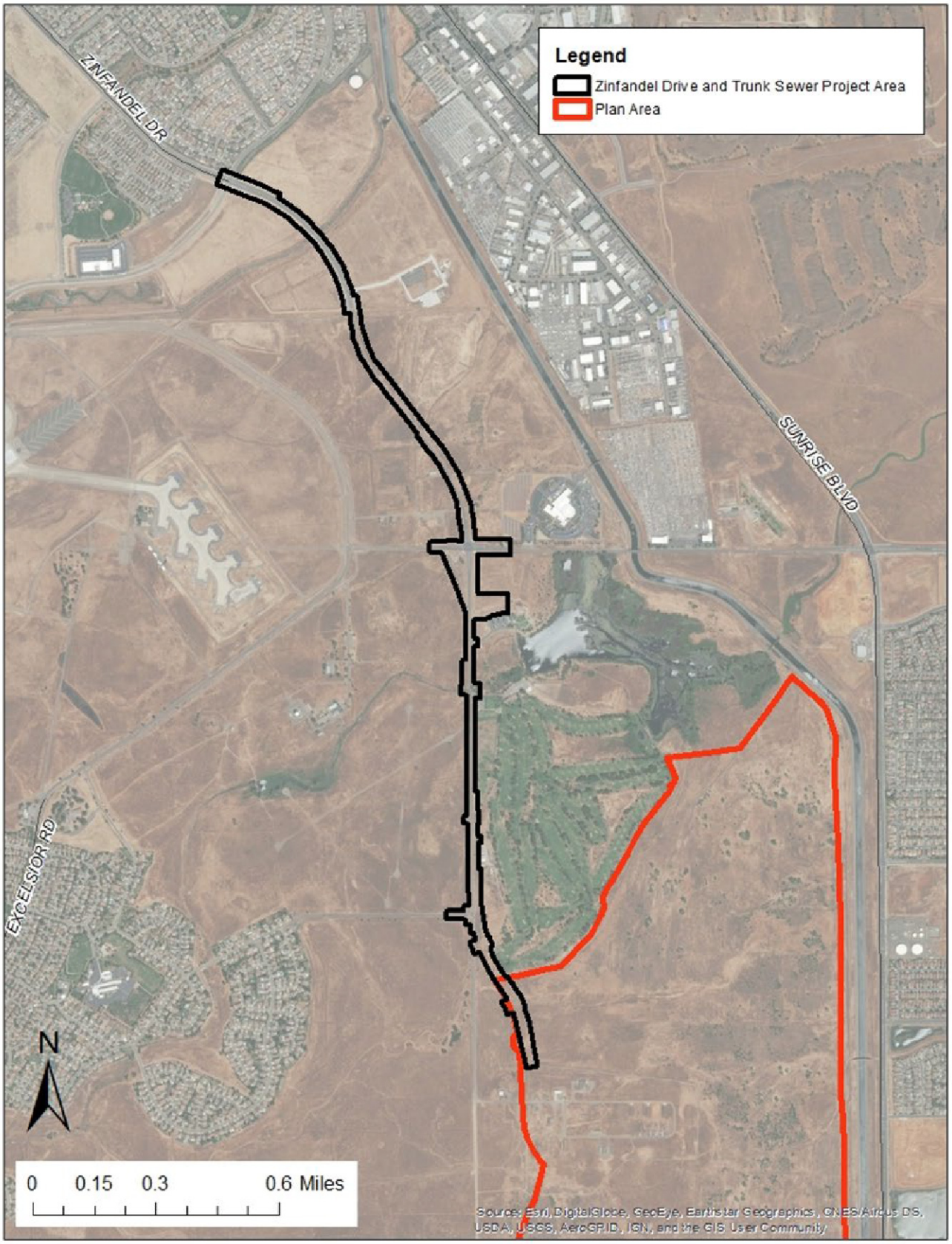
Central Valley Regional Water Quality Control Board (RWQCB), the plant was required to implement tertiary treatment of wastewater before discharge to the Sacramento River (Sacramento County 2010). Regional San is in the process of constructing the EchoWater Project, which is estimated to be completed by 2023. The project will result in the construction and installation of the biological nutrient removal (BNR) activated sludge facility, a primary effluent pumping station with a capacity of 330mgd, a return activated sludge (RAS) pumping system, and ancillary infrastructure will implement the required tertiary treatment process (Regional San 2018).

Currently, there is no sewer infrastructure serving the Mather South Plan Area. However, as part of the Mather Field Project which was evaluated in the 2016 EIR referenced above, a sewer line (trunk extension) along Zinfandel Drive evaluated and was approved. This trunk extension materials are provided in Appendix PU-1. This extension would occur in two phases. The first phase would connect to the existing sewer lines along Zinfandel Drive within Rancho Cordova city limits and bring a sewer line just south of Douglas Road. The second phase would extend the sewer line from Douglas Road to just south of the Mather Golf Course, which is the northwestern corner of the Plan Area (Plate PU-1). Phase 2 is expected to be complete in 2020.

SOLID WASTE SERVICES

The Mather South Plan area would be served by the Sacramento County Department of Waste Management and Recycling, which provides solid waste services to unincorporated areas of Sacramento County. Sacramento County owns and operates the Kiefer Landfill, located at Kiefer Boulevard and Grant Line Road, which is the primary municipal solid waste disposal facility in Sacramento County. Kiefer Landfill is classified as a Class III municipal solid waste landfill and is permitted to accept general residential, commercial, and industrial refuse for disposal, including municipal solid waste, construction and demolition debris, green materials, agricultural debris, dead animals, and other designated debris.

The landfill facility occupies 1,084 acres, and is surrounded by a 3,000-acre open space buffer. The landfill itself occupies a 250-acre footprint, and is permitted to grow to up to 660 acres in size. As of 2012, it had a remaining capacity of over 87 million cubic yards (Sacramento County 2012:7). Kiefer Landfill's anticipated "ceased operations date" (the estimated date when the facility will reach its permitted capacity) is 2064, which anticipates future growth (CalRecycle 2018).



Source: Mather Field Project EIR (2016), Sacramento County

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Plate PU-1: Approved Zinfandel Drive Sewer Extension

ASCENT ENVIRONMENTAL

REGULATORY SETTING

SEWER SERVICES

SACRAMENTO COUNTY GENERAL PLAN

The Sacramento County General Plan contains the following policies related to the provision of wastewater collection and treatment.

LU-73. Sewer and water treatment and delivery systems shall not provide for greater capacity than that authorized by the General Plan.

PF-6. Interceptor, trunk lines, and flow attenuation facilities shall operate within their capacity limits without overflowing.

PF-7. Although sewer infrastructure will be planned for full urbanization consistent with the Land Use Element, an actual commitment of additional sewer system capacity will be made only when the land use jurisdiction approves development to connect and use the system.

PF-8. Do not permit development which would cause sewage flows into the trunk or interceptor system to exceed their capacity.

PF-9. Design trunk and interceptor systems to accommodate flows generated by full urban development at urban densities within the ultimate service area. System design may take into consideration land that cannot be developed for urban uses due to long-term circumstances including but not limited to conservation easements, floodplains, public recreation areas etc. This could include phased construction where deferred capital costs are appropriate.

PF-10. Development along corridors identified by the Sanitation Districts in their Master Plans as locations of future sewerage conveyance facilities shall incorporate appropriate easements as a condition of approval.

PF-15. Support CSD-1 and SRCSD policies to fund new trunk and interceptor capital costs through connection fees for new development.

PF-16. Support SRCSD policy to fully fund treatment plant operation through monthly service charges to system users. Fund treatment plant expansion and upgrades and existing trunk and interceptor replacements or improvements through connection fees or other revenue sources.

PF-18. New development projects which require extension or modification of the trunk or interceptor sewer systems shall be consistent with sewer facility plans and shall participate in established funding mechanisms. The County should discourage development projects that are not consistent with sewer

master plans or that rely upon interim sewer facilities, particularly if the costs of those interim facilities may fall on ratepayers. Prior to approval of a specific Commercial Corridor redevelopment project which requires extension or modification of the trunk or interceptor sewer systems, a sewer study and financing mechanism shall be prepared and considered along with the proposed Corridor redevelopment project, in consultation with the Sacramento Area Sewer District.

PF-19. Extension or modification of trunk or interceptor sewer systems that are required for new developments shall be consistent with sewer facility plans and shall participate in an established funding mechanism. New development that will generate wastewater for treatment at the SRWTP shall not be approved if treatment capacity at the SRWTP is not sufficient to allow treatment and disposal of wastewater in compliance with the SRWTP's NPDES Permit.

CORDOVA COMMUNITY PLAN

The Cordova Community Plan contains the following policy related to the provision of sewer services:

PS-1. Provide a well-planned sewer service with adequate capacity to serve the community, and accommodate new growth areas during the identified planning period.

MATHER FIELD SPECIFIC PLAN AND SPECIAL PLANNING AREA

The Mather Field Specific Plan and Special Planning Area contains the following policies related to the provision of sewer services:

M-UT-2. Upgrade wastewater facilities as new development occurs.

M-UT-3. Rehabilitate or replace, as necessary the sewer collection system in the residential area prior to reuse of the housing.

603-19. PERFORMANCE STANDARDS FOR MATHER FIELD EXCEPT THE SINGLE FAMILY RESIDENCES AND PARKS SUBAREAS AS IDENTIFIED IN SECTION 603-20.3 AS "Site D."

INFRASTRUCTURE PROVISION AND FINANCING

B. All development within the Mather Field Special Planning Area (SPA), new and existing, regardless of private or public ownership, shall be subject to the payment of fees, assessments, special taxes, and any other charges in accordance with any subsequent infrastructure financing plan adopted by the Board of Supervisors for the Mather Field SPA, including any authorized adjustments thereto as provided within such infrastructure financing plan, and any other fees adopted by the County in accordance with the requirements of Chapter 5 (commencing with Section 66000) of Division 1 of Title 7 of the Government Code or pursuant to any other enabling law.

Such infrastructure financing plan may include, but not by way of limitation, roadway, transit, water supply, sanitary sewer, drainage, fire protection, landscape and lighting facilities, and utilities.

SEWERS

G. Upon the County of Sacramento gaining effective control of the Mather Field sanitary sewer system and thereafter upon building occupancy or new construction, each new or existing commercial and/or residential use shall pay Sacramento Area Sewer District (SASD) and Sacramento County Regional Sanitation District (SRCSD) facility impact fees. These fees are as directed by SASD ordinance SDI-29 and SRCSD ordinance SRSD-0043 and are typically paid at the time of building permit issuance. All users of sanitary sewer facilities are subject to SASD and SRCSD bi-monthly service charges.

SOLID WASTE SERVICES

STATE

CALIFORNIA INTEGRATED WASTE MANAGEMENT ACT AND CALRECYLE

The Integrated Waste Management Act of 1989 is the result of two pieces of legislation, AB 939 and SB 1322, which created the California Integrated Waste Management Board (which has been renamed CalRecycle). The Integrated Waste Management Act mandated a goal of 25 percent diversion of each city's and county's waste from disposal by 1995 and 50 percent diversion in 2000, with a process to ensure environmentally safe disposal of waste that could not be diverted. CalRecycle plays a central role of promoting achievement of the waste diversion as mandated by the Act.

CalRecycle is the State agency designated to oversee, manage, and track California's 92 million tons of waste generated each year. They provide grants and loans to help California cities, counties, businesses and organizations meet the State's waste reduction, reuse and recycling goals. CalRecycle promotes a sustainable environment where these resources are not wasted, but can be reused or recycled. In addition to many programs and incentives, the Board promotes the use of new technologies for the practice of diverting California's resources away from landfills. The Board is responsible for ensuring that State waste management programs are primarily carried out through local enforcement agencies (LEAs). The State Water Resources Control Board (SWRQCB) and the Central Valley RWQCB also regulate waste disposal (the latter regulated solid waste before CalRecycle).

As reported in the CalRecycle 2008 Annual Report, California has exceeded the goals mandated by the Integrated Waste Management Act of 1989 by diverting 58 percent of its waste stream. This accomplishment is in part because of successful partnership between State government, local government, and the solid waste industry in California.

LOCAL

SACRAMENTO COUNTY GENERAL PLAN

The Sacramento County General Plan contains policies relevant to solid waste. The majority of the policies in the General Plan pertain to service providers and not to development projects. The policies in the Public Facilities Element that support the County's Solid Waste Services strategies and are relevant to the project relate to fees to support adequate waste facilities and are as follows:

PF-23. Solid waste collection, handling, recycling, composting, recovery, transfer and disposal fees shall recover all capital, operating, facility closure and maintenance costs.

PF-24. Solid waste disposal fees and rate structures shall reflect current market rates and provide incentives for recovery.

CORDOVA COMMUNITY PLAN

The Cordova Community Plan contains the following policy related to the provision of solid waste services:

PS-4. Provide and maintain a solid waste collection and disposal service for all areas of the community, while reducing the amount of solid waste generated within the community area through reduction and recycling

MATHER FIELD SPECIFIC PLAN AND SPECIAL PLANNING AREA

There are no specific policies related to waste in the Mather Field Specific Plan or Special Planning Area Ordinance.

SOLID WASTE ADVISORY COMMITTEE

The Solid Waste Advisory Committee (SWAC) is an advisory panel consisting of appointed representative from each jurisdiction in Sacramento County. The SWAC is the State-mandated Local Task Force (as mandated by the California Public Resources Code Section 40950), which coordinates waste management and recycling efforts throughout the County. The SWAC advises the County Board of Supervisors, the city councils of the cities within the County, and the Sacramento Regional County Solid Waste Authority (SWA) on all matters relating to the County of Sacramento Integrated Waste Management Plan and all matters relating to integrated waste management, including public education; source reduction; recycling; composting; transformation; materials recovery/resource recovery and marketing; and the collection, transfer, processing, and disposal of refuse and recycling.

SACRAMENTO COUNTY INTEGRATED WASTE MANAGEMENT PLAN

The County of Sacramento adopted the Sacramento County Integrated Waste Management Plan in March 1996, and it was approved by CalRecycle in May 1998. The plan was re-approved as part of the mandatory 5-year review process in March of 2009. This plan consists of the following:

- Siting Element (entire county: cities and unincorporated areas)
- Summary Plan (entire county: cities and unincorporated areas)
- Source Reduction & Recycling Elements (by City, County, or Regional Agency)
- Household Hazardous Waste Elements (by City, County, or Regional Agency)
- Non-disposal Facility Elements (by City, County, or Regional Agency)

These documents are the main sources and references for solid waste facility planning in Sacramento County. The Siting Element and Summary Plan are prepared and administered by the County of Sacramento, Department of Waste Management & Recycling. The remaining documents are prepared and administered by each individual jurisdiction or regional agency.

SACRAMENTO REGIONAL SOLID WASTE AUTHORITY (SWA)

The Sacramento Regional Solid Waste Authority (SWA) is a joint powers authority of Sacramento County and the City of Sacramento. SWA was formed in December 1992 to assume the responsibility for solid waste, recycling, and disposal needs for businesses and apartment complexes in the Sacramento area. SWA regulates commercial solid waste collection by franchised haulers and offers recycling services to multi-family dwelling units. SWA is governed by a Board of Directors consisting of elected officials from the City of Sacramento and the unincorporated area of Sacramento County.

The SWA has adopted three recycling ordinances that target three distinct waste streams: (1) The Business Recycling Ordinance, adopted in 2007 for commercial generators who subscribe to 4 cubic yards or more of refuse service per week; (2) The Certification of C&D [Construction and Demolition] Debris Sorting Facilities Ordinance, adopted in 2008, that creates a program for mixed C&D facilities that dovetails with both City and County C&D Ordinances for builders; and (3) The Multifamily Recycling Ordinance, adopted in 2009, that requires owners of multifamily properties with over 5 units to subscribe to a recycling service for their tenants.

LOCAL ENFORCEMENT AGENCY

Local enforcement agencies (LEAs) have the primary responsibility for ensuring the correct operation and closure of solid waste facilities in the state. They also have responsibilities for guaranteeing the proper storage and transportation of solid wastes. The Sacramento County Environmental Management Department (EMD) is authorized as the LEA under Division 30 of the Public Resources Code and Title 14 of the California Code of Regulations (CCR).

SIGNIFICANCE CRITERIA

The criteria used to evaluate the significance of public utilities impacts resulting from the Mather South Project were developed consistent with Appendix G of the CEQA Guidelines and professional standards. Impacts of the project on public utilities were considered significant if implementing the project would:

1. Result in inadequate wastewater treatment and disposal facilities for full buildout of the project?
2. Result in service by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs;
3. Result in non-compliance with federal, state, and local statutes and regulations related to solid waste.
4. Require the construction of new or the expansion of existing utility facilities that could potentially cause significant construction-related environmental effects.

ISSUES NOT DISCUSSED FURTHER

All issues have been evaluated below.

IMPACTS AND ANALYSIS

2016 MATHER FIELD PROJECT EIR DETERMINATION

The Mather Field Project EIR evaluated impacts related to public utilities from implementation of the Mather Field Project which consisted of a realignment of Zinfandel Drive and trunk extension, creation of the Mather Preserve and the establishment of an Urban Development Area designation for the Mather South Plan Area.

The EIR concluded that the trunk extension along Zinfandel Drive would provide capacity to build out the Plan Area and the entire shed, which generally includes the southeast portion of Mather Field north of Kiefer Boulevard, east of Zinfandel Drive, south of the Mather Airport runway and the existing capped landfill at the north east corner of the project area and west of the Folsom South Canal. Impacts were determined to be less than significant and the discussion of impacts can be found on pages 11-27 through 11-31 of the Mather Field Project EIR and is hereby incorporated by reference.

The EIR also concluded that Kiefer Landfill has the capacity to meet demand until 2035 or later and impacts would be less than significant. The discussion is located on page 11-33 of the Mather Field Project EIR and is hereby incorporated by reference.

MATHER SOUTH PROJECT IMPACTS DETERMINATION

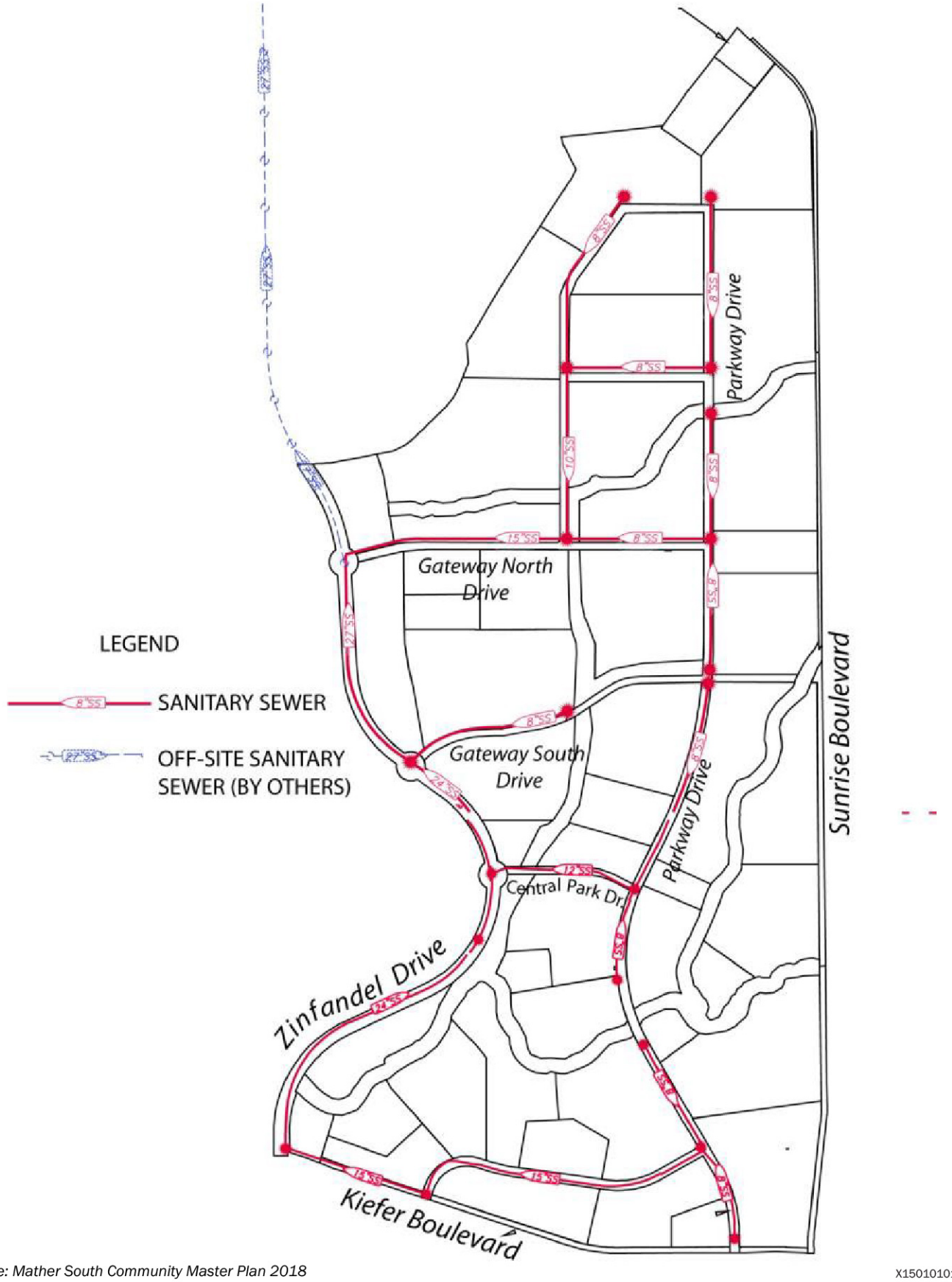
IMPACT: WASTEWATER TREATMENT AND DISPOSAL

As previously discussed, the planned sewer line extension along Zinfandel Drive would bring sewer service to the Mather South Plan Area (Plate PU-1). The onsite sewer system would connect to the approved sewer lines within Zinfandel Drive and extend these lines to Kiefer Boulevard. The backbone collection system within the Plan Area would include the construction of 8-inch, 10-inch, 12-inch, and 15-inch sanitary sewer collection lines within proposed street right-of-way (refer to Plate PU-2). No offsite collection lines are proposed.

As previously discussed above, SRWTP is permitted to treat an ADWF of 181 mgd and a daily peak wet weather flow of 392 mgd; SRWTP currently receives and treats approximately 141 mgd (Sacramento County 2010). Sacramento County estimates 2.64 people per single-family home, which would result in 9,298 people based on the 3,522 new dwelling units proposed. Based on 132.4 gpd per capita, the project would generate 1.23 mgd that would need to be accommodated by the SRWTP. This would increase the existing treatment plant flows from 141 mgd to 142.3 mgd, which is well within the SRWTP's existing 181 mgd capacity. Additionally, the EchoWater Project will be completed by 2023 which will provide additional treatment capacity.

In January 2010, a sewer study was prepared by Wood Rodgers for the Mather South Project and Zinfandel Drive Extension and was amended in December. The study area included 2,323 acres consisting of the area south of the City of Rancho Cordova city line, west of the Folsom South Canal, north of Kiefer Boulevard, and east of Mather Airport and Independence at Mather. In 2013 an amendment to the sewer study was prepared to update information for the revised development plans within the Mather Field Project area. The Sewer Study and amendment found that the sanitary sewer infrastructure proposed to serve the study area would adequately serve the proposed development at ultimate build out within this area. This Sewer Study was approved in February 2010 and the Amendment was approved in December 2013 (Wood Rodgers 2013).

The study and amendment were both prepared and approved based on a previously proposed land use plan for the project. Subsequent to the approval of the sewer study and its amendment, the Mather South Project land use plan was revised based on a public stakeholder process. The previously proposed university and regional sports complex have been eliminated from the land use plan. However, because there have been no increases to the ultimate buildout demands, nor any changes to the proposal of the sewer along Zinfandel Drive, SASD is not requiring an amendment to the study at this time. However, a detailed sewer study for the Plan Area would be necessary when a tentative map application is submitted for the project; this would be a condition of approval.



Source: Mather South Community Master Plan 2018

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Plate PU-2: Mather South Proposed Backbone Sewer Collection System

Given that the estimated wastewater generated by the project would not cause AWDF to exceed 181 mgd, and that a detailed sewer study for the Plan Area would be developed, impacts to wastewater treatment would be **less than significant**.

MITIGATION MEASURES:

None.

IMPACT: SOLID WASTE SERVICES AND CAPACITY

The Mather South Project would allow for the construction of 3,522 residential units, approximately 800,000 square feet of commercial and office uses, and two elementary schools. Development of the project would result in an increased demand for solid waste services.

Based on 2010 US Census data, the average household size in Sacramento County is 2.64 people per household, so buildout of the project would result in approximately 9,298 new residents. Average solid waste generation per capita in California is 1.06 tons per year. This results in an estimated annual generation of 9,855 tons per year of additional waste upon buildout of the project.

The Kiefer landfill facility area is 660 acres in size and received approximately 982,000 tons of waste in 2017, or an average daily disposal of approximately 2,700 tons per day. The permitted remaining landfill capacity is approximately 96 million cubic yards, enough to meet the region's disposal needs for 67 years at current rates of disposal. Therefore, the project would not be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs nor would the project be in non-compliance with federal, state, and local statutes and regulations related to solid waste (DWMR, pers. comm. 2018). CalRecycle's website indicates that the landfill's permitted capacity is approximately 117 million cubic yards and has a remaining capacity of approximately 113 million cubic yards. Therefore, the project would not be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs nor would the project be in non-compliance with federal, state, and local statutes and regulations related to solid waste. Therefore, the impact would be **less than significant**.

MITIGATION MEASURES

None required.

17 TRAFFIC AND CIRCULATION

INTRODUCTION

The Mather Field Project EIR (2016) evaluated the Mather South Project at the plan-level and that analysis is hereby incorporated by reference in this EIR and is summarized below where appropriate.

This section is based on information presented in the *Mather South Specific Plan Amendment Transportation Impact Report* (Transportation Report) prepared by DKS Associates in 2018. The full Transportation Report is included as Appendix TR-1 and provides additional detailed information related to the transportation and circulation analysis. The transportation analysis focuses on the project traffic study area which is defined in the "Environmental Setting" below.

The analysis includes consideration of motorized vehicle traffic impacts on roadway capacity and functionality, freeway facility operations, potential impacts to transit, bicycle, and pedestrian facilities, and impacts related to emergency access and hazards related to design. The following scenarios within the Transportation Report were used to support the transportation analysis in this EIR:

- **Existing Conditions**: represents the baseline condition, against which Mather South Project impacts are measured. The existing conditions represent conditions in spring 2013.
- **Existing Plus Mather South Project**: analyzes the transportation and circulation effects associated with implementation and buildout of the Mather South Project. This scenario reflects buildout of Mather South added directly to existing (spring 2013) conditions to isolate the effects of the Mather South Project against the existing baseline. Therefore, this scenario does not account for the incremental nature of project implementation (i.e., buildout of the Mather South Project would occur over time) or changes that would occur outside the project in the study area (i.e., installation of programmed offsite transportation facilities or implementation of other development projects).

During the Notice of Preparation (NOP) scoping process, commenters raised concerns about vehicle miles traveled (VMT) analysis, traffic management plan, naming of Zinfandel Drive extension, traffic calming along Mather Preserve, traffic evaluation of school sites, and provision of frontage along parks. A copy of the NOP and comment letters received in response to the NOP are included in Appendix PD-2 of this Mather South Project Draft EIR.

JACKSON CORRIDOR PROJECTS

The Transportation Report discusses existing and cumulative transportation and circulation conditions associated with the implementation of the Mather South Project. In addition, the Transportation Report discusses the combined effects of implementing the

following four master plans in the Jackson Corridor, collectively referred to as the Jackson Corridor Projects:

- West Jackson Highway Master Plan (West Jackson),
- Jackson Township Specific Plan (Jackson Township),
- NewBridge Specific Plan (NewBridge), and
- Mather South Community Master Plan (Mather South Project).

The Jackson Corridor Projects are located adjacent to each other along the Jackson Road corridor. Because of this proximity and the relatively concurrent entitlement process, County staff and the applicants collaborated to develop a single traffic analysis that evaluates the transportation-related impacts of each individual project as stand-alone projects as well as the transportation impacts of all four projects combined. This analysis is referred to as the Joint Transportation Impact Study (Joint TIS). Substantial coordination with the applicants and adjacent jurisdictions, including the cities of Sacramento, Rancho Cordova, Elk Grove, and Folsom in addition to the California Department of Transportation (Caltrans) and the Capital Southeast Connector Joint Powers Authority, led to agreement on the area to be studied for transportation impacts. The resulting study area includes 261 roadway segments and 164 intersections within an area bounded by U.S. Highway 50 (US 50) on the north, Calvine Road on the south, Power Inn Road on the west and Grant Line Road on the east. The Joint TIS addresses the combined potential effects of the Jackson Corridor Projects on existing and cumulative transportation and circulation conditions.

This joint traffic analysis allows the County to develop a common baseline for existing conditions between all four Jackson Corridor Projects, provides decisionmakers a better understanding of the travel demand associated with all Jackson Corridor Projects combined, and provide the specific number of vehicles each project contributes towards the total traffic flow as a fair share percentage on each study roadway segment and intersection. Although a joint traffic analysis was conducted, a project-specific report was prepared for each master plan project to identify project-specific impacts and mitigation measures.

The Joint TIS began in mid-2013, and traffic counts were collected to create the baseline for Average Daily Trips (ADT) on the study area roadways. The traffic analysis was completed for each project in February 2015. Subsequently, the Mather South Project and West Jackson project land use plans underwent revisions and Revised Notices of Preparation were issued in spring of 2017. The previous transportation analyses have been revised for West Jackson and the Mather South Project to reflect the changes in the proposed land use plans.

In addition, the Sacramento County Department of Transportation (SacDOT) collected newer traffic count data from 2016/2017 for 31 of the roadway segments in the study area. The data indicated that ADT increased on 29 of the 31 segments and decreased on two segments. The County determined that these changes are likely due to ongoing

development within the large study area, which includes all of the Vineyard community as well as Rancho Cordova.

After reviewing the more recently collected ADT data, the following conclusions were reached:

1. Using the 2013 traffic counts as the baseline provides the County with a consistent data set and approach for the Jackson Corridor Projects for all intersections and roadway segments studied.

2. The Jackson Corridor Transportation Mitigation Strategy includes use of the Dynamic Implementation Tool (see the *Impacts and Analysis* section below), a mitigation tool that will monitor traffic hot spots, assign mitigation projects within the project study, and provide the County greater flexibility in defining roadway improvements as development progresses over a large geographic area.

ENVIRONMENTAL SETTING

This section describes existing regional and local environmental conditions relevant to transportation and circulation.

PROJECT STUDY AREA

As illustrated in Plate TR-1, the Mather South Project is located in unincorporated Sacramento County, generally east of the City of Sacramento, southeast of the City of Rancho Cordova, and south of Mather Airport. It is bounded to the south by Kiefer Boulevard, to the west by Zinfandel Drive, and to the east by the Folsom South Canal (which runs parallel to the west side of Sunrise Boulevard). The northern boundary is south of Douglas Road.

For transportation analysis purposes, a set of existing, proposed, and future intersections, roadway segments, and freeway facilities were selected based upon the project's expected travel characteristics, including number of vehicle trips, the directionality of those vehicle trips, and primary travel routes to/from the study area. The SacDOT, Caltrans, City of Sacramento, City of Rancho Cordova, City of Elk Grove, City of Folsom, and Capital Southeast Corridor Joint Powers Authority were consulted during this process.

Plates TR-2 through TR-4 illustrate the project traffic study area, which was developed and agreed upon by all of the aforementioned jurisdictions and agencies.

EXISTING ROADWAY NETWORK

Plate TR-5 illustrates the existing roadway network and number of lanes along each roadway segment.

Regional Access

The freeway facilities providing regional automobile access to the Mather South Plan Area are described below.

U.S. Highway 50 (US 50) is an east-west freeway that extends from the Interstate 80 (I-80) junction in West Sacramento to Canal Street in the City of Placerville, where it continues as a highway across the Sierra Nevada to South Lake Tahoe and Nevada. Primary access to US 50 occurs via a series of interchanges, including (from west to east) Howe Avenue, Watt Avenue, Bradshaw Road, Mather Field Road, and Sunrise Boulevard. To the west, US 50 provides access to Downtown Sacramento, State Route (SR) 99, I-5, and I-80. To the east, US 50 provides access to eastern Sacramento County, El Dorado County, and the cities of Rancho Cordova and Folsom.

State Route 16 (SR 16) is a Caltrans facility. In the vicinity of the project, SR 16 is called Jackson Road, which is south of the Mather South Plan Area. In Sacramento County, SR 16 begins at the US 50 junction at Howe Avenue as a six-lane conventional highway. The portion of SR 16 from the Folsom Boulevard/Jackson Road intersection to the Amador County line is known locally as Jackson Road. The route passes through urban, light industrial, and rural areas that include commercial businesses, aggregate mining extraction, apartment complexes, mobile home parks, private residences, horse/cattle ranches, and farms. SR 16 intersects several major Sacramento County arterial intersections such as Bradshaw Road, Sunrise Boulevard, and Grant Line Road.

The roadway generally travels from west-northwest to east-southeast from Folsom Boulevard into Amador County. It is generally a two-lane roadway with some widening at intersections. To the west, SR 16 continues to US 50 via Folsom Boulevard and Howe Avenue in the City of Sacramento.

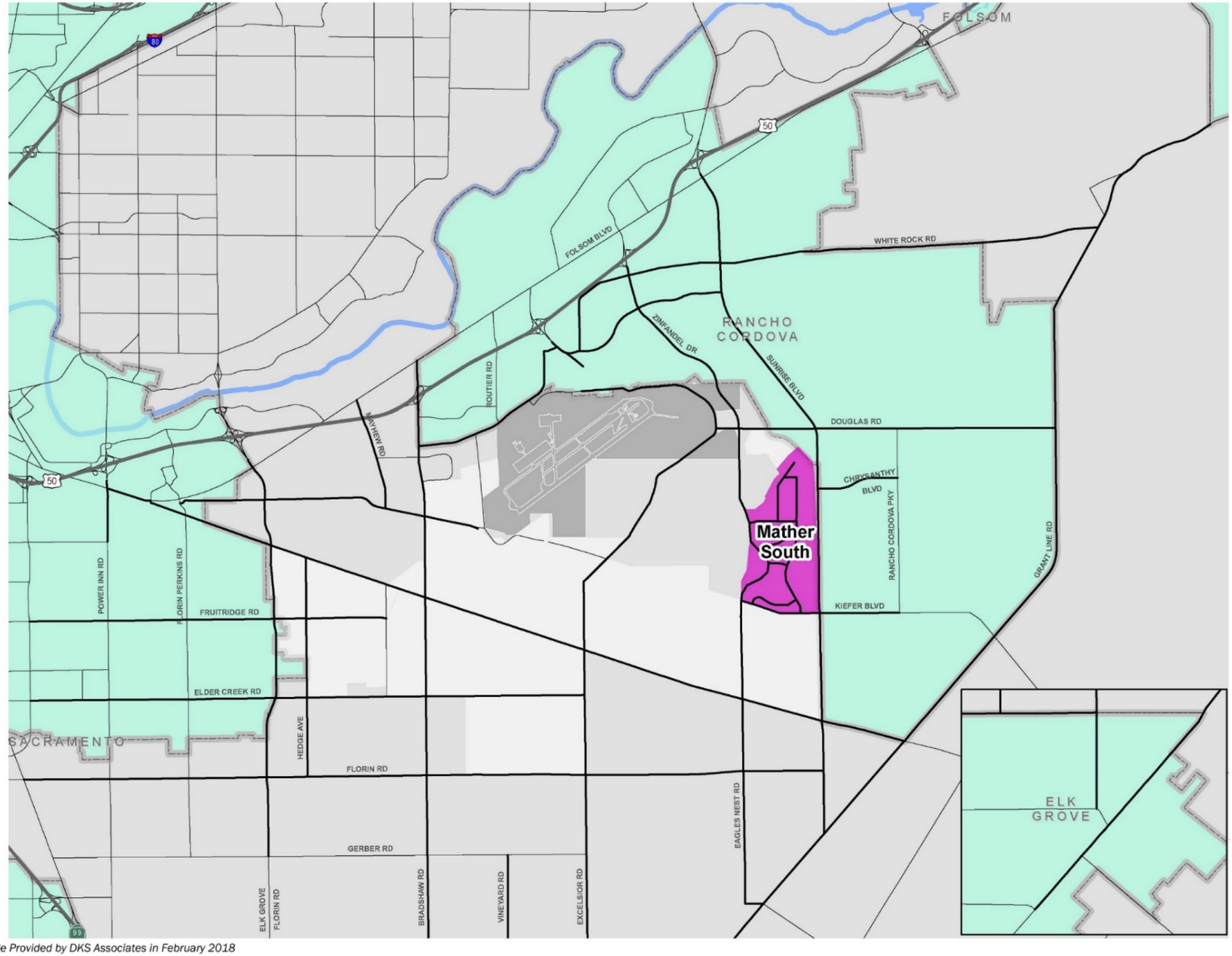
Local Access

Direct access to the Plan Area is provided via roadways which include Eagles Nest Road, Kiefer Boulevard, and Zinfandel Drive. These roadways are described below.

Eagles Nest Road is a north-south roadway that begins at Kiefer Boulevard at the southwest corner of the Mather South Plan Area. North of Kiefer Boulevard, the roadway is named Zinfandel Drive. Eagles Nest Road extends to the south to Grant Line Road. Eagles Nest Road is a two-lane roadway.

Kiefer Boulevard is an east-west roadway that runs along the southern boundary of the Mather South Plan Area. The roadway consists of two segments, divided by Mather Airport. The western segment extends from Florin-Perkins Road in the City of Sacramento through the Rosemont community to Happy Lane. This segment has between two and four through lanes, depending on the segment. East of Mather Airport, the roadway begins at Eagles Nest Road (at the southwest corner of the Mather South Plan Area) and continues east to Jackson Road as a two-lane roadway.

Zinfandel Drive is a north-south roadway that is the western boundary of the Mather South Plan Area. Adjacent to the Mather South Plan Area, the roadway is in poor condition and generally not utilized for through traffic. To the north, the roadway continues through the City of Rancho Cordova, providing direct access to US 50. The roadway extends to Sunrise Boulevard. Zinfandel Drive accommodates two to seven through lanes.

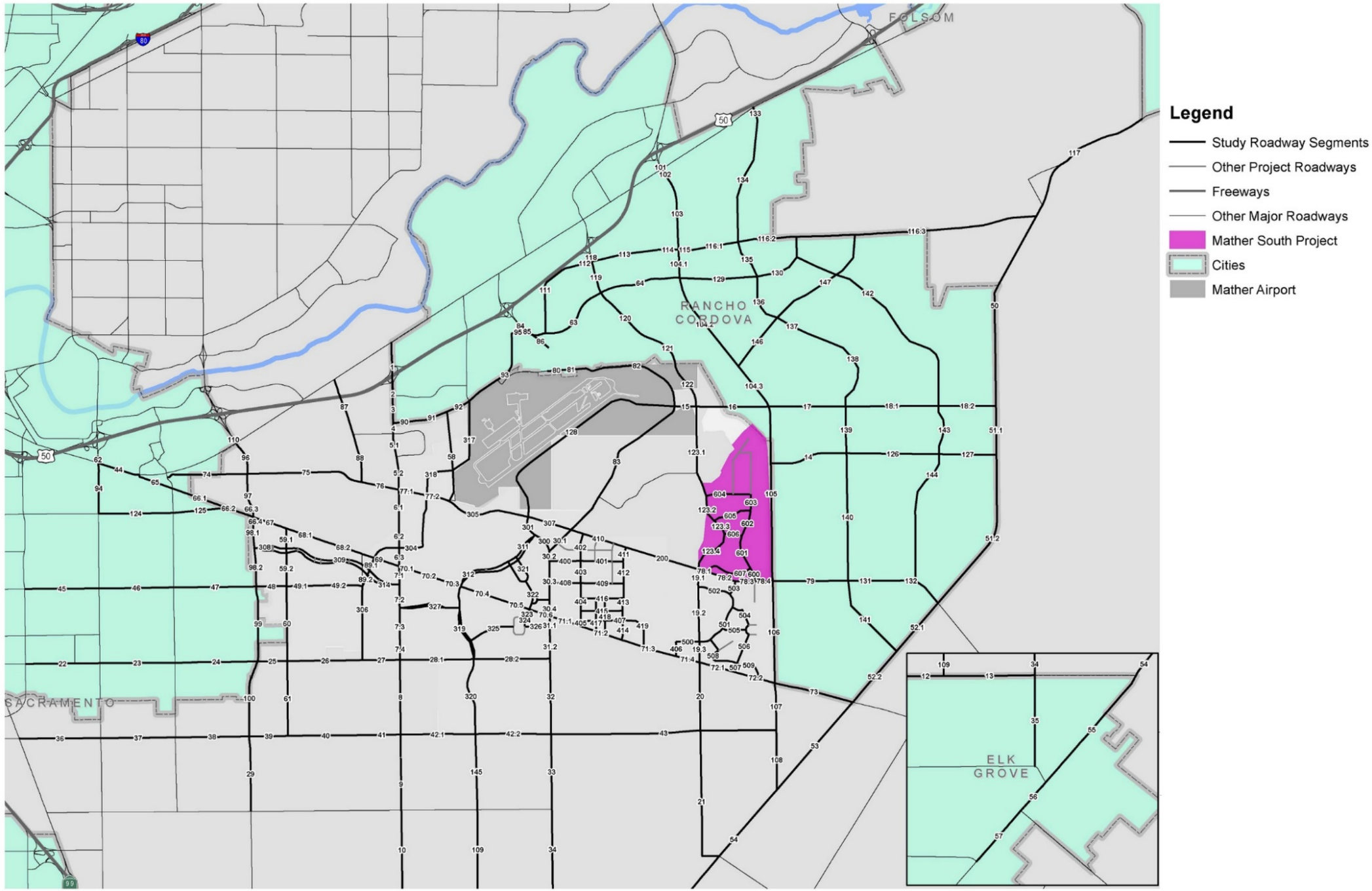


Source: Image Provided by DKS Associates in February 2018

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Plate TR-1: Project Location

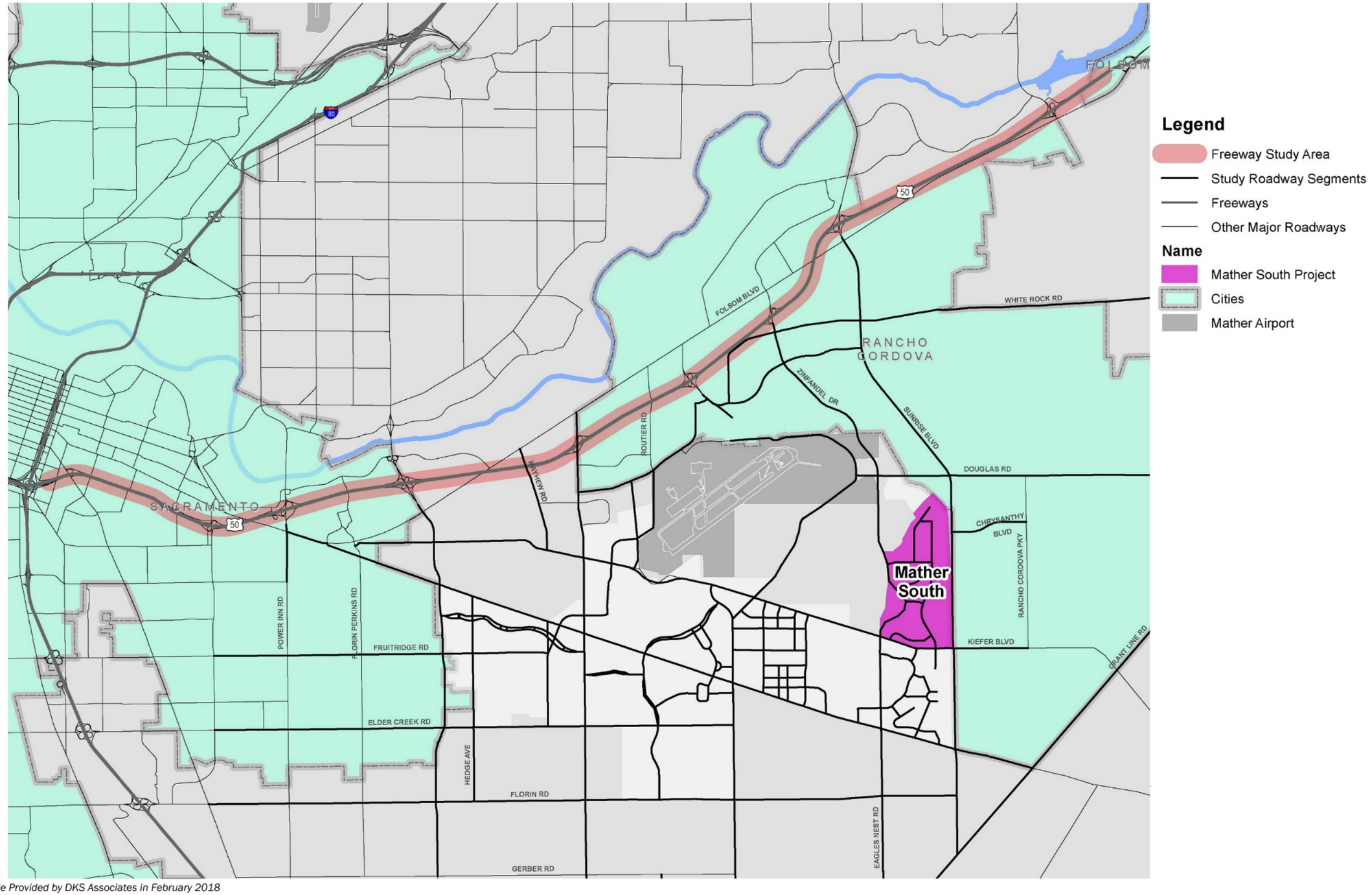
ASCENT ENVIRONMENTAL



Source: Image Provided by DKS Associates in February 2018

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Plate TR-2: Study Area Roadway Segments

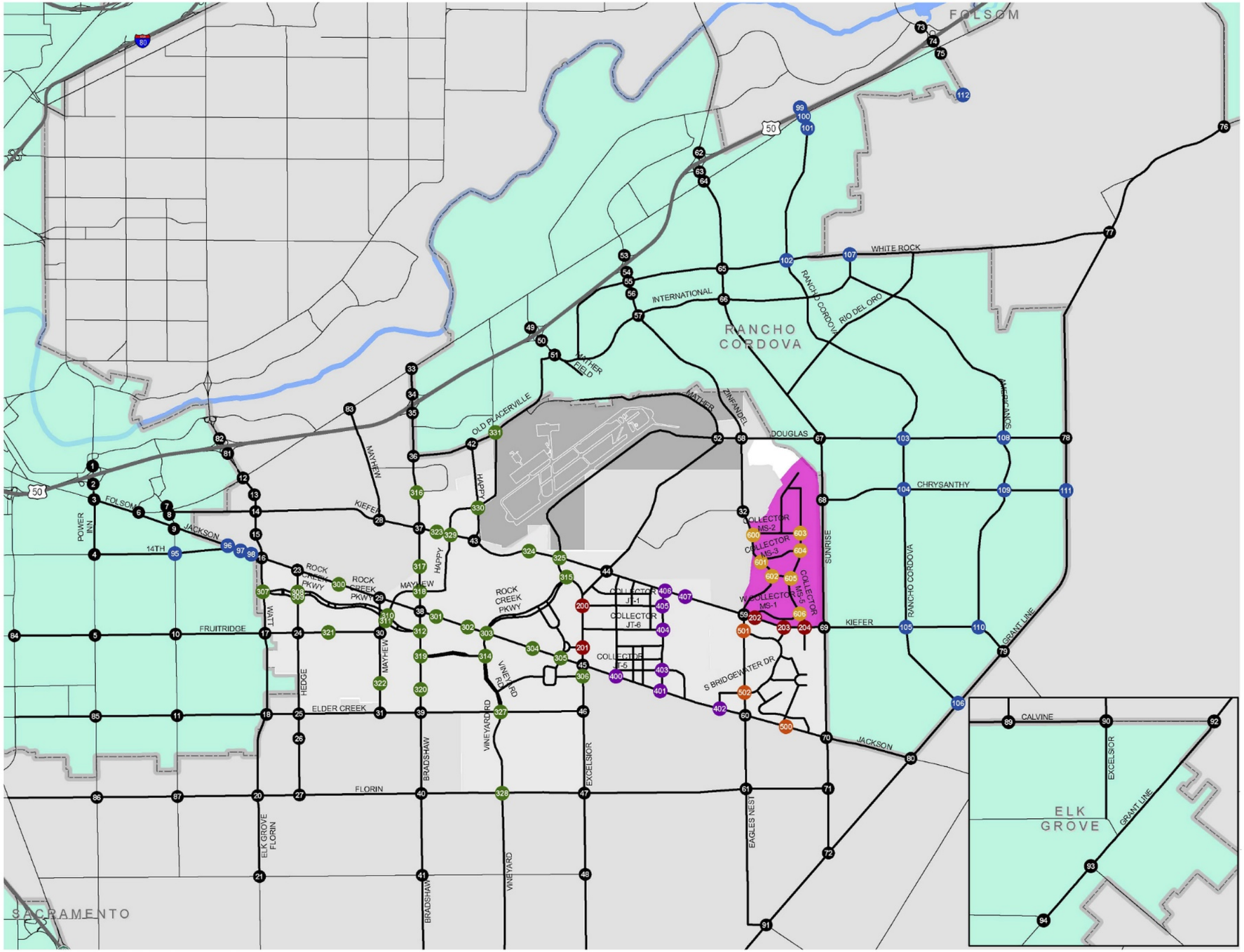


Source: Image Provided by DKS Associates in February 2018

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Plate TR-3: Freeway Study Area

ASCENT ENVIRONMENTAL

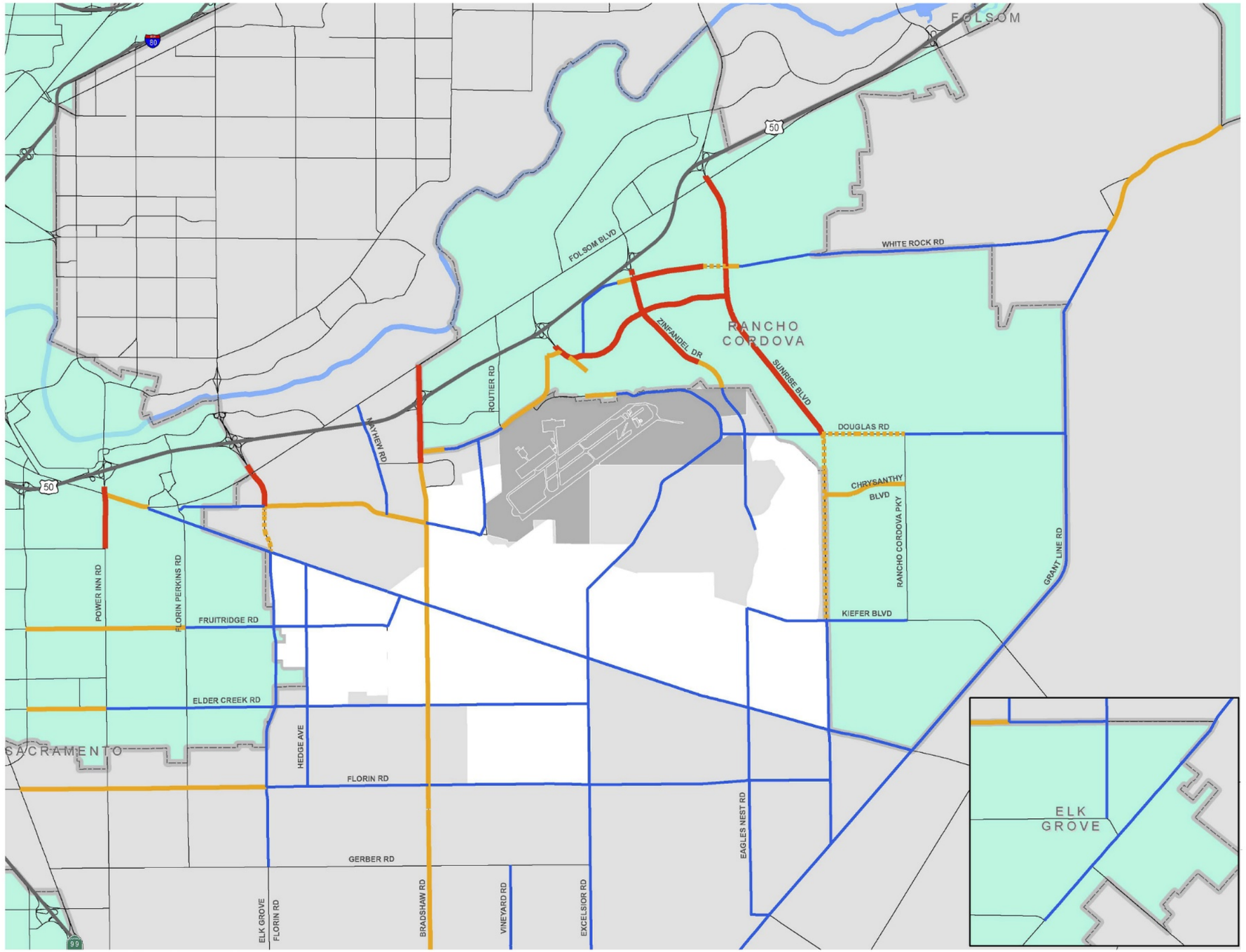


Source: Image Provided by DKS Associates in February 2018

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Plate TR-4: Study Area Intersections

ASCENT ENVIRONMENTAL



Source: Image Provided by DKS Associates in February 2018

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Plate TR-5: Existing Roadway Network

ASCENT ENVIRONMENTAL

Transit System

The Sacramento Regional Transit District (SacRT) operates 70 bus routes and 43 miles of light rail covering a 400 square-mile service area. Buses and light rail run 365 days a year using 97 light rail vehicles, 205 buses (with an additional 30 buses in reserve) powered by compressed natural gas and 23 shuttle vans. Buses operate daily from 5:00 a.m. to 11:00 p.m. every 12 to 60 minutes, depending on the route. Light rail trains begin operation at 4:00 a.m. with service every 15 minutes during the day and every 30 minutes in the evening and on weekends. Blue Line and Gold Line trains operate until 12:30 a.m. and the Gold Line to Folsom operates until 7:00 p.m. Green Line trains operate every 30 minutes Monday through Friday.

Passenger amenities include 52 light rail stops or stations, 32 bus and light rail transfer centers and 22 park-and-ride lots. SacRT also serves over 3,100 bus stops throughout Sacramento County. SacRT's entire bus and light rail system is accessible to the disabled community. Paratransit service is also provided in accordance with the Americans with Disabilities Act (ADA). SacRT provides this service through a contract with Paratransit, Inc.

Plate TR-6 illustrates selected SacRT service near the Mather South Plan Area. The SacRT Gold Line light rail service is located parallel to Folsom Boulevard north of the Mather South Plan Area. Nearby stations include (from west to east) Watt/Manlove, Starfire, Tiber, Butterfield, Mather Field / Mills, Zinfandel, Cordova Town Center, and Sunrise. No SacRT bus routes currently provide direct service to the Mather South Plan Area.

Existing Bicycle and Pedestrian System

Plate TR-7 illustrates the Sacramento County Bikeway Master Plan in the vicinity of the Mather South Plan Area, depicting existing and planned bikeways. An existing Class I bikeway runs parallel to the Folsom South Canal. Future Class II Bikeways are planned on Eagles Nest Road, Kiefer Boulevard, and Zinfandel Drive.

The pedestrian sidewalk system is incomplete within the vicinity of the Plan Area. As development around the project site occurs, sidewalks are being installed along many of the roadways in the area. Except for those locations where such improvements have already occurred, pedestrian access in the immediate vicinity of the Plan Area is limited to roadway shoulders, where such shoulders exist.

Existing Traffic Volumes

Peak period (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.) intersection turning movement counts were collected on Tuesday, Wednesday, and Thursday in April and early May of 2013 at intersections within the traffic study area. Daily (24-hour) roadway segment counts were collected on Tuesday, Wednesday, and Thursday in April and early May of 2013 along roadway segments within the traffic study area. Detailed peak hour (a.m. and p.m.) and daily counts are included in the Appendix TR-1 of this EIR.

Peak period traffic volumes on the US 50 freeway system (mainline and ramps) were obtained from the California Freeway Performance Measurement System. Data recorded on April 16 through 18 of 2013, and April 23 through 25 of 2013 were utilized for the freeway analysis contained within the Traffic Report and summarized in this EIR. The traffic volumes are summarized in Appendix TR-1 of this EIR.

TRAFFIC OPERATIONS ANALYSIS

METHODOLOGY

The traffic operations analysis uses level of service (LOS) as the primary measure of performance. LOS is a qualitative description of traffic flow from the perspective of motorists. The *Highway Capacity Manual* (HCM) defines six levels of service from LOS A representing the least congested traffic conditions, to LOS F representing the most congested traffic conditions. These grades represent the perspective of drivers and are an indication of the comfort and convenience associated with driving, as well as speed, travel time, traffic interruptions, and freedom to maneuver.

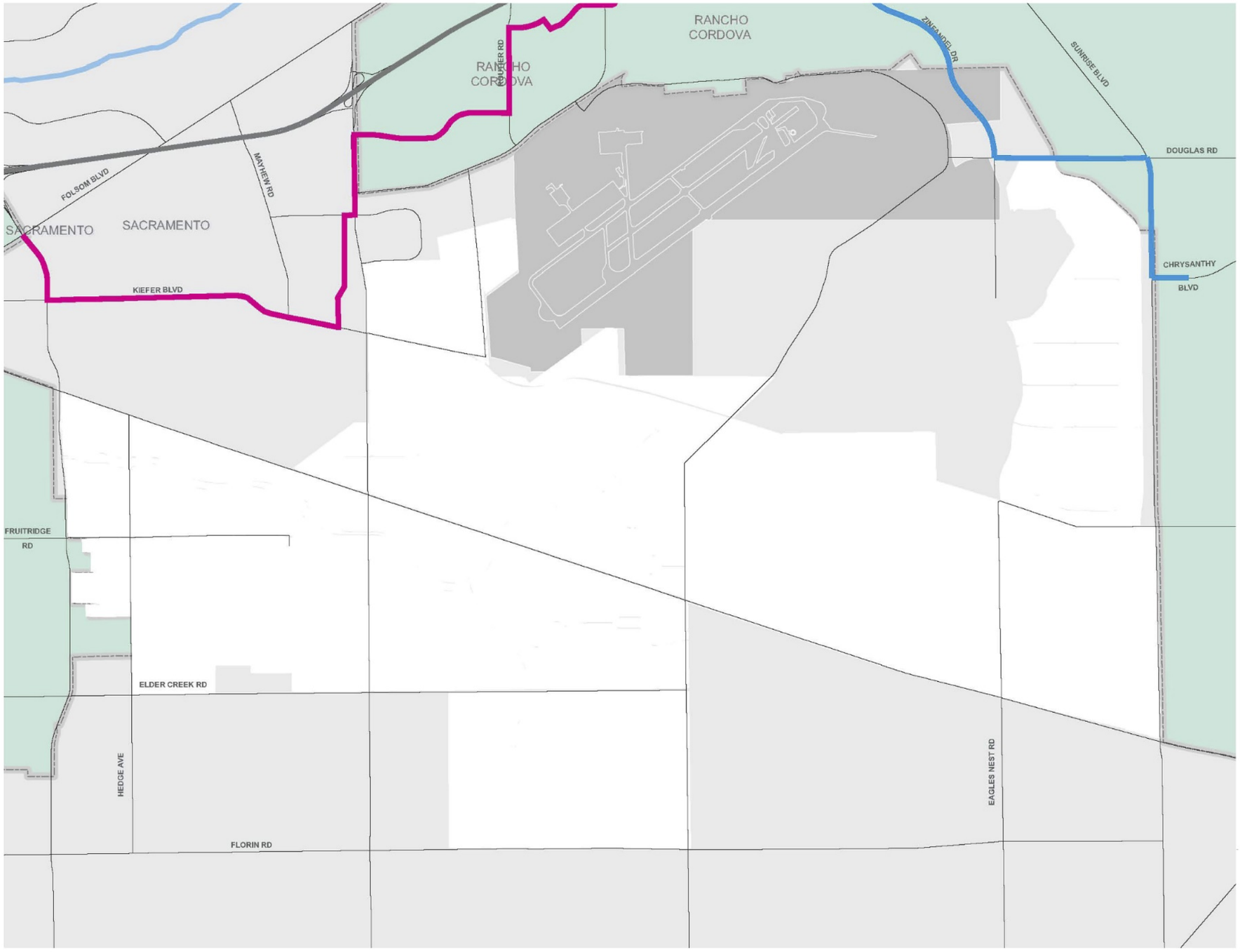
Field reconnaissance was undertaken to ascertain the traffic control and geometry of each of the traffic study area intersections, roadway segments, and freeway elements. Combined with known or projected traffic volumes, these characteristics form the basis for the calculation of LOS detailed within the Traffic Report and are summarized in this EIR.

ROADWAY SEGMENT OPERATIONS

LOS analysis was conducted for roadway segments in the traffic study area based upon daily traffic volumes, and roadway geometry and characteristics. Study area roadways were stratified into “capacity class” categories for LOS determination based on Sacramento County, City of Sacramento, and Capital SouthEast Connector Joint Powers Authority thresholds, as shown in Tables TR-1, TR-2, and TR-3. The Sacramento County roadway segment LOS thresholds were applied to segments in the City of Rancho Cordova and City of Elk Grove, as these jurisdictions utilize the same roadway segment LOS thresholds.

The capacity class categories are based upon the nature of traffic flow along the facility, including number of interruptions due to intersection control, driveways, and local streets. For each capacity class, relationships were developed between daily traffic volumes and roadway LOS.

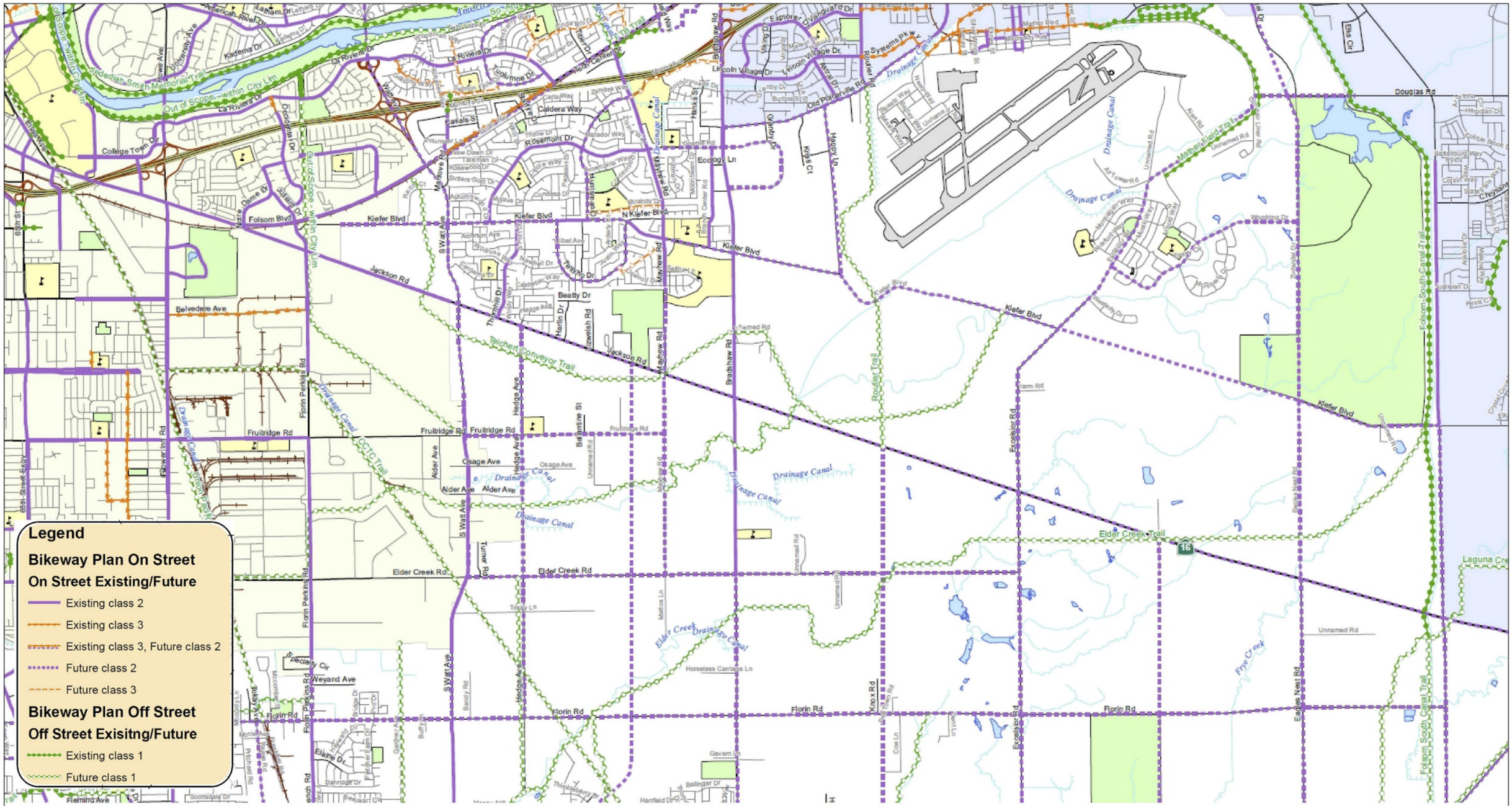
Tables TR-1, TR-2, and TR-3 summarize the maximum daily traffic volumes associated with each LOS designation and capacity class combination. Although the segment-based LOS calculations are based upon daily traffic volumes, the resultant LOS is representative of peak hour conditions. The daily roadway segment capacity methodology takes into account typical peak hour volume profiles, as well as the effects of signalized intersections in reducing the roadway’s carrying capacity.



Source: Image Provided by DKS Associates in February 2018

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Plate TR-6: Existing Transit Network



Source: Image Provided by DKS Associates in February 2018

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Plate TR-7: Existing Bicycle Network

ASCENT ENVIRONMENTAL

Table TR-1: Daily Volume Threshold for Roadway Segments (Sacramento County)

Roadway Capacity Class	Number of Lanes	Daily Volume Threshold (LOS)				
		LOS A	LOS B	LOS C	LOS D	LOS E
Residential	2	600	1,200	2,00	3,000	4,500
Residential Collector with Frontage	2	1,600	3,200	4,800	6,400	8,000
Residential Collector without Frontage	2	6,000	7,000	8,000	9,000	10,000
Arterial, Low Access Control	2	9,000	10,500	12,000	13,500	15,000
	4	18,000	21,000	24,000	27,000	30,000
	6	27,000	31,500	36,000	40,500	45,000
Arterial, Moderate Access Control	2	10,800	12,600	14,400	16,200	18,000
	4	24,000	28,000	32,000	36,000	40,000
	6	36,000	43,000	48,000	54,000	60,000
Arterial, High Access Control	2	12,000	14,000	16,000	18,000	20,000
	4	24,000	28,000	32,000	36,000	40,000
	6	36,000	43,000	48,000	54,000	60,000
Rural, 2-lane Highway	2	2,400	4,800	7,900	13,500	22,900
Rural, 2-lane Road, 24'-36' of pavement, Paved Shoulders	2	2,200	4,300	7,100	12,200	20,000
Rural, 2-lane Road, 24'-36' of pavement, No Shoulders	2	1,800	3,600	5,900	10,100	17,000

Roadway Capacity Class	Stops per Mile	Driveways	Speed
Arterial, Low Access Control	4 +	Frequent	25 – 35 mph
Arterial, Moderate Access Control	2 – 4	Limited	35 – 45 mph
Arterial, High Access Control	1 - 2	None	45 – 55 mph

Note: LOS = level of service

Source: DKS Associates 2018

Table TR-2: Daily Volume Threshold for Roadway Segments (City of Sacramento)

Roadway Capacity Class	Number of Lanes	Daily Volume Threshold (LOS)				
		LOS A	LOS B	LOS C	LOS D	LOS E
Arterial, Low Access Control	2	9,000	10,500	12,000	13,500	15,000
	4	18,000	21,000	24,000	27,000	30,000
	6	27,000	31,500	36,000	40,500	45,000
Arterial, Moderate Access Control	2	10,800	12,600	14,400	16,200	18,000
	4	21,600	25,200	28,800	32,400	36,000
	6	32,400	37,800	43,200	48,600	54,000

Roadway Capacity Class	Number of Lanes	Daily Volume Threshold (LOS)				
		LOS A	LOS B	LOS C	LOS D	LOS E
Arterial, High Access Control	2	12,000	14,000	16,000	18,000	20,000
	4	24,000	28,000	32,000	36,000	40,000
	6	36,000	43,000	48,000	54,000	60,000
Collector, minor	2	5,250	6,125	7,000	7,875	8,750
Residential	2	3,000	3,500	4,000	4,500	5,000
Roadway Capacity Class	Stops per Mile		Driveways		Speed	
Arterial, Low Access Control	4 +		Frequent		25 – 35 mph	
Arterial, Moderate Access Control	2 – 4		Limited		35 – 45 mph	
Arterial, High Access Control	1 - 2		None		45 – 55 mph	

Note: LOS = level of service
Source: DKS Associates 2018

Table TR-3: Daily Volume Threshold for Roadway Segments (Connector JPA)

Roadway Capacity Class	Number of Lanes	Daily Volume Threshold (LOS)				
		LOS A	LOS B	LOS C	LOS D	LOS E
Expressway (Connector)	2	43,200	50,400	57,600	64,800	72,000
	4+2 HOV	64,800	75,600	86,400	97,200	108,000

Note: LOS=level of service, HOV = high-occupancy vehicle
Source: DKS Associates 2018

Intersection Operations

For signalized and unsignalized intersections, operational analysis was conducted using the Transportation Research Board's HCM 2000 and HCM 2010 methodology. The HCM 2010 methodology was used in all locations except where characteristics of a signalized intersection deemed that methodology inappropriate. These locations include intersections with unconventional signal phasing, and locations adjacent to light rail tracks where additional delay occurs due to light rail operations. In the selected locations, the HCM 2000 methodology was employed.

The HCM methodology calculates an average control delay per vehicle for each movement at an intersection and assigns a LOS designation based upon the average delay per vehicle. Table TR-4 presents the LOS criteria for signalized and unsignalized intersections based on the HCM methodology.

Table TR-4: Level of Service Criteria (Intersections)

Level of Service (LOS)	Total Delay Per Vehicle (seconds)	
	Signalized Intersections	Unsignalized Intersections
A	≤ 10	≤ 10
B	> 10 and ≤ 20	> 10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	< 50
Source: DKS Associates 2018		

Additionally, at two-way stop unsignalized intersections, Sacramento County determines conformity with the LOS policy on an approach / movement basis, while the City of Sacramento utilizes a calculation of the average intersection LOS (similar to signalized intersections and all-way stop intersections).

Traffic Signal Warrant Analysis

Properly located and operated traffic control signals may provide for the orderly movement of traffic (motor vehicle, pedestrian, and bicycle), increase the traffic-handling capacity of an intersection, and reduce the frequency of certain types of collisions. The Federal Highway Administration and Caltrans have developed traffic signal warrants as a means to define minimum conditions under which the installation of new traffic control signals may be justified. Traffic control signals should not be installed unless one or more of the signal warrants are met. However, the satisfaction of a warrant or multiple warrants is not in itself justification for a signal. Every situation is unique and warrant guidelines must be supplemented by the review of specific site conditions and the application of professional engineering judgment. Installation of a traffic signal should improve the overall operation and/or safety of an intersection, and should be considered only after less restrictive solutions have been considered.

Freeway Analysis

Freeway mainline segments, ramp junctions, and weaving segments were analyzed utilizing methodologies outlined in the HCM 2010. Table TR-5 presents the LOS criteria for the freeway mainline segments, which are divided into basic, merge/diverge, and weaving segments.

Table TR-5: Level of Service Criteria (Freeway Mainline)

Level of Service (LOS)	Maximum Density (Passenger Cars Per Mile Per Lane)		
	Basic	Merge/Diverge Segments	Weaving Segments
A	≤ 11	≤ 10	≤ 10
B	> 11 and ≤ 18	> 10 and ≤ 20	> 10 and ≤ 20
C	> 18 and ≤ 26	> 20 and ≤ 28	> 20 and ≤ 28
D	> 26 and ≤ 35	> 28 and ≤ 35	> 28 and ≤ 35
E	> 35 and ≤ 45	< 35	< 35
F	> 45	Demand Exceeds Capacity	Demand Exceeds Capacity
Source: HCM 2010			

Rural Roadway Functionality Analysis

Of specific concern in the traffic study area is the functionality of substandard rural roadways. The County's current rural roadway standard consists of two 12-foot wide travel lanes and 6-foot wide paved shoulders. Therefore, any rural roadway not fitting this definition can be considered substandard.

Many of the existing rural roadways in the traffic study area have travel lanes as narrow as 10-feet wide with no roadside shoulders. These roadways were constructed many years ago and tended to serve as roadway connections between small towns and communities and to serve as farm to market roadways. While these narrow roadways have adequately served the travel demand of the historical past, they are not intended to serve the greater travel demands that nearby residential and commercial development may result in.

The County expects that the functionality of these roadways will change with nearby development, the increase in population, the introduction of various modes of travel in the study area, and the addition of traffic on these substandard roadways. With these changes in functionality of the roadway comes the possibility of increased interactions between varying modes of travel (i.e., pedestrians, bicyclists, etc.) as well as the increased interaction between a greater number of vehicles on substandard roads.

Based on General Plan Policies CI-1, CI-7, and CI-10 detailed in the Regulatory Setting section of this chapter of the EIR, the County has developed an impact standard and mitigation strategy for these substandard roadways as follows:

> Impacts to substandard rural roadway functionality are considered significant if the Mather South Project would:
>
> - cause the substandard rural roadway to exceed an average daily traffic volume of 6,000 daily vehicles, or

- add 600 or more new daily vehicle trips to a substandard rural roadway that already carries 6,000 or more daily vehicles.

The mitigation of such impacts to rural roadway functionality shall be mitigated by requiring reconstruction of the substandard rural roadway to the County standard of 12-foot vehicle lanes with 6-foot paved shoulders.

EXISTING OPERATING CONDITIONS

Plate TR-8 summarizes existing roadway and intersection operating conditions within the study area.

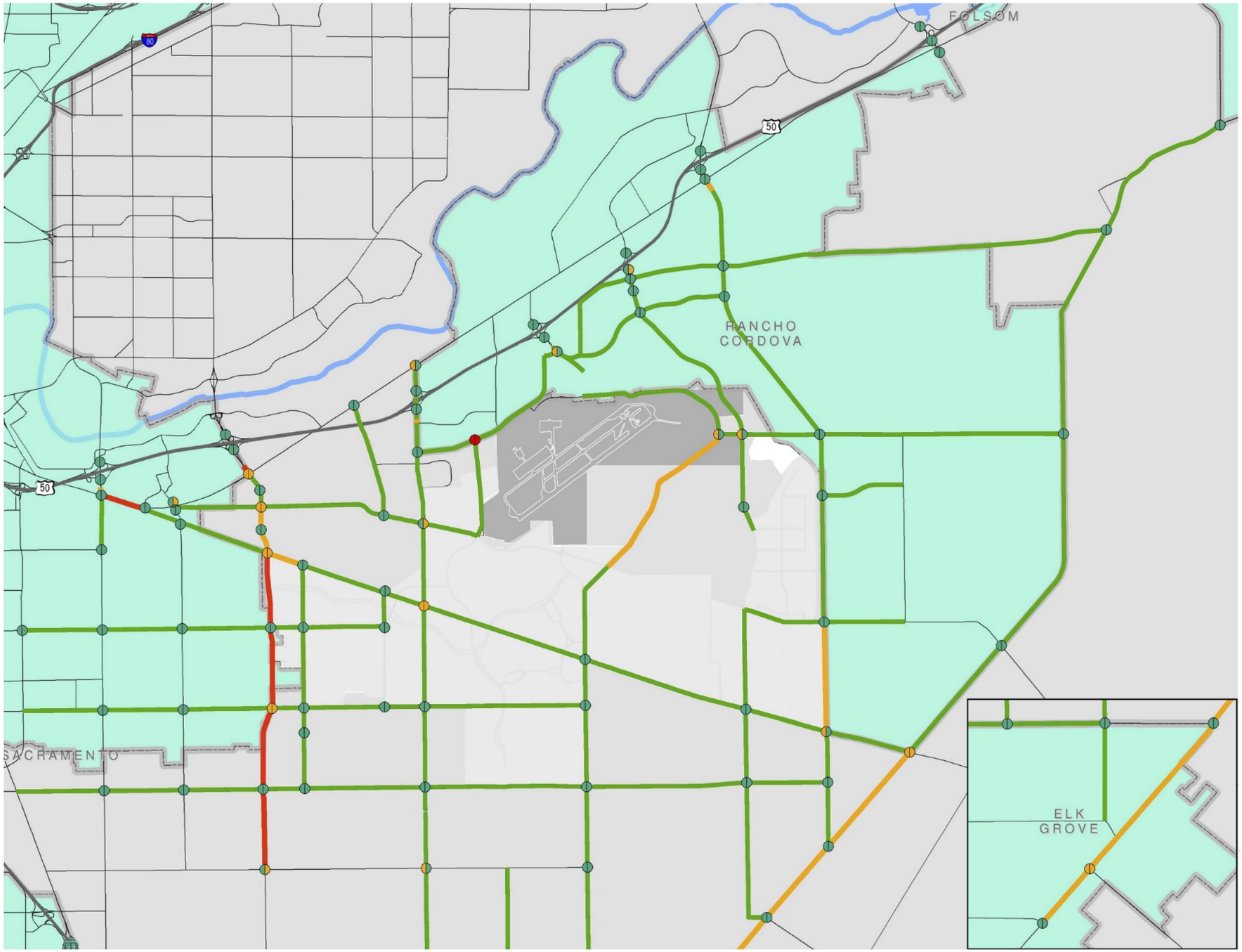
ROADWAY SEGMENT OPERATING CONDITIONS

LOS analysis was conducted for the roadway segments in the study area based on daily traffic volumes and roadway characteristics. Table TR-6 summarizes the roadway LOS, and the performance of the segment compared to the LOS thresholds of the applicable jurisdiction. Detailed roadway segment operating condition calculations and the full list of study area roadway segment operating conditions are included in Appendix TR-1.

As shown in Table TR-6, the following segments do not meet the applicable LOS thresholds:

- Bradshaw Road - US 50 to Lincoln Village Drive,
- Elk Grove Florin Road - Florin Road to Gerber Road,
- Folsom Boulevard - Howe Avenue to Jackson Road,
- Grant Line Road - Calvine Road to Bond Road,
- South Watt Avenue - Jackson Road to Florin Road,
- Sunrise Boulevard - US 50 to Trade Center Drive,
- Sunrise Boulevard - Kiefer Boulevard to Jackson Road, and
- Watt Avenue - US 50 to Folsom Boulevard.

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INTERSECTION LOS

Legend

Intersections (AM Peak Hour)
- LOS A-D
- LOS E
- LOS F

Intersections (PM Peak Hour)
- LOS A-D
- LOS E
- LOS F

Roadway Segments
- LOS A-D
- LOS E
- LOS F
- Cities
- Mather Airport

Source: Image Provided by DKS Associates in February 2018

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Plate TR-8: Existing Roadway Segment and Intersection LOS

ASCENT ENVIRONMENTAL

Table TR-6: Existing Roadway Segments Operating at Deficient Level of Service

ID	Roadway	Segment		Jurisdiction	Governing Jurisdiction/ Area[1]	LOS Policy Criteria	Existing				
		From	To				Travel Lanes	Facility Type[2]	Daily Volume	Volume/ Capacity Ration	LOS
2	Bradshaw Rd	US 50	Lincoln Village Dr	Rancho Cordova/County	Rancho Cordova	D	6	Arterial M	52,590	0.97	**E**
29	Elk Grove-Florin Rd	Florin Rd	Gerber Rd	County	County Urban	E	2	Arterial M	22,960	1.28	**F**
44	Folsom Blvd	Howe Ave	Jackson Rd	City of Sacramento	City Exempt Roadway	E	4	Arterial M	37,516	1.04	**F**
55.1	Grant Line Rd	Calvine Rd	Elk Grove City Limit	Elk Grove/County	Elk Grove	D	2	Rural S	13,140	0.66	**E**
55.2	Grant Line Rd	Elk Grove City Limit	Sheldon Rd	Elk Grove/County	Elk Grove	D	2	Rural S	13,140	0.66	**E**
56	Grant Line Rd	Sheldon Rd	Wilton Rd	Elk Grove	Elk Grove	D	2	Rural S	17,459	0.87	**E**
57	Grant Line Rd	Wilton Rd	Bond Rd	Elk Grove	Elk Grove	D	2	Rural S	16,064	0.80	**E**
98	South Watt Ave	Jackson Rd	Fruitridge Rd	City of Sacramento/ County	City Default	D	2	Arterial M	25,832	1.44	**F**
99	South Watt Ave	Fruitridge Rd	Elder Creek Rd	City of Sacramento/ County	City Default	D	2	Arterial M	21,567	1.20	**F**
100	South Watt Ave	Elder Creek Rd	Florin Rd	City of Sacramento/ County	City Default	D	2	Arterial M	19,069	1.06	**F**
101	Sunrise Blvd	US 50	Folsom Blvd	Rancho Cordova	Rancho Cordova	D	7	Arterial M	54,500	1.01	**F**
102	Sunrise Blvd	Folsom Blvd	Trade Center Dr	Rancho Cordova	Rancho Cordova	D	6	Arterial M	49,500	0.92	**E**
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	Rancho Cordova/County	Rancho Cordova	D	2	Arterial M	16,894	0.94	**E**
110	Watt Ave	US 50	Folsom Blvd	City of Sacramento/ County	City Exempt Light Rail	E	6	Arterial H	65,242	1.09	**F**

[1] The following classifications are used to determine daily roadway capacity:
Arterial L - Arterial, Low Access Control; Arterial M - Arterial, Moderate Access Control; Arterial H - Arterial, High Access Control
Rural Hwy - Rural 2-lane Highway; Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders; Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders
Res Collector F - Residential Collector with Frontage; Res Collector NF - Residential Collector with No Frontage
Source: DKS Associates 2018

INTERSECTION OPERATING CONDITIONS

Existing intersection geometry (number of approach lanes and traffic control) is illustrated in detail in Appendix TR-1.

Table TR-7 summarizes the existing a.m. and p.m. peak hour operating conditions at the study area intersections operating at deficient LOS, and the performance of the intersection compared to the LOS policies of the applicable jurisdiction. Detailed intersection operating condition calculations and the full list of traffic study area intersection operating conditions are included in Appendix TR-1. As shown in Table TR-7, the following intersections do not meet the applicable LOS thresholds:

- South Watt Avenue and Elder Creek Road - a.m. and p.m. peak hours,
- Bradshaw Road and Folsom Boulevard - a.m. peak hour,
- Happy Lane and Old Placerville Road - northbound left turn - a.m. and p.m. peak hours,
- Mather Field Road and Rockingham Drive - a.m. peak hour,
- Zinfandel Drive and US 50 Eastbound Ramps / Gold Center Drive - p.m. peak hour,
- Sunrise Boulevard and Jackson Road - a.m. peak hour,
- Grant Line Road and Jackson Road - a.m. and p.m. peak hours, and
- Grant Line Road and Wilton Road - a.m. and p.m. peak hours.

FREEWAY SEGMENT OPERATING CONDITIONS

US 50 FREEWAY

Table TR-8 summarizes a.m. and p.m. peak hour US 50 freeway mainline operations. Detailed analysis and data are included in Appendix TR-1. The following locations do not meet the applicable LOS thresholds:

- Eastbound
  - Stockton Boulevard to 59th Street - a.m. and p.m. peak hours
  - Bradshaw Road to Mather Field Road - a.m. peak hour
  - Zinfandel Drive to Hazel Avenue - p.m. peak hour
- Westbound
  - Mather Field Road to Watt Avenue - a.m. peak hour
  - Watt Avenue to 59th Street - a.m. and p.m. peak hours
  - 59th Street to SR 51 / SR 99 - p.m. peak hour

Table TR-7: Existing Intersections Operating at Deficient Level of Service

Intersection		Jurisdiction	Governing Jurisdiction/ Area[1]	LOS Policy Criteria	Existing A.M. Peak Hour			Existing P.M. Peak Hour		
					Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
18	S. Watt Ave & Elder Creek Rd	City of Sacramento / County	City Default	D	Signal	**E**	62.7	Signal	**E**	68.8
33	Bradshaw Rd & Folsom Blvd.	City of Rancho Cordova / County	Rancho Cordova	D	Signal	**E**	56.7	Signal	D	49.9
42	Happy Lane & Old Placerville Rd	City of Rancho Cordova / County	Rancho Cordova	D	Two-way stop			Two-way stop		
	Northbound Left Turn			D		**F**	64.8		**F**	95.9
51	Mather Field Rd & Rockingham Dr	City of Rancho Cordova	Rancho Cordova	D	Signal	**E**	56.4	Signal	D	54.7
54	Zinfandel Dr & US 50 EB Ramps/Gold Center Dr	City of Rancho Cordova	Rancho Cordova	D	Signal	D	40.0	Signal	**E**	60.1
70	Sunrise Blvd & Jackson Rd	City of Rancho Cordova / County	Rancho Cordova	D	Signal	**E**	57.0	Signal	D	47.2
80	Grant Line Rd & Jackson Rd	City of Rancho Cordova / County [Connector JPA]	Rancho Cordova [Connector JPA]	D [C]	Signal	**E**	74.0	Signal	**E**	78.9
93	Grant Line Rd & Dwy/Wilton Rd	City of Elk Grove / Connector JPA	Rancho Cordova [Connector JPA]	D [C]	Signal	**E**	65.9	Signal	**E**	64.8

Notes: **Bold** values denote intersections and/or movements that do not meet applicable LOS thresholds.
Source: DKS Associates 2018

Table TR-8: Existing Peak Hour Freeway Basic Segment Level of Service

Direction	Location	Mixed Flow Lanes	A.M. Peak Hour			P.M. Peak Hour		
			Volume	Density	LOS	Volume	Density	LOS
East-Bound US 50	SR 99/SR 51 to Stockton Boulevard	5	7,068	23.46	C	6,415	23.33	C
	Stockton Boulevard to 59th Street	5	7,470	35.05	**F**	7,228	41.46	**F**
	59th Street to 65th Street	4	6,767	27340	D	6,641	28.36	D
	65th Street to Howe Avenue	5	7,962	28.05	D	7,562	29.71	D
	Howe Avenue to Watt Avenue	4	7,405	31.77	D	7,602	33.01	D
	Watt Avenue to Bradshaw Road	4	7,935	27.22	D	7,176	24.80	C
	Bradshaw Rd to Zinfandel Drive	4	7,725	45.10	**F**	7,366	25.50	C
	Mather Field Rd to Zinfandel Drive	5	7,275	19.18	C	7,224	20.13	C
	Zinfandel Drive to Sunrise Blvd	4	5,121	20.08	C	6,649	42.12	**F**
	Sunrise Boulevard to Hazel Avenue	3	4,985	27.67	D	5,323	37.30	**F**
West-Bound US 50	Hazel Avenue to Sunrise Boulevard	3	6,068	32.91	D	4,370	23.17	C
	Sunrise Blvd to Zinfandel Drive	4	7,502	33.31	D	4,762	19.30	C
	Zinfandel Drive to Mather Field Rd	5	7,548	21.96	C	5,765	14.85	B
	Mather Field Rd to Bradshaw Road	4	7,859	44.40	**F**	6,739	28.66	D
	Bradshaw Road to Watt Avenue	4	7,488	53.92	**F**	6,466	32.91	D
	Watt Avenue to Howe Avenue	5	7,376	53.11	**F**	6,234	28.04	**F**
	Howe Avenue to 65th Street	5	8,157	35.68	**F**	7,407	41.55	**F**
	65th Street to 59th Street	4	8,278	44.85	**F**	7,358	51.56	**F**
	59th Street to Stockton Boulevard	5	9,115	29.39	D	7,945	432.31	**F**
	Stockton Boulevard to SR 99/SR 51	5	8,546	31.89	D	8,136	33.25	**F**

Density = passenger cars per hour per lane (px/ph/pl). **Bold** values denote level of service "F" conditions.
Source: DKS Associates 2018

Freeway Merge / Diverge / Weave Segment Operating Conditions

Table TR-9 summarizes a.m. and p.m. peak hour freeway operations at merge/diverge/weave segments. Detailed freeway segment operations analysis is included in Appendix TR-1. The following locations do not meet the applicable LOS thresholds:

- Eastbound
  - Watt Avenue Entrance Merge - a.m. peak hour
  - Mather Field Road to Zinfandel Drive weave - a.m. peak hour
- Westbound
  - Sunrise Boulevard Entrance - a.m. peak hour

Freeway Ramp Intersection Queuing Conditions

Table TR-10 summarizes a.m. and p.m. peak hour freeway ramp intersection queuing. None of the existing queues extends onto the freeway mainline. Detailed freeway ramp queuing analysis is included in Appendix TR-1.

Rural Roadway Functionality

Sacramento County is currently the only jurisdiction within the traffic study area that has adopted policies regarding the functionality of rural roadways. Therefore, the functionality of rural roadways in jurisdictions within the study area other than Sacramento County were not analyzed in the Traffic Report. Plate TR-9 shows the rural roadway segments that do not meet the County standard of 12-foot vehicle lanes with 6-foot paved shoulders under existing conditions. Table TR-11 summarizes substandard County rural roadways in the study area.

Table TR-9: Existing Peak Hour Freeway Merge/Diverge/Weave Segment Level of Service

Direction	Location	Junction Type	A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS
East-Bound US 50	Northbound 65th Street Slip Entrance	Weave	765	D	653	C
	Howe Avenue/Hornet Drive Exit		1,631		1,417	
	Southbound Howe Avenue Loop Entrance	One-Lane Merge	484	C	881	C
	Northbound Howe Avenue Slip Entrance	One-Lane Merge	419	C	431	C
	Watt Avenue Exit	Two-Lane Diverge	1,317	B	1,634	B
	Watt Avenue Entrance	One-Lane Merge	2,134	**F**	1,724	D
	Bradshaw Road Exit	Two-Lane Diverge	1,520	B	1,228	B
	Southbound Bradshaw Road Loop Entrance	One-Lane Merge	220	C	422	C
	Northbound Bradshaw Road Slip Entrance	One-Lane Merge	971	C	918	C
	Mather Field Road Exit	Two-Lane Diverge	1,266	B	1062	A

Direction	Location	Junction Type	A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS
	Southbound Mather Field Road Loop Entrance	One-Lane Merge	125	C	101	B
	Northbound Mather Field Road Slip Entrance	Weave	317	**F**	816	C
	Zinfandel Drive Exit		2,932		1,452	
	Southbound Zinfandel Drive Loop Exit	One-Lane Merge	182	B	129	C
	Northbound Zinfandel Drive Slip Entrance	One-Lane Merge	348	B	540	C
	Sunrise Boulevard Exit	Major Diverge	1,773	C	1,959	D
	Sunrise Boulevard Entrance	One-Lane Merge	992	C	889	D
	Hazel Avenue Exit	Two-Lane Diverge	933	B	1,541	C
	Hazel Avenue Entrance	Weave	804	C	945	C
	Aerojet Road Exit		241		55	
West-bound US 50	Hazel Avenue Exit	Two Lane Diverge	631	A	869	A
	Northbound Hazel Avenue Loop Entrance	One-Lane Merge	160	B	600	B
	Southbound Hazel Avenue Slip Entrance	One-Lane Merge	1550	B	800	B
	Sunrise Boulevard Exit	One-Lane Diverge	749	E	758	D
	Sunrise Boulevard Entrance	Lane Addition	2183	**F**	1,656	D
	Zinfandel Drive Exit	One-Lane Diverge	1034	E	608	C
	Northbound Zinfandel Drive Loop Entrance	Lane Addition	585	B	1,197	B
	Southbound Zinfandel Drive Slip Exit	One-Lane Merge	442	C	561	B
	Mather Field Road Exit	One-Lane Drop	1093	C	556	A
	Northbound Mather Field Road Loop Entrance	One-Lane Merge	515	B	861	B
	Southbound Mather Field Road Slip Entrance	One-Lane Merge	387	B	380	B
	Bradshaw Road Exit	Two-Lane Diverge	1236	B	1,327	B
	Northbound Bradshaw Road Loop Entrance	One-Lane Merge	914	D	910	C
	Southbound Bradshaw Road Slip Entrance	One-Lane Merge	338	D	590	C
	Watt Avenue Exit	Major Diverge	1373	D	1,188	C
	Northbound Watt Avenue Entrance	One-Lane Merge	820	D	943	C
	Southbound Watt Avenue Slip Entrance	Lane Addition/Weave	1232	C	1317	D
	Howe Avenue Exit	Major Diverge/Weave	1531	D	1,419	
	Northbound Howe Avenue Loop Entrance	One-Land Merge	654	D	602	C
	Southbound Howe Avenue Slip Entrance	One-Land Merge	574	C	574	C

Bold values denote level of service "F" conditions. Source: DKS Associates 2018

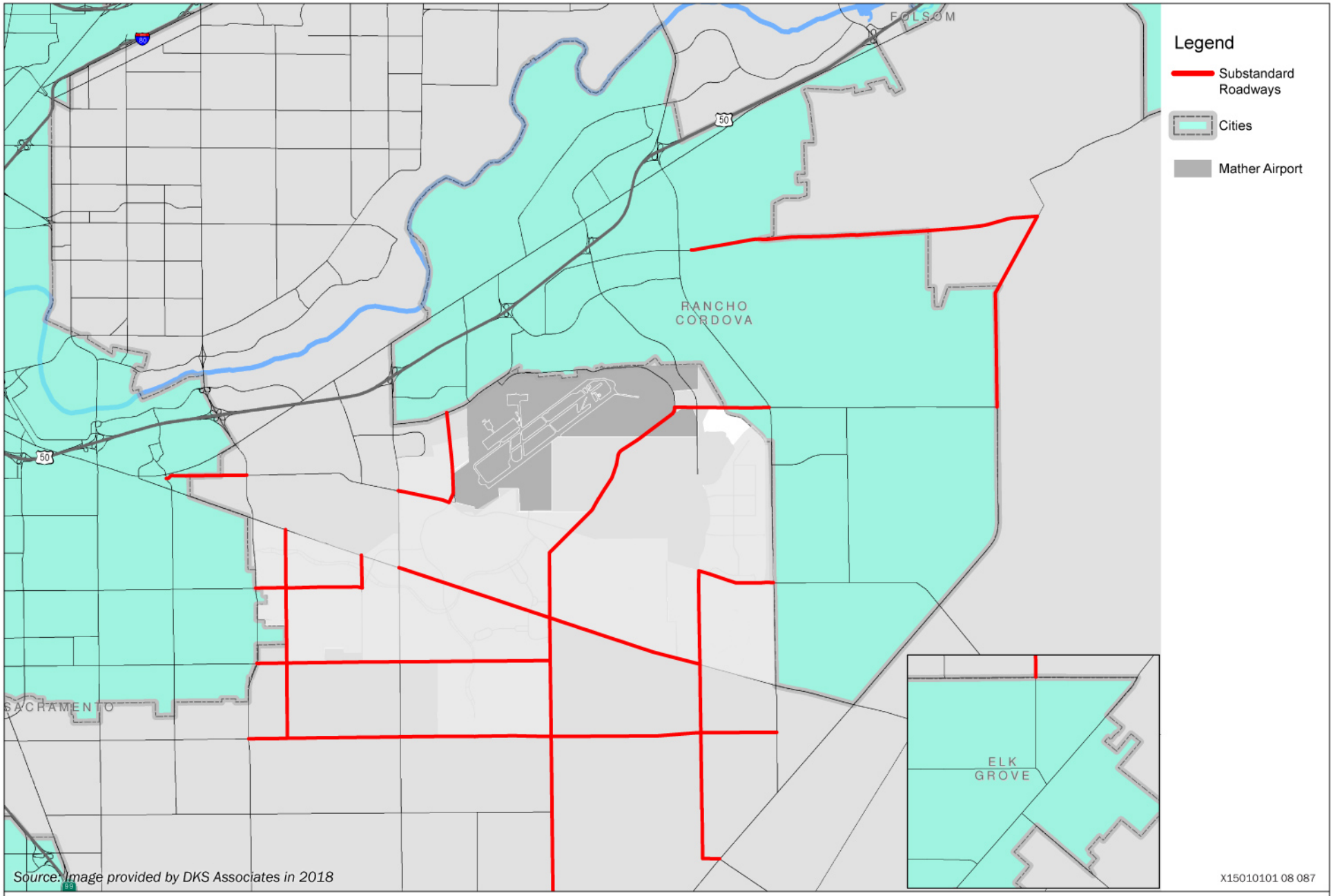


Plate TR-9: Existing Substandard Roadways

Table TR-10: Existing Peak Hour Freeway Ramp Termini Queuing

Direction	US 50 Exit Ramp	Available Storage Length (feet/lane)			Maximum Queue Length (fee/lane)					
					Existing A.M. Peak Hour			Existing P.M. Peak Hour		
		L	T	R	L	T	R	L	T	R
Eastbound US 50	Howe Avenue	765	-	765	200	-	378	224	-	247
	Watt Avenue	1,500	-	1,500	179	-	201	254	-	181
	Bradshaw Road	1,250	-	1,250	198	-	509	164	-	414
	Mather Field Road	1,385	-	1,385	207	-	554	271	-	61
	Zinfandel Drive	1,025	1,025	1,025	218	810	746	430	361	131
	Sunrise Boulevard	1,695	-	1,695	283	-	184	360	-	76
	Hazel Avenue	1,310	-	1,310	317	-	76	808	-	29
Westbound US 50	Hazel Avenue	1,995		1995	271		48	281	271	499
	Sunrise Boulevard	1540	-	1540	134	-	165	133	-	172
	Zinfandel Drive	1065	-	1065	390	-	68	132	-	199
	Mather Field Road	1335	-	1335	594	-	538	222	-	97
	Bradshaw Road	1330	-	1330	326	-	107	389	-	31
	Watt Avenue	1480	-	1480	147	-	448	94	-	425
	Howe Avenue	1355	1355	1355	192	192	123	241	412	239

L = left turn movement; T = through movement; R = right turn movement

Source: DKS Associates 2018

Table TR-11: Existing Substandard Roadway Segments

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways			
		From	To		Travel Lanes	Pavement (ft)	Substandard?[1]	Existing Volume
15	Douglas Rd	Mather Blvd	Zinfandel Dr	County	2	23	Yes	6,635
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	Rancho Cordova/County	2	23	Yes	8,369
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	County	2	20	Yes	740
20	Eagles Nest Rd	Jackson Rd	Florin Rd	County	2	<21	Yes	517
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	County	2	<21	Yes	189
25	Elder Creek Rd	South Watt Ave	Hedge Ave	County	2	23	Yes	5,576
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	County	2	23	Yes	5,797
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	County	2	23	Yes	5,355
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	County	2	23	Yes	2,158
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	County	2	22	Yes	3,716
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	County	2	<21	Yes	5,075
32	Excelsior Rd	Elder Creek Rd	Florin Rd	County	2	<21	Yes	4,203
33	Excelsior Rd	Florin Rd	Gerber Rd	County	2	<21	Yes	5,423
34	Excelsior Rd	Gerber Rd	Calvine Rd	County	2	<21	Yes	4,229
39	Florin Rd	South Watt Ave	Hedge Ave	County	2	22	Yes	7,718
40	Florin Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	6,312
41	Florin Rd	Mayhew Rd	Bradshaw Rd	County	2	22	Yes	5,317
42	Florin Rd	Bradshaw Rd	Excelsior Rd	County	2	22	Yes	3,478
43	Florin Rd	Excelsior Rd	Sunrise Blvd	County	2	22	Yes	3,835
48	Fruitridge Rd	South Watt Ave	Hedge Ave	City of Sacramento/County	2	22	Yes	2,890
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	1,790
50	Grant Line Rd	White Rock Rd	Douglas Rd	Rancho Cordova/County	2	22	Yes	7,189

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways			
		From	To		Travel Lanes	Pavement (ft)	Substandard?[1]	Existing Volume
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	County	2	22	Yes	4,635
59	Hedge Ave	Jackson Rd	Fruitridge Rd	County	2	22	Yes	3,061
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	City of Sacramento/County	2	22	Yes	3,737
61	Hedge Ave	Elder Creek Rd	Florin Rd	County	2	22	Yes	2,722
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	County	2	26	Yes	13,030
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	County	2	26	Yes	10,478
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	City of Sacramento/County	2	22	Yes	4,616
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	County	2	22	Yes	4,618
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	County	2	22	Yes	656
83	Mather Blvd-Excelsior Rd[2]	Douglas Rd	Kiefer Blvd	County	2	22	Yes	6,751
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	County	2	22	Yes	1,616
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	Rancho Cordova/County	2	20	Yes	2,490
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	County	2	<21	Yes	2,848

Notes:

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.

[2] Excluding the roadway segment that is within the developed community of Independence at Mather.

Source: DKS Associates 2018

REGULATORY SETTING

FEDERAL

There are no federal laws or regulations that are relevant to potential transportation impacts of the Mather South Project.

STATE

The *Guide for the Preparation of Traffic Impact Studies* published by Caltrans (2002) identifies circumstances under which Caltrans suggests that a traffic impact study should be required, information that Caltrans believes should be included in the study, analysis, scenarios, and guidance on acceptable analysis methodologies. The Transportation Report prepared for the Mather South Project complies with Caltrans guidelines.

US 50 CORRIDOR SYSTEM MANAGEMENT PLAN

The standards for US 50 Caltrans facilities in the traffic study area are detailed in the US 50 Corridor System Management Plan (CSMP). Typical Concept LOS standards in Caltrans District 3 is LOS D for rural areas and LOS E for urban areas. The 20-year concept LOS for US 50 in the study area is LOS F because improvements necessary to improve the LOS are not feasible due to environmental, right-of-way, financial, and other constraints. Although the US 50 CSMP allows LOS F, standards of significance hold that any increase in volume would constitute an impact.

SR 16 TRANSPORTATION CORRIDOR CONCEPT REPORT

The SR 16 Transportation Corridor Concept Report documents existing conditions and performance standards for this Caltrans facility. Caltrans District 3 has established concept LOS standards for the 20-year period of LOS D for route segments in rural areas and LOS E for route segments in urban areas.

SENATE BILL 743

Senate Bill 743, passed in 2013, requires the California Governor's Office of Planning and Research (OPR) to develop new CEQA guidelines that address traffic metrics under CEQA. Specifically, SB 743 requires OPR to amend the CEQA Guidelines to provide an alternative to LOS for evaluating transportation impacts. Particularly within areas served by transit, those alternative criteria must "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." (Public Resources Code Section 21099(b)(1)). Measurements of transportation impacts may include "vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated." (Ibid.) Once the CEQA Guidelines are amended to include those alternative criteria, auto delay will no longer be considered a significant impact under CEQA. (Id. at subd. (b)(2).)

OPR published its proposal for the comprehensive updates to the CEQA Guidelines in November 2017. This package includes proposed updates related to analyzing transportation impacts pursuant to Senate Bill 743. The Technical Advisory on Evaluating Transportation Impacts (November 2017) provides guidance for VMT analysis that recommends lead agencies should analyze VMT outcomes of land use plans over the full area over which the plan may substantively affect travel patterns, including beyond the boundary of the plan or the jurisdiction's geography. Analysis of specific plans may employ the same significance thresholds used for smaller, individual projects described in the Technical Advisory. In December 2018, OPR and the State Natural Resources Agency submitted the updated CEQA Guidelines to the Office of Administrative Law for final approval to implement SB 743.

LOCAL

METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY

The Sacramento Area Council of Governments (SACOG) is responsible for the preparation of, and updates to, the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) and the corresponding Metropolitan Transportation Improvement Program (MTIP) for the six-county Sacramento region. The MTP/SCS provides a 20-year transportation vision and corresponding list of projects. The MTIP identifies short-term projects (7-year horizon) in more detail. The current MTP/SCS was adopted by the SACOG board in 2016 (SACOG 2016) and has a horizon year of 2036. The Mather Field Specific Plan is included as a developing community in the regional growth forecast of the MTP/SCS, and the Plan Area is a part of the Mather Field Specific Plan area. However, the Mather South Project, as proposed in the Mather South Community Master Plan, contains approximately 1,000 more units than that which was proposed under the Mather Field Specific Plan in the MTP/SCS.

CAPITAL SOUTHEAST CONNECTOR JOINT POWERS AUTHORITY

The Capital SouthEast Connector Joint Powers Authority (JPA) was formed in December 2006 and includes the cities of Elk Grove, Folsom and Rancho Cordova, and El Dorado and Sacramento Counties. Under a policy set forth by the JPA, signalized intersections along the Connector facility are required to operate at LOS C or better (with LOS D being allowed in the Sheldon area). The Connector JPA's LOS policy only applies to intersections, it does not apply to roadway segments.

However, if a roadway segment is projected to exceed a four-lane capacity (i.e. reach LOS F as an arterial), or if an intersection fails to meet the LOS policy at either end of the segment, grade separation should be implemented, resulting in "Expressway" segment capacities. The exception to this policy is in the Sheldon area of the City of Elk Grove. Due to more limited opportunities for access control and right-of-way acquisition, intersections are permitted to operate at LOS D or better. Intersections are also allowed to govern over roadway segment analysis. That is to say, if all at-grade signalized intersections operate within the LOS D policy, a roadway segment analysis otherwise indicating LOS F is not considered to be a deficiency or impact.

Sacramento County Department of Transportation Traffic Impact Guidelines

The SacDOT's Traffic Impact Guidelines (July 2004) defines the methodologies to use in analyzing transportation impacts and determining impact significance.

Sacramento County General Plan

The Sacramento County General Plan includes the following policies that may be applicable to the project related to mobility, including roadways, transit, and bicycle and pedestrian facilities.

CI-1. Provide complete streets to provide safe and efficient access to a diversity of travel modes for all urban, suburban and rural land uses within Sacramento County except within certain established neighborhoods where particular amenities (such as sidewalks) are not desired. Within rural areas of the County, a complete street may be accommodated through roadway shoulders of sufficient width or other means to accommodate all modes of travel.

CI-3. Travel modes shall be interconnected to form an integrated, coordinated and balanced multi-modal transportation system, planned and developed consistent with the land uses to be served.

CI-4. Provide multiple transportation choices to link housing, recreational, employment, commercial, educational, and social services.

CI-5. Land use and transportation planning and development should be cohesive, mutually supportive, and complement the objective of reducing per capita VMT.

CI-9. Plan and design the roadway system in a manner that meets LOS D on rural roadways and LOS E on urban roadways, unless it is infeasible to implement project alternatives or mitigation measures that would achieve LOS D on rural roadways or LOS E on urban roadways. The urban areas are those areas within the Urban Service Boundary as shown in the Land Use Element of the Sacramento County General Plan. The areas outside the Urban Service Boundary are considered rural.

CI-10. Land development projects shall be responsible to mitigate the project's adverse impacts to local and regional roadways.

CI-12. To preserve public safety and local quality of life on collector and local roadways, land development projects shall incorporate appropriate treatments of the Neighborhood Traffic Management Program.

CI-16. The County supports creating communities that promote access and mobility for all modes of travel through the development of roadway networks based on a grid or modified grid layout.

CI-27. Public Facilities Financing Plans shall incorporate capital costs for transit. Infrastructure Master Plans shall include transit planning.

CI-29. The County shall work with transit service providers to establish and implement development guidelines to maximize the ability of new development and redevelopment to support planned transit services. New development and redevelopment shall have an orientation to travel patterns that are conducive to transit service. This will include concentration of development in centers and along linear corridors such that trip origins and destinations are concentrated near transit services.

CI-35. The applicant/developer of land development projects shall be responsible to install bicycle and pedestrian facilities in accordance with Sacramento County Improvement Standards and may be responsible to participate in the fair share funding of regional multi-use trails identified in the Sacramento County Bicycle Master Plan.

CI-37. Pursue all available sources of funding for the development, improvement, and maintenance of bikeways, pedestrian facilities and multi-use trails, and to support bicycle and pedestrian safety, education, encouragement and enforcement programs.

CI-38. Design and construct pedestrian facilities to ensure that such facilities are accessible to all users.

LU-37. Provide and support development of pedestrian and bicycle connections between transit stations and nearby residential, commercial, employment or civic uses by eliminating physical barriers and providing linking facilities, such as pedestrian overcrossings, trails, wide sidewalks and safe street crossings.

LU-39. Support implementation of the ADA Transitional Plan and the Pedestrian Master Plan to create a network of safe, accessible and appealing pedestrian facilities and environments.

LU-40. Employ appropriate traffic calming measures in areas where pedestrian travel is desirable but made unsafe by a high volume or excessive speed of automobile traffic. Preference shall be given to measures that slow traffic and improve pedestrian safety while creating the least amount of conflict with emergency responders.

LU-42. Master planning efforts for new growth areas shall provide for separated sidewalks along all arterials and thoroughfares to make walking a safer and more attractive transportation option.

City of Sacramento

The Mobility Element of the City of Sacramento 2030 General Plan (City of Sacramento 2015) outlines goals and policies that coordinate the transportation and circulation

system with planned land uses. The City of Sacramento has the following LOS policy relevant to this study:

Policy M 1.2.2 LOS Standard. The City shall allow for flexible LOS standards, which will permit increased densities and mix of uses to increase transit ridership, biking, and walking, which decreases auto travel, thereby reducing air pollution, energy consumption, and greenhouse gas emissions.

- **Level of Service Standard for Multi-Modal Districts** – The City shall seek to maintain the following standards in the Central Business District, in areas within ½ mile walking distance of light rail stations, and in areas designated for urban scale development (Urban Centers, Urban Corridors, and Urban Neighborhoods as designated in the Land Use and Urban Form Diagram). These areas are characterized by frequent transit service, enhanced pedestrian and bicycle systems, a mix of uses, and higher density development.
    - Maintain operations on all roadways and intersections at LOS A-E at all times, including peak travel times, unless maintaining this LOS would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. LOS F conditions may be acceptable, provided that provisions are made to improve the overall system and/or promote non-vehicular transportation and transit as part of a development project or a City-initiated project.
- **Base Level of Service Standard** – the City shall seek to maintain the following standards for all areas outside of multi-modal districts.
    - Maintain operations on all roadways and intersections at LOS A-D at all times, including peak travel times, unless maintaining this LOS would, in the City's judgment, be infeasible and/or conflict with the achievement of other goals. LOS E or F conditions may be accepted, provided that provisions are made to improve the overall system and/or promote non-vehicular transportation as part of a development project or a City-initiated project.
    - **Roadways Exempt from Level of Service Standard** – The above LOS standards shall apply to all roads, intersections, or interchanges within the City except as specified below. If a Traffic Study is prepared and identifies a significant LOS impact to a roadway or intersection that is located within one of the roadway corridors described below, the project would not be required in that particular instance to widen roadways in order for the City to find project conformance with the General Plan. Instead, General Plan conformance could still be found if the project provides improvements to other parts of the city wide transportation system in order to improve transportation-system-wide roadway capacity, to make intersection improvements, or to enhance non-auto travel modes in furtherance of the General Plan goals. The improvements would be required within the project site vicinity or within the area affected by the project's vehicular traffic impacts. With the provision of such other transportation infrastructure improvements, the project would not be required to provide any mitigation for vehicular traffic impacts to the listed road segment in order to conform to the General Plan.

- 12th/14th Avenue: State Route 99 to 36th Street
- 24th Street: Meadowview Road to Delta Shores Circle
- 65th Street: Folsom Boulevard to 14th Avenue
- Alhambra Boulevard: Folsom Boulevard to P Street
- Arcade Boulevard: Marysville Boulevard to Del Paso Boulevard
- Arden Way: Capital City Freeway to Ethan Way
- Blair Avenue/47th Avenue: S. Land Park Drive to Freeport Boulevard
- Broadway: 15th Street to Franklin Boulevard
- Broadway: 58th to 65th Streets
- El Camino Avenue: Stonecreek Drive to Marysville Boulevard
- El Camino Avenue: Capital City Freeway to Howe Avenue
- Elder Creek Road: 65th Street to Power Inn Road
- Florin Perkins Road: 14th Avenue to Elder Creek Road
- Florin Road: Greenhaven Drive to I-5; 24th Street to Franklin Boulevard
- Folsom Boulevard: 34th Street to Watt Avenue
- Freeport Boulevard: Broadway to Seamas Avenue
- Fruitridge Road: Franklin Boulevard to SR 99
- Garden Highway: Truxel Road to Northgate Boulevard
- Howe Avenue: American River Drive to Folsom Boulevard
- J Street: 43rd Street to 56th Street
- Mack Road: Meadowview Road to Stockton Boulevard
- Martin Luther King Boulevard: Broadway to 12th Avenue
- Marysville Boulevard: I-80 to Arcade Boulevard
- Northgate Boulevard: Del Paso Road to SR 160
- Raley Boulevard: Bell Avenue to I-80
- Roseville Road: Marconi Avenue to I-80
- Royal Oaks Drive: SR 160 to Arden Way
- Truxel Road: I-80 to Gateway Park2

City of Rancho Cordova

Applicable goals and policies of the City of Rancho Cordova General Plan (City of Rancho Cordova 2006) relating to traffic and transportation are listed below:

C.1.2. Seek to maintain operations on all roadways and intersections at LOS D or better at all times, including peak travel times, unless maintaining this LOS would, in the City's judgment, be infeasible and / or conflict with the achievement of other goals. Congestion in excess of LOS D may be accepted in these cases, provided that provisions are made to improve traffic flow and / or promote non-vehicular transportation as part of a development project of a City-initiated project

C.1.11. As part of major individual roadway enhancement project (e.g., intersection redesign, signalization of previously un-signalized intersection), enhance and upgrade pedestrian and bicycle facilities within one-quarter mile of the project.

C.2.6. Provide on-street bike lanes along all connector roadways and on local and major roadways when necessary to provide for interconnected routes. On-street bike routes may be provided on local, connector, and major roadways as deemed necessary by the City.

The City of Rancho Cordova formally adopted the County's traffic impact study guidelines upon incorporation; and thus, plans and policies from the County Guidelines were used in this analysis, except where the Circulation Element of the City of Rancho Cordova General Plan supersedes County thresholds and requirements. The City of Rancho Cordova has adopted a LOS D policy.

City of Elk Grove

Applicable goals and policies of the City of Elk Grove General Plan (City of Elk Grove 2003) relating to traffic and transportation are listed below:

CI-13. The City shall require that all roadways and intersections in Elk Grove operate at a minimum LOS D at all times.

CI-14. The City recognizes that LOS D may not be achieved on some roadway segments and may also not be achieved at some intersections. Roadways on which LOS D is projected to be exceeded are shown in the General Plan Background Report, based on the latest traffic modeling conducted by the City. On these roadways, the City shall ensure that improvements to construct the ultimate roadway system as shown in this Circulation Element are completed, with the recognition that maintenance of the desired LOS may not be achievable.

City of Folsom

Applicable goals and policies of the City of Folsom General Plan (City of Folsom 1993) relating to traffic and transportation are listed below:

17.17 The City should strive to achieve at least a traffic LOS C throughout the City. During the course of the Plan buildout it may occur that temporary higher LOS results where roadway improvements have not been adequately phased as development proceeds. However, this situation will be minimized based on

annual traffic studies as approved by the City of Folsom and Monitoring programs. Resolution No. 3798.

As part of the Folsom South of U.S. Highway 50 Specific Plan, the LOS policy for the portion of the City of Folsom to be located south of US 50 is amended as follows:

> The City should strive to achieve at least a traffic LOS C within the Folsom South of US 50 Specific Plan. For roadways and intersection within the Specific Plan, LOS D conditions may be considered on a case by basis if improvement required to meet LOS C exceeds the "normally accepted maximum" improvements established the City (City of Folsom 2011).

Cordova Community Plan

The Cordova Community Plan contains the following objectives related to traffic and circulation:

Objective TC-1. Promote a high-quality multi-modal transportation system by reducing mobile-source emissions and reliance on the personal automobile.

Objective TC-5. Promote public transit services to all employment and activity centers; or alternatively, encourage the formation of privately funded shuttle bus services within the community.

Objective TC-6. Promote the location of convenient LRT stations to provide access for all segments of the population to a broad range of neighborhoods, employment centers, retail and community services.

Objective TC-7. Promote a high-quality off-street bicycle/pedestrian system that connects all major employment and activity centers.

Objective TC-8. Ensure adequate pedestrian circulation by sidewalks or similar means within and between land uses.

Objective TC-9. Ensure adequate bicycle provisions within new land uses to encourage bicycle usage.

Objective TC-11. Encourage the construction of a high-speed, limited-access expressway (parkway concept) linking Roseville-Rocklin with Folsom, Rancho Cordova and Elk Grove, and offering relief to the traffic congestion on the Highway 50 Corridor.

Mather Field Specific Plan And Special Planning Area

The Mather Field Specific Plan and Special Planning Area contains standards applicable to the Mather South Project.

603-18. MATHER FIELD ROAD IMPROVEMENT AND MAINTENANCE STANDARDS. The Mather Field Special Planning Area shall include a three-tiered system for roadway

maintenance and improvement. The three tiers are: primary streets, secondary streets, and tertiary streets. Different standards for both roadway design and roadway maintenance shall occur depending on the category of street. The standards are included as Section 603-20.7 of this Article.

603-19. PERFORMANCE STANDARDS FOR MATHER FIELD EXCEPT THE SINGLE FAMILY RESIDENCES AND PARKS SUBAREAS AS IDENTIFIED IN SECTION 603-20.3 AS "Site D."

INFRASTRUCTURE PROVISION AND FINANCING

B. All development within the Mather Field Special Planning Area (SPA), new and existing, regardless of private or public ownership, shall be subject to the payment of fees, assessments, special taxes, and any other charges in accordance with any subsequent infrastructure financing plan adopted by the Board of Supervisors for the Mather Field SPA, including any authorized adjustments thereto as provided within such infrastructure financing plan, and any other fees adopted by the County in accordance with the requirements of Chapter 5 (commencing with Section 66000) of Division 1 of Title 7 of the Government Code or pursuant to any other enabling law. Such infrastructure financing plan may include, but not by way of limitation, roadway, transit, water supply, sanitary sewer, drainage, fire protection, landscape and lighting facilities, and utilities.

603-20.6 Mather Field SPA - Development Standards

603-20.7 Mather Field Road Improvement and Maintenance Standards

Sacramento County Bicycle Master Plan

The Sacramento County Bicycle Master Plan (SCBMP) (Sacramento County 2011b) is intended to guide and influence bikeway policies, programs, and development of standards to make biking in Sacramento County safer, more comfortable, convenient, and enjoyable, and ultimately encourage more individuals to participate in cycling for transportation and recreation.

The SCMBP references the Highway Design Manual in identifying that bicycle safety is improved through designating travel route facilities for the primary purpose of bicycle travel; these facilities are known as "bikeways." Bikeways are classified into one of three different classes of bicycle travel routes, identified as Class I, Class II, and Class III, based on the following descriptions:

- **Off-Street Bike Paths (Class I Bikeways)**: These facilities are off-street bike paths in a right-of-way designated for exclusive use by cyclists and pedestrians.
- **On-Street Bike Lanes (Class II Bikeways)**: These facilities are street lanes identified with lane markings and signage for preferential use by cyclists.
- **On-Street Bike Routes (Class III Bikeways)**: These facilities are on-street bike routes designated by signs or permanent markings and are shared by motorists.

Generally, these routes are through streets that provide connectivity for the bicycle network where Class I or Class II bikeways are not present.

The following proposed future extensions of bikeway facilities identified in the SCBMP border the project site on the major arterial streets east and south of the project site:

- a Class II Bikeway is proposed along Excelsior Road; and
- an extension of the Class II bikeway on Calvine Road is planned from its current terminus with Vineyard Road past the project site.

Sacramento County Pedestrian Master Plan

The Sacramento County Pedestrian Master Plan (SCPMP) (Sacramento County 2007) is intended to improve pedestrian safety and access on public streets within the unincorporated portions of Sacramento County. The goal is to optimize the pedestrian experience, to provide safe and usable pedestrian facilities for all pedestrians, and to assure compliance with all federal, state and local regulations and standards. The SCPMP contains the following policies applicable to the project:

- **Policy 1 - Pedestrian Safety:** Create a safe street environment for pedestrians.
- **Policy 2 - Disabled Access Develop:** Build and maintain a pedestrian network that is accessible to all.
- **Policy 3 - Pedestrian Access:** Develop, build and maintain a convenient and well-connected pedestrian network that offers a viable alternative to the use of automobiles.

Impacts and Analysis

Methodology

This section describes the methodology used to analyze expected transportation conditions associated with implementation of the Mather South Project.

Project Characteristics

Project Trip Generation

The SACSIM model was utilized to estimate transportation forecasts based on estimated trip generation of the Mather South Project. Table TR-12 summarizes the person trip generation of the project.

Table TR-12: Estimate Person Trip Generation Mather South

Trip Purpose	Daily Person Trip Ends
Work Trips	7,135
Non-Work Trips	38,320
All Trip Purposes	45,456
Source: DKS Associates 2018	

The Mather South Project would generate over 7,100 daily work person trip ends, and over 45,400 daily person trip ends for all trip purposes. Table TR-13 summarizes the estimated mode choice for the Existing plus Mather South project scenario. The mode choice assumes full implementation of the project's pedestrian and bicycle systems.

Table TR-13: Mode Split Mather South

Mode	Percentage of Person Trips by Trip Purpose		
	Work Trips	Non-Work Trips	All Trip Purposes
Auto – SOV	85.3%	47.3%	53.2%
Auto - HOV	11.1%	42.7%	37.7%
Transit	2.0%	0.6%	0.9%
Walk	1.1%	8.7%	7.5%
Bike	0.4%	0.7%	0.7%
Notes: SOV = single-occupancy vehicle, HOV = high-occupancy vehicle Source: DKS Associates 2018			

About 90.9 percent of all person trips are expected to be accommodated by automobile, while transit would serve about 0.9 percent of all trips. Walk and bike modes would accommodate about 8.2 percent of all trips.

Table TR-14 summarizes the vehicular (auto) trip generation of the Mather South Project. The Mather South Project is estimated to generate over 31,000 daily vehicle trip ends.

Table TR-14: Estimated Daily Vehicle Trip Generation Mather South

Trip Type		a.m. Peak Hour	p.m. Peak Hour	Daily
Total Vehicle Trip Ends		2,895	2,809	31,129
Percent Internal Trip Ends[1]		12.4	12.0	12.8
Vehicle Trips	Internal to Project	179	169	1,996
	External to Project	2,536	2,471	27,139
	Total	2,715	2,640	29,134
Notes: [1] Both trips ends within the project. Source: DKS Associates 2018				

It should be noted that more than one-person trip may be accommodated by a vehicle trip (e.g., carpooling). Approximately 4,000 of the daily vehicle trip ends will be associated with trips with both an origin and destination within the Mather South Project, making up about 30 percent of the trip ends. The internal trip ends represent about 2,000 daily vehicle trips (one-half the number of internal trip ends). The Mather South Project would generate over 27,000 external vehicle trips that have an origin or destination inside the Mather South Project but the other end of the trip is outside the Mather South Project. Table TR-14 also shows the vehicle trips generated during the a.m. and p.m. peak hours.

PROJECT TRIP DISTRIBUTION

The distribution of trips associated with development on the Mather South Project was derived utilizing SACSIM and by incorporating the proposed land use and access locations associated with the Mather South Project. Plate TR-10 illustrates the overall trip distribution of the daily Mather South Project trips under the Existing Plus Mather South Project scenario. The highest percentages of traffic generated by the Mather South Project would use Eagles Nest Road and Zinfandel Drive.

PROJECT TRANSPORTATION IMPROVEMENTS

ROADWAY SEGMENT AND INTERSECTION IMPROVEMENTS

The Mather South Project would widen and/or complete many roadways that cross or border the Plan Area and would include new roadways to serve the proposed land uses. Table TR-15 shows the existing and proposed roadway geometrics assumed as part of the project.

All roadway improvements would be designed to meet all the design and safety standards established by the County and would provide adequate site distances and access for vehicles entering and leaving the site.

Table TR-15: Revised Project Existing and Existing Plus Mather South Project Intersection Geometrics

	Intersection	Traffic Control		Existing Lane Geometrics				Existing Plus Mather South Project Lane Geometrics			
		Existing	Existing Plus Project	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach
1	Howe Avenue & College Town Drive/US 50 WB Ramps	Signal	Signal	↑↑↑↱	↲↓↓↓↓	↰↱	↰↰↰↱↱	↑↑↑↱	↲↓↓↓↓	↰↱	↰↰↰↱↱
2	Howe Avenue & US 50 EB Ramps	Signal	Signal	↑↑↑↱	↲↓↓↓	↰↰↱↱		↑↑↑↱	↲↓↓↓	↰↰↱↱	
3	Power Inn Road/Howe Avenue & Folsom Blvd	Signal	Signal	↰↰↑↑↑↱	↲↓↓↓↰↰	↰↰↑↱	↰↰↑↑↱↱	↰↰↑↑↑↱	↲↓↓↓↰↰	↰↰↑↱	↰↰↑↑↱↱
4	Power Inn Road & 14th Avenue	Signal	Signal	↰↰↑↑↱	↲↓↓↰	↰↰↱	↟	↰↰↑↑↱	↲↓↓↰	↰↰↱	↟
5	Power Inn Road & Fruitridge Road	Signal	Signal	↰↰↑↱	↲↓↓↰↰	↰↑↱	↰↑↑↱	↰↰↑↱	↲↓↓↰↰	↰↑↱	↰↑↑↱
6	Jackson Road/Notre Dame Dr. & Folsom Blvd.	Signal	Signal	↰↰↱	↲↟	↰↑↑↱	↰↑↑↱	↰↰↱	↲↟	↰↑↑↱	↰↑↑↱
7	Florin Perkins Road/Julliard Dr. & Folsom Boulevard	Signal	Signal	↰↰↱	↲↟↰	↰↑↑↱	↰↑↱	↰↰↱	↲↟↰	↰↑↑↱	↰↑↱
8	Florin Perkins Road & Kiefer Blvd.	Two-way stop	Two-way stop	↑↱	↓↓↰		↰↱	↑↱	↓↓↰		↰↱
9	Florin Perkins Road & Jackson Road	Signal	Signal	↰↑↑↱	↲↓↰	↰↑↱↱	↰↑↱	↰↑↑↱	↲↓↰	↰↑↱↱	↰↑↱
10	Florin Perkins Road & Fruitridge Road	Signal	Signal	↰↑↑↱	↲↓↓↰	↰↑↑↱	↰↑↱	↰↑↑↱	↲↓↓↰	↰↑↑↱	↰↑↱
11	Florin Perkins Road & Elder Creek Road	Signal	Signal	↰↑↑↱	↲↓↓↰	↰↑↑↱	↰↑↑↱	↰↑↑↱	↲↓↓↰	↰↑↑↱	↰↑↑↱
12	Watt Avenue & Folsom Blvd.	Signal	Signal	↰↰↑↑↑↱	↲↓↓↓↰↰	↰↰↑↑↱	↰↰↑↑↱	↰↰↑↑↑↱	↲↓↓↓↰↰	↰↰↑↑↱	↰↰↑↑↱
13	S. Watt Ave. & Reith Ct/Manlove Road	Signal	Signal	↰↑↑↱	↲↓↓↰	↟	↰↱↱	↰↑↑↱	↲↓↓↰	↟	↰↱↱
14	S. Watt Avenue & Kiefer Blvd.	Signal	Signal	↰↰↑↑↱	↲↓↓↰↰	↰↰↑↑↱	↰↰↑↑↱	↰↰↑↑↱	↲↓↓↰↰	↰↰↑↑↱	↰↰↑↑↱
15	S. Watt Avenue & Canberra Dr.	Signal	Signal	↑↑↱	↓↓↰		↰↱	↑↑↱	↓↓↰		↰↱
16	S. Watt Avenue & Jackson Road	Signal	Signal	↰↑↑↱	↲↓↓↰	↰↱	↰↑↱	↰↑↑↱	↲↓↓↰	↰↱	↰↑↱
17	S. Watt Avenue & Fruitridge Road	Signal	Signal	↰↑↱	↲↓↓↰	↰↑↱	↰↱	↰↑↱	↲↓↓↰	↰↑↱	↰↱
18	S. Watt Avenue & Elder Creek Road	Signal	Signal	↰↑↱	↲↓↰	↑↱	↰↑↱	↰↑↱	↲↓↰	↑↱	↰↑↱
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	Signal	↰↑↱	↲↓↰	↰↑↱	↰↑↑↱	↰↑↱	↲↓↰	↰↑↱	↰↑↑↱
21	Elk Grove Florin Road & Gerber Road	Signal	Signal	↰↰↑↱	↲↓↓↰↰	↰↰↑↑↱	↰↰↑↑↱	↰↰↑↱	↲↓↓↰↰	↰↰↑↑↱	↰↰↑↑↱
23	Hedge Avenue & Jackson Road	Signal	Signal	↰↱	↞	↰↑↱	↰↑↱	↰↱	↞	↰↑↱	↰↑↱
24	Hedge Avenue & Fruitridge Road	All-way stop	All-way stop	↟	↟	↟	↟	↟	↟	↟	↟
25	Hedge Avenue & Elder Creek Road	All-way stop	All-way stop	↟	↟	↟	↟	↟	↟	↟	↟
26	Hedge Avenue & Tokay Lane	Two-way stop	Two-way stop	↟	↟	↟	↟	↟	↟	↟	↟
27	Hedge Avenue & Florin Road	All-way stop	All-way stop	↟	↟	↟	↟	↟	↟	↟	↟

Intersection		Traffic Control		Existing Lane Geometrics				Existing Plus Mather South Project Lane Geometrics			
		Existing	Existing Plus Project	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach
28	Mayhew Road & Kiefer Boulevard	Signal	Signal	↰↑↱	↲↓↳	↰↑↑↱	↰↑↑↱	↰↑↱	↲↓↳	↰↑↑↱	↰↑↑↱
29	Mayhew Road & Jackson Road	Two-way stop	Two-way stop	↰↱	⅄	↰↑↱	↰↱	↰↱	⅄	↰↑↱	↰↱
30	Mayhew Road & Fruitridge Road	Two-way stop	Two-way stop	↰	↲	˅		↰	↲	˅	
31	Mayhew Road & Elder Creek Road	Two-way stop	Two-way stop	Ψ	⅄	Ψ	Ψ	Ψ	⅄	Ψ	Ψ
32	Zinfandel Drive & Woodring Drive	Two-way stop	Two-way stop	↰	↲	˅		↰↑	↲	˅	
33	Bradshaw Road & Folsom Blvd.	Signal	Signal	↰↰↑↱	↲↓↓↳	↰↑↑↱	↰↰↑↑↱	↰↰↑↱	↲↓↓↳	↰↑↑↱	↰↰↑↑↱
34	Bradshaw Road & US 50 WB Ramps	Signal	Signal	↑↑↑↱	↲↓↓↓		↰↰↱↱	↑↑↑↱	↲↓↓↓		↰↰↱↱
35	Bradshaw Road & US 50 EB Ramps	Signal	Signal	↑↑↑↱	↲↓↓↓	↰↰↱↱		↑↑↑↱	↲↓↓↓	↰↰↱↱	
36	Bradshaw Road & Old Placerville Road	Signal	Signal	↰↑↑↑↱	⅄↓↓↳↳	↰↱	↰↰↑↱	↰↑↑↑↱	⅄↓↓↳↳	↰↱	↰↰↑↱
37	Bradshaw Road & Kiefer Boulevard	Signal	Signal	↰↰↑↑↑↱	↲↓↓↳↳	↰↰↑↑↱	↰↰↑↑↱	↰↰↑↑↑↱	↲↓↓↳↳	↰↰↑↑↱	↰↰↑↑↱
38	Bradshaw Road & Jackson Road	Signal	Signal	↰↑↱	↲↓↓↳	↰↑↱	↰↑↱	↰↑↱	↲↓↓↳	↰↑↱	↰↑↱
39	Bradshaw Road & Elder Creek Road	Signal	Signal	↰↑↱	⅄↓↳	↰↰↱	↰↰↱	↰↑↱	⅄↓↳	↰↰↱	↰↰↱
40	Bradshaw Road & Florin Road	Signal	Signal	↰↑↱	⅄↓↳	↰↰↱	↰↰↱	↰↑↱	⅄↓↳	↰↰↱	↰↰↱
41	Bradshaw Road & Gerber Road	Signal	Signal	↰↑↱	⅄↓↳	↰↰↱	↰↱	↰↑↱	⅄↓↳	↰↰↱	↰↱
42	Happy Lane & Old Placerville Road	Two-way stop	Two-way stop	↰↱		↑↱	↰↑	↰↱		↑↱	↰↑
45	Excelsior Road & Jackson Road	Signal	Signal	↰↱	⅄	↰↑↑↱	↰↑↑↱	↰↱	⅄	↰↑↑↱	↰↑↑↱
46	Excelsior Road & Elder Creek Road	Two-way stop	Two-way stop	↰	↲↓	˅		↰	↲↓	˅	
47	Excelsior Road & Florin Road	All-way stop	All-way stop	Ψ	⅄	Ψ	Ψ	Ψ	⅄	Ψ	Ψ
48	Excelsior Road & Gerber Road/Birch Ranch Drive	All-way stop	All-way stop	Ψ	⅄	Ψ	Ψ	Ψ	⅄	Ψ	Ψ
49	Mather Field Road & US 50 WB Ramps	Signal	Signal	↑↑↱	↲↓↓		↰Ψ	↑↑↱	↲↓↓		↰Ψ
50	Mather Field Road & US 50 EB Ramps	Signal	Signal	↑↑↑↱	↲↓↓	↰Ψ↱		↑↑↑↱	↲↓↓	↰Ψ↱	
51	Mather Field Road & Rockingham Drive	Signal	Signal	↰↑↑↱	↲↓↓↓↳	↰↰↱	↰↱	↰↑↑↱	↲↓↓↓↳	↰↰↱	↰↱
52	Mather Boulevard & Douglas Road	All-way stop	All-way stop	Ψ	⅄	Ψ	Ψ	Ψ	⅄	Ψ	Ψ
53	Zinfandel Drive & US 50 WB Ramps	Signal	Signal	↑↑↑↱	↲↓↓		↰↰↱	↑↑↑↱	↲↓↓		↰↰↱
54	Zinfandel Drive & US 50 EB Ramps/Gold Center Drive	Signal	Signal	↑↑↑↱	↲↓↓	↰↰↱↱	↱↱	↑↑↑↱	↲↓↓	↰↰↱↱	↱↱
55	Zinfandel Drive & White Rock Road	Signal	Signal	↰↰↑↑↱	↲↓↓↓↳↳	↰↰↑↑↱	↰↰↑↱↱	↰↰↑↑↱	↲↓↓↓↳↳	↰↰↑↑↱	↰↰↑↱↱
56	Zinfandel Drive & Data Drive	Signal	Signal	↰↑↑↱	⅄↓↓↳	↰Ψ	↰↰↱	↰↑↑↱	⅄↓↓↳	↰Ψ	↰↰↱

	Intersection	Traffic Control		Existing Lane Geometrics				Existing Plus Mather South Project Lane Geometrics			
		Existing	Existing Plus Project	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach
57	Zinfandel Drive & International Dr	Signal	Signal	٦٦١١١٢	٤١١٦٦	٦٦١١٢	٦٦١١١٢	٦٦١١١٢	٤١١٦٦	٦٦١١٢	٦٦١١١٢
58	Zinfandel Drive & Douglas Road	Signal	Signal	٦٢	٢١٦٦	٦١٢	٦١٢	٦٢	٢١٦٦	٦١٢	٦١٢
59	Eagles Nest Road/Zinfandel Drive & Kiefer Boulevard		Signal	٢			٦	١٢	١٦		٦٢
60	Eagles Nest Road & Jackson Road	Two-way stop	Two-way stop	⚜	⚜	٦٢	٦٢	⚜	⚜	٦٢	٦٢
61	Eagles Nest Road & Florin Road	Two-way stop	Two-way stop	⚜	⚜	⚜	⚜	⚜	⚜	⚜	⚜
62	Sunrise Boulevard & US 50 WB Ramps	Signal	Signal	١١١٢	٢١١١		٦٦٢٢	١١١٢	٢١١١		٦٦٢٢
63	Sunrise Boulevard & US 50 EB Ramps	Signal	Signal	١١١١٢	٢١١١	٦٦٦٢٢		١١١١٢	٢١١١	٦٦٦٢٢	
64	Sunrise Boulevard & Folsom Boulevard	Signal	Signal	٦٦١١١١٢	٢١١١٦٦	٦٦١١٢	٦٦١ ٢٢	٦٦١١١١٢	٢١١١٦٦	٦٦١١٢	٦٦١ ٢٢
65	Sunrise Boulevard & White Rock Road	Signal	Signal	٦٦١١١٢	٢١١١٦٦	٦٦١١٢	٦٦١١١٢	٦٦١١١٢	٢١١١٦٦	٦٦١١٢	٦٦١١١٢
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	Signal	٦٦١١٢	٢١١١٦	٦٦١٢٢	٦٢	٦٦١١٢	٢١١١٦	٦٦١٢٢	٦٢
67	Sunrise Boulevard & Douglas Road	Signal	Signal	٦٦١١١٢	٢١١١٦٦	٦٦١٢	٦٦١١٢	٦٦١١١٢	٢١١١٦٦	٦٦١٢	٦٦١١٢
68	Sunrise Boulevard & Chrysanthy Boulevard	Signal	Signal	١١١٢	١١٦٦		٦٦٢	١١١٢	١١٦٦		٦٦٢
69	Sunrise Boulevard & Kiefer Boulevard	Signal	Signal	٦١١٢	٤١٦٦	⚜	٢٢	٦١١٢	٤١٦٦	٦٢	٢٢
70	Sunrise Boulevard & Jackson Road	Signal	Signal	٦٢	٢١٦	٦١٢	٦١٢	٦٢	٢١٦	٦١٢	٦١٢
71	Sunrise Boulevard & Florin Road	Signal	Signal	٦١	٤	٧		٦١	٤	٧	
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	Signal	⚜	٢٨	٦١٢	٦٢	⚜	٢٨	٦١٢	٦٢
73	Hazel Avenue & Tributary Point Drive/US 50 WB Off-ramp	Signal	Signal	٦٦١١١	٢١١١١	٢	٢٢٢	٦٦١١١	٢١١١١	٢	٢٢٢
74	Hazel Avenue & US 50 EB Ramps	Signal	Signal		٢١١	٦٧٢			٢١١	٦٧٢	
75	Hazel Avenue & Folsom Boulevard	Signal	Signal	٦٢	٢٨٦	٦٦١٢	٦١٢	٦٢	٢٨٦	٦٦١٢	٦١٢
76	Prairie City Road & White Rock Road	Signal	Signal		٢٦	٦١١	١١٢		٢٦	٦١١	١١٢
77	Grant Line Road & White Rock Road	Signal	Signal	٦١١	٢١١	٦٦٢		٦١١	٢١١	٦٦٢	
78	Grant Line Road & Douglas Road	Two-way stop	Signal	٦	٤	٧		٦١	٢١	٦٢	
79	Grant Line Road & Kiefer Boulevard	All-way stop	All-way stop	⚜	⚜	⚜	⚜	⚜	⚜	⚜	⚜
80	Grant Line Road & Jackson Road	Signal	Signal	⚜	⚜	٦٢	٦٢	⚜	⚜	٦٢	٦٢
81	Watt Avenue & US-50 EB Ramps	Signal	Signal	١١١١٢	٢٤١١	٦٦٦٢٢		١١١١٢	٢٤١١	٦٦٦٢٢	
82	Watt Avenue & US-50 WB Ramps	Signal	Signal	١١ ٢٢	٢٤١١١		٦٦٦٢٢٢	١١ ٢٢	٢٤١١١		٦٦٦٢٢٢

Intersection		Traffic Control		Existing Lane Geometrics				Existing Plus Mather South Project Lane Geometrics			
		Existing	Existing Plus Project	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach
83	Mayhew Rd & Folsom Blvd.	Signal	Signal	↰↰↱		↑↑↱	↰↑↑	↰↰↱		↑↑↱	↰↑↑
84	65th Street Expy & Fruitridge Road	Signal	Signal	↰↑↑↱	↲↓↓↰	↰↑↑	↰↑↑↱	↰↑↑↱	↲↓↓↰	↰↑↑	↰↑↑↱
85	Power Inn Road & Elder Creek Road	Signal	Signal	↰↑↱	↲↓↰	↰↑↑↱	↰↑↱	↰↑↱	↲↓↰	↰↑↑↱	↰↑↱
86	Power Inn Road & Florin Rd	Signal	Signal	↰↑↱	↲↓↓↰	↰↑↑↱	↰↑↑↱	↰↑↱	↲↓↓↰	↰↑↑↱	↰↑↑↱
87	Florin Perkins Road & Florin Rd	Signal	Signal	↰↑↑↱	↲↓↓↰	↰↑↱	↰↑↱	↰↑↑↱	↲↓↓↰	↰↑↱	↰↑↱
88	Bradshaw Rd & Calvine Rd	Signal	Signal	↰↰↑↱	↲↓↓↰↰	↰↰↑↑↱	↰↰↑↱	↰↰↑↱	↲↓↓↰↰	↰↰↑↑↱	↰↰↑↱
89	Vineyard Rd & Calvine Rd	Signal	Signal	↟	↲↗↰	↰↑↱	↰↑↱	↟	↲↗↰	↰↑↱	↰↑↱
90	Excelsior Road & Calvine Rd	All-way stop	All-way stop	↟	↟	↟	↟	↟	↟	↟	↟
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	Signal	Signal	↰↑↱	↟	↟	↰↱	↰↑↱	↟	↟	↰↱
92	Grant Line Rd & Calvine Rd	Signal	Signal	↰↑	↲	↾		↰↑	↲	↾	
93	Grant Line Rd & Dwy/Wilton Rd	Signal	Signal	↰↱	↟	↰↱	↰↱	↰↱	↟	↰↱	↰↱
94	Grant Line Rd & Bond Rd/Wrangler Dr	Signal	Signal	↰↱	↲↓↰	↰↱	↟	↰↱	↲↓↰	↰↱	↟
202	W Collector MS-1 & Kiefer Boulevard		Signal						↾↰	↰↑	↑↱
204	E Collector MS-5 & Kiefer Boulevard		Signal						↾↰	↰↑	↑↑↱
600	Zinfandel Drive & Collector MS-2		Roundabout					↱	↱		↾
601	Zinfandel Drive & Collector MS-3		Roundabout					↱	↱		↾
602	Zinfandel Drive & Collector MS-4		Roundabout					↱	↱		↾
603	Collector MS-5 & Collector MS-2		Two-way stop					↰	↲	↾	
604	Collector MS-5 & Collector MS-3		Two-way stop					↰	↲	↾	
605	Collector MS-5 & Collector MS-4		Two-way stop					↰	↲	↾	
606	Collector MS-5 & W Collector MS-1/E Collector MS-1		Two-way stop					↰↑	↲↓	↾↱	

Note: Gray shading represents changes in traffic control or approach lanes that the project is responsible to provide.

1. Reflects 2017 Intersection Improvements.

Source: DKS Associates 2018

TRANSIT IMPROVEMENTS

The transit provider for the area, SacRT, has developed a long-range transit plan that anticipates three additional high frequency transit lines in the general area by the year 2035.

To comply with the County's General Plan Policy LU-120, a separate planning effort involving staff from Sacramento County, SacRT, DKS Associates, and the applicants of the Jackson Corridor projects was conducted to define an appropriate transit network and frequency that could serve the proposed development in the Jackson Corridor consistent with the intent of the County's policies.

An important consideration in the development of a transit network for the Jackson Corridor is that there are four major development projects proposed in the Jackson Corridor (Jackson Corridor Projects). The transit planning effort included the development of standalone transit systems for each of the Jackson Corridor Projects that would not only serve the transit needs of each of the projects independently, but would also serve as cohesive and complementary transit system units that could operate efficiently together should more than one of the Jackson Corridor Projects be approved for development.

A series of transit networks and service frequencies were developed and tested using the SACSIM model with the objective of optimizing transit ridership and the number of boardings. Utilizing SacRT's performance criteria for evaluating the effectiveness of the various transit lines and service frequencies, an optimum transit network and frequency was developed for the Jackson Corridor.

The planning effort resulted in four transit lines that would serve the Jackson Corridor Projects at a frequency of 15 minutes during the peak commute hours (approximately 6:00 a.m.–9:00 a.m. and 3:00 p.m.–6:00 p.m.) and 30 minutes during off-peak service hours (approximately 9:00 a.m.–3 p.m. and 6:00 p.m.–8:00 p.m.) on weekdays. Plate TR-11 illustrates the proposed transit system for the Mather South Project, which represents a portion of the ultimate transit system that would serve the Jackson Corridor Projects. The combined transit system for the Jackson Corridor Projects is discussed and illustrated in the Cumulative section of the Transportation and Circulation chapter of this EIR.

The proposed transit system for the Mather South Project has been assumed as an attribute of the project and has been included in the traffic modeling documented in the Traffic Study. Implementation of the proposed transit system would be included as a condition of approval and/or in the development agreement for the project and would specify phasing of the transit service over time. The proposed transit system would be funded by the applicant through the project Public Facilities Financing Plan and/or Urban Services Plan. Thus, the assumed transit routes and service frequency detailed above would be required at full development of the Mather South Project. Additionally, the ultimate transit service, like the roadway system serving the Mather South Project would be phased with development of the Mather South Project. The project applicant

shall coordinate with the SacDOT regarding implementation of proposed transit system identified as a project condition of approval to ensure timely implementation.

Pedestrian and Bicycle Facility Improvements

Plate TR-12 illustrates the proposed bikeway network and plan for the Mather South Project. The roadways within the Mather South Project would be designed to meet County standards, which would require the provision of sidewalks and on-street (Class II) bike lanes on all collector, arterial, and thoroughfare roadways. The Mather South Project also provides several off-street (Class I) multi-purpose trails.

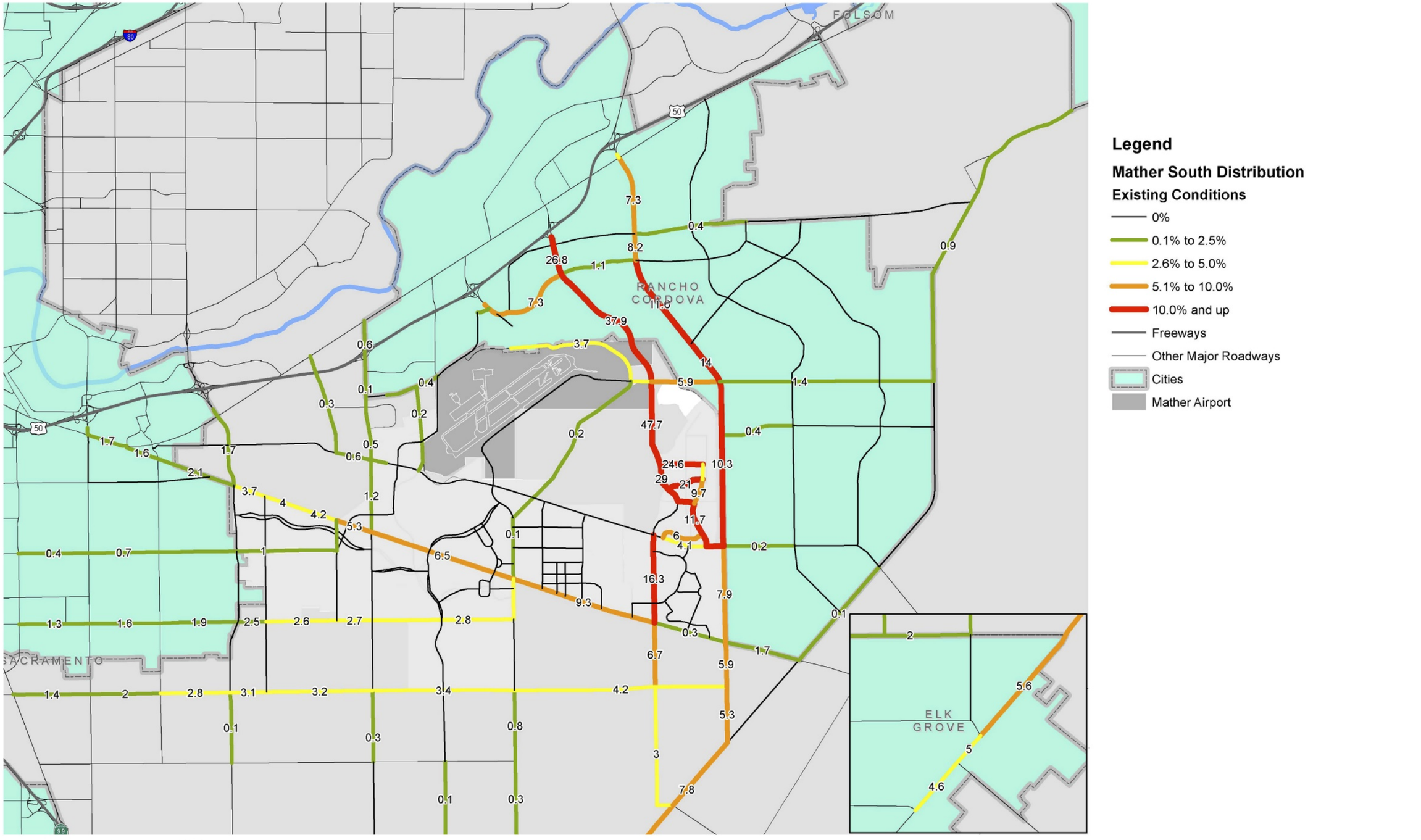
Forecasting

The forecasting of travel patterns and volumes for each of the scenarios analyzed within this EIR were developed through utilization of the SACOG's SACSIM travel model. SACSIM is an activity-based model that tracks the travel of individuals throughout the day in trip tours and allocates household and employment to the parcel level. This allows the model to capture smaller-scale land use changes and differences. SACSIM is sensitive to the local physical environment, including the presence (or absence) of pedestrian and bicycle facilities, the patterns of local street networks (e.g., grid vs. cul-de-sacs), and the density, proximity, and mix of surrounding land uses (i.e., employment destinations, schools, retail, parks, etc.). SACSIM also forecasts automobile, transit, bicycle, and walk trips. SACSIM requires the input of detailed definition of household population/demographics and employment by type at a parcel-level of geography. During the analysis, SACOG staff assisted in developing household population and demographics within the traffic study area and was consulted to ensure consistency with the latest and most appropriate modeling procedures and databases

Development of Mitigation Measures

This transportation analysis includes the development of mitigation measures for those impacts that have been determined to exceed the applicable LOS thresholds. While most impacts could theoretically be mitigated by adding more traffic lanes, grade separations, new roadways, and other similar measures; such mitigation may not be consistent with adopted policies and could result in secondary impacts to the environment and other users.

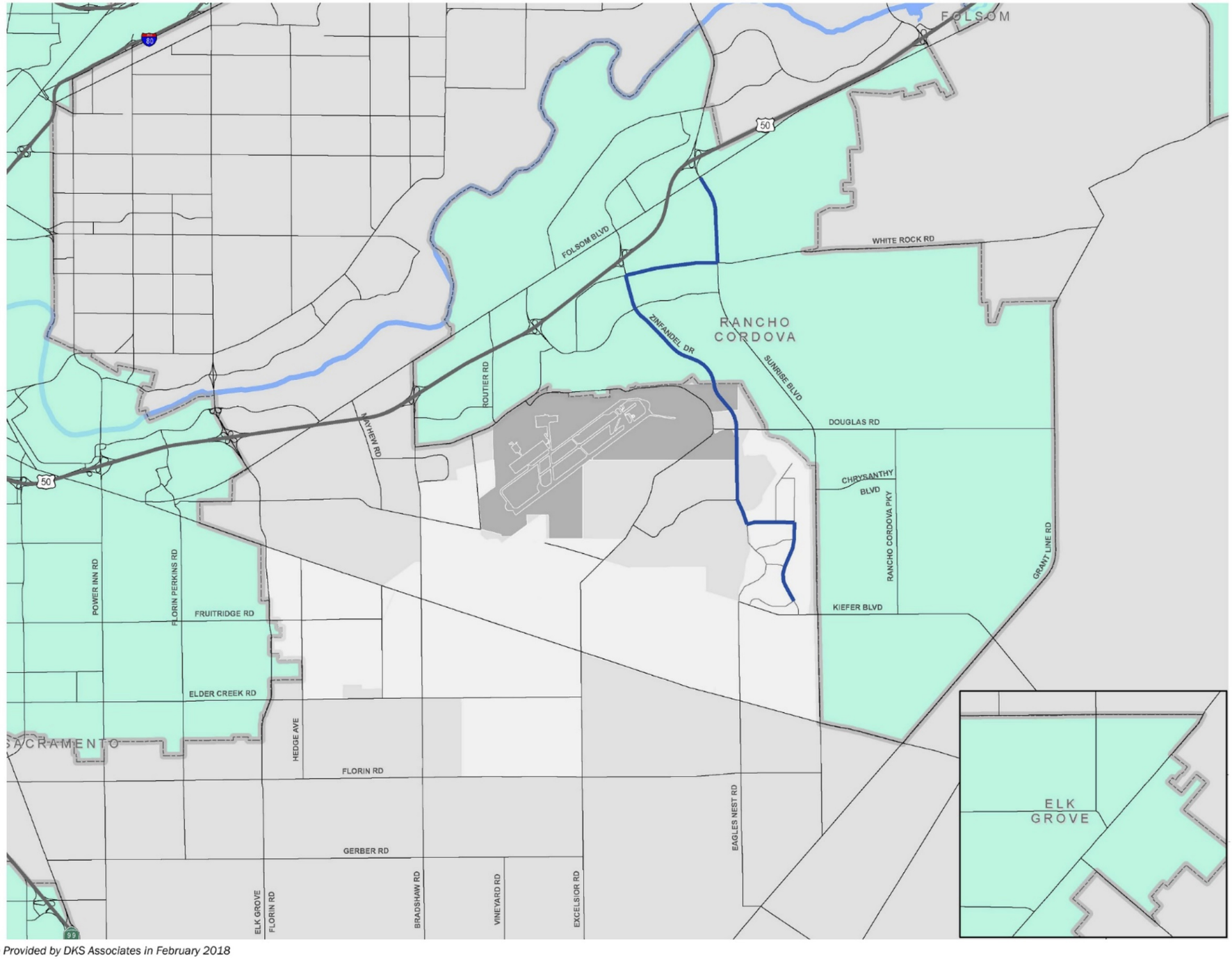
The Sacramento County General Plan Circulation Element provides guidance regarding the development of mitigation measures. In particular, the Circulation Element specifies the maximum number of through lanes for major County roadways. The General Plans of the other jurisdictions in the study area provide similar guidance. In general, for those impacts that exceed the LOS policies, mitigation measures have been developed for the widening of roadway segments to accommodate additional travel lanes up to the maximum number of lanes designated in the general plans.



Source: Image Provided by DKS Associates in February 2018

X15010101 08 021

Plate TR-10: Existing Plus Mather South Project Trip Distribution



Source: Image Provided by DKS Associates in February 2018

X15010101 08 020

Plate TR-11: Mather South Project Transit Network

ASCENT ENVIRONMENTAL

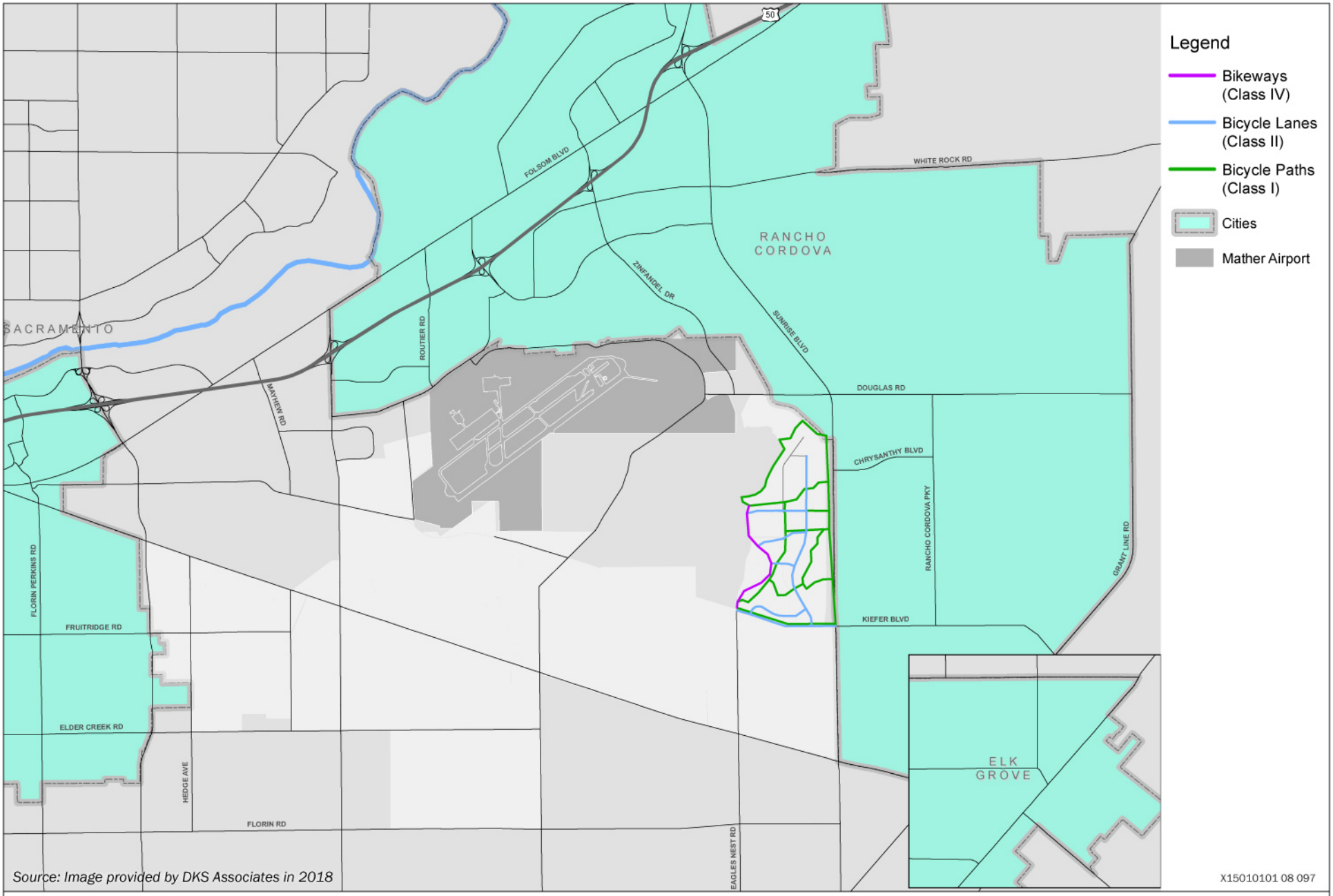


Plate TR-12: Mather South Project Bicycle Network

The County and other jurisdictions have typical intersection cross-sections. In general, on each approach to an intersection on a four-lane or six-lane roadway, the typical cross-section includes two left-turn lanes, the appropriate number of through lanes (two or three), and a single right-turn lane. Exceptions to the typical intersection geometry would be considered on a case-by-case basis and in special circumstances. Mitigation measures that exceed the typical intersection geometry would be noted as so.

In the development of mitigation measures, the number of roadway segment lanes and intersection lanes has been expanded, where appropriate, to reduce impacts. In most cases, the mitigation measure does not exceed the maximum number of roadway lanes or typical intersection geometry identified in the General Plans. In some cases, mitigation measures consistent with the General Plan and the typical intersection geometry may not reduce the impact consistent with the LOS policies. In these cases, an alternative mitigation measure may be considered that may necessitate an amendment to the County's General Plan or deviate from the typical intersection geometry. In other cases where the roadway is already constructed to the full General Plan designation or an intersection is already constructed to the standard intersection geometry and no alternative mitigation measure is feasible, no mitigation measure may be available to reduce the impacts.

VMT Analysis

SB 743, passed in 2013, requires OPR and the State Natural Resources Agency to develop new CEQA guidelines that address transportation impacts under CEQA. As stated in the legislation, upon adoption of the new guidelines, "automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the guidelines, if any." OPR and the State Natural Resources Agency has submitted updated CEQA Guidelines to the Office of Administrative Law for final approval to implement SB 743. The guidelines indicate that VMT would be the primary metric used to identify transportation impacts. However, these guidelines have yet to formally adopted and local agencies will have an opt-in period until July 1, 2020 to implement the updated guidelines once adopted. This section describes the VMT analysis that was prepared for the project under Existing Plus Project conditions.

METHODOLOGY

The analysis presented in this section was prepared using a methodology that is consistent with the methodology adopted by SACOG to determine regional thresholds and regional VMT per capita. Because SACOG's adopted model (SacSIM) is a "tour based" Activity Based Model it has the ability to trace every daily trip undertaken by each member of each household, whether each trip originates or terminates at the person's home or elsewhere. Therefore, the total distance traveled by each person during the day and the mode used for each trip can also be traced. This allows SACOG (and this analysis) to calculate detailed VMT per capita for all trips undertaken by residents of the region or a specific study or project area. This VMT, combined with

VMT of trips for non-residential uses within the study or project area, results in overall VMT (and VMT per capita) generated by the study or project area, respectively.

EXISTING PLUS PROJECT VMT PER CAPITA

Table TR-16 shows the estimated VMT per capita under Existing Plus Mather South conditions.

Table TR-16: Estimated VMT per Capita

Scenario	Population	VMT	VMT/Capita
Existing plus Mather South			
Mather South	8,703	190,627	21.9
Remainder of Regional	2,214,577	Varies	18.5
Total Region	Varies	Varies	18.6

As shown in Table TR-16, over 8,700 people are anticipated to generate over 190,600 VMT per day. That equates to an average of 21.9 VMT per capita per day, higher than the predicted 18.6 VMT per capita average for the region as a whole.

ISSUES NOT DISCUSSED FURTHER

Impacts associated with the proximity of Mather Airport to the Mather South project area are analyzed within Chapter 5, “Airport Compatibility,” and this issue is not discussed further in this section.

SIGNIFICANCE CRITERIA

This analysis uses significance criteria based on the applicable policies contained in the general plans for Sacramento County, City of Sacramento, City of Rancho Cordova, City of Elk Grove, and City of Folsom. The significance criteria also consider Caltrans standards and criteria, professional judgment, and example criteria provided in the CEQA Guidelines Appendix G. These criteria are used to assess project-specific effects as well as the evaluation of cumulative impacts.

The Mather South Project would result in a significant impact related to transportation and circulation if the significance criteria summarize below would be exceeded.

ROADWAYS SEGMENT AND INTERSECTION OPERATIONS IMPACTS

Table TR-17 summarizes the significance criteria for intersections and roadway segments for Sacramento County, the City of Sacramento, the City of Rancho Cordova, the City of Elk Grove, and the City of Folsom.

Table TR-17: Level of Service Standards and Thresholds of Significance

Jurisdiction	Area	LOS Policy	Thresholds of Significance			Notes
			Specialized Intersection	Unsignalized Intersection	Roadway Segment	
County of Sacramento	Inside Urban Service Boundary	E	> 5 seconds (intersection average)	> 5 seconds (movement/approach) and meet traffic signal warrant	> .05 V/C	
	Outside Urban Service Boundary	D				
City of Sacramento	Base	D	≥ 5 seconds (intersection average)		≥ .02 V/C	Deficient LOS may be accepted provided provisions are made to improve the overall system and/or promote non-vehicular transportation
	Exempt Areas	E/F				
City of Elk Grove	All	D	≥ 5 seconds (intersection average)		≥ .05 V/C	
City of Folsom	Base	C	≥ 5 seconds (intersection average)		Not Applicable	
	South of US 50 Specific Plan	D				
City of Rancho Cordova	All	D	> 5 seconds (intersection average)	> 5 seconds (movement/approach) and meet traffic signal warrant	> .05 V/C	
Connector JPA	Base	C	> 5 seconds (intersection average)	N/A	≥ .05 V/C	Roadway segments above capacity should be grade separated
	Sheldon	D		N/A	≥ .05 V/C	Roadway segments above capacity should be grade separated, unless both intersections operate acceptably
Notes: V/C = volume to capacity						

FREEWAY FACILITY IMPACTS

Impacts to freeway facilities are considered significant if the Mather South Project would result in:

- Off-ramps with vehicle queues that extend into the ramp's deceleration area or onto the freeway; or
- Project traffic increases that cause any ramp's merge / diverge LOS to be worse than the freeway's LOS; or

- Project traffic increases that cause the freeway LOS to deteriorate beyond LOS threshold defined in the Caltrans Route Concept Report for the facility; or
- The expected ramp queue to be greater than the storage capacity; or
- Project traffic increases that cause state highway system main line freeway segments operating at or below the Concept LOS, to directly or cumulatively lower the existing LOS and/or increase the volume-to-capacity (V/C) ratio now or in the future on the identified highway segments by 5 percent or greater.

BICYCLE AND PEDESTRIAN FACILITY IMPACTS

Impacts to bicycle and pedestrian facilities are considered significant if the Mather South Project would:

- Eliminate or adversely affect an existing bikeway or pedestrian facility in a way that would discourage its use;
- Interfere with the implementation of a planned bikeway as shown in the SCBMP, or be in conflict with the SCPMP; or
- Result in unsafe conditions for bicyclists or pedestrians.

TRANSIT FACILITY IMPACTS

Impacts to the transit system are considered significant if the Mather South Project would:

- Adversely affect public transit operations; or
- Fail to adequately provide access to transit.

RURAL ROADWAY FUNCTIONALITY IMPACTS

Impacts to rural roadway functionality are considered significant if the Mather South Project would:

- Cause the substandard rural roadway to exceed an average daily traffic volume of 6,000 daily vehicles; or
- Add 600 or more new daily vehicle trips to a substandard rural roadway that already carries 6,000 or more daily vehicles.

EMERGENCY ACCESS AND TRANSPORTATION HAZARDS

Impacts to emergency access are considered significant if the Mather South Project would:

- Result in inadequate emergency access.

Transportation hazards are considered significant if the Mather South Project would:

- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

IMPACTS AND ANALYSIS

2016 MATHER FIELD PROJECT EIR IMPACTS DETERMINATION

The Mather Field Project EIR evaluated impacts related to traffic and circulation from implementation of the Mather Field Project which consisted of a realignment of Zinfandel Drive and trunk extension, creation of the Mather Preserve and the establishment of an Urban Development Area designation for the Mather South Plan Area.

The EIR concluded less-than-significant traffic impacts related to the change in land use because prior EIRs require preparation of traffic management plans with new development, less-than-significant impacts related to the realignment of Zinfandel Drive and trunk extension, and less-than-significant impacts related to changes to the Mather Field Specific Plan to adopt conceptual development of the Mather South project. The discussion of impacts can be found on pages 12-4 through 12-10 of the Mather Field Project EIR and is hereby incorporated by reference.

JACKSON HIGHWAY CORRIDOR TRANSPORTATION MITIGATION STRATEGY

The Sacramento County General Plan Policy CI-9 establishes a LOS to define an acceptable threshold for capacity and operational impacts for urban roadways and intersections, LOS E. The County generally recommends that a development project is fully responsible for mitigating roadway and intersection impacts identified in the project's environmental document. Therefore, the General Plan policy establishes a specific LOS threshold and if a project's vehicle trips exceed that threshold, the project would be responsible for fully funding the improvements to construct additional roadway capacity to accommodate the project's travel demand. This approach does not account for development that has contributed to or led up to reaching the threshold. Rather, this approach assigns responsibility to the project that ultimately "triggers" the impact. This "you break it, you fix it" policy often leads to a disproportionate obligation on some development projects to fund and implement transportation improvements. As an extreme example, a development project that results in a travel demand that is under the LOS threshold by a single vehicle trip would not be responsible for an impact and no improvements would be required to be implemented. Conversely, a development project that exceeds the LOS threshold by a single vehicle trip would be responsible for an impact and required to wholly fund and construct roadway capacity improvements that would result in an acceptable LOS. The past practice has been to require projects to fully fund or construct 100 percent of the mitigation identified in the Existing Plus Project scenario. In a scenario where, multiple large master plans are geographically adjacent, substantial overlap exists for the responsibility of roadway improvements. As an example, each individual master plan may have the same responsibility to construct a single roadway improvement. Each individual master plan's Public Facilities Financing Plan would need to collect the necessary funding for 100 percent of the cost of that roadway. This results in higher transportation impact fees than may be necessary and may render some project potentially economically infeasible.

The SacDOT has developed an alternative approach to mitigating improvements required for the Jackson Corridor projects because of their adjacency and interrelated long-term operation. As mentioned previously, the Joint TIS considered the transportation impacts of the four Jackson Corridor projects combined with the cumulative impacts of previously approved and reasonably foreseeable projects. The analysis identified each project's fair share component of the travel demand on each study roadway segment and intersection at buildout. Instead of assigning full responsibility for improvements to only those projects that happen to exceed the LOS threshold at a specific moment in time, and no responsibility to projects that would utilize the existing capacity of a roadway, but not exceed the LOS threshold, each project would be financially responsible for their fair share portion (based on the total trips contributed to the roadways) of the improvements to the transportation infrastructure need to support all proposed Jackson Corridor projects. This alternative approach provides a mechanism to equally assign mitigation responsibility to all of the Jackson Corridor projects and neither penalizes nor rewards the first/last project that may receive approval.

DYNAMIC IMPLEMENTATION TOOL

The County has strived to ensure that the investments in transportation infrastructure keep pace with land use development growth. In past years, the County has instituted improvement triggers associated with a specific number of dwelling units that are approved for development. While this has been effective on smaller scale developments, it does not always dictate the appropriate timing and location of improvements to be constructed within large specific plan projects. The County has developed a new approach to identify and require the construction of the necessary transportation improvements that is more sensitive to the actual location of the development. With the new approach, the County is able to ensure efficient use of transportation funds collected to support the development of transportation improvements within development boundaries of the Jackson Corridor projects.

The result of this new approach was the development of the Dynamic Implementation Tool (Tool). For any interim amount of development that is approved in the Jackson Corridor, the Tool is capable of estimating the vehicle trips that would be generated, where those new vehicle trips would be distributed, and it can assess if the addition of those new vehicle trips causes any roadway segments or intersections to operate at an unacceptable LOS. Through use of the Tool, the SacDOT will be able to monitor and manage the transportation network proactively and will be able to assign improvements to roadways and intersections in support of where the growth in vehicle trips actually occurs in the Jackson Corridor. The Tool will assist the County in determining the most appropriate improvements and assign funding or construction responsibility as development proceeds over multiple decades.

The Tool is based on and is consistent with the traffic modelling conducted for the Joint TIS. While the traffic study determined the transportation impacts of full build out of the Mather South Project proposed land uses that would occur over multiple decades, the County wanted to better understand incremental impacts to the transportation network that would occur as specific tentative maps are approved concurrently or in sequence

for each of the Jackson Corridor projects. To accomplish this, the proposed land uses for the Jackson Corridor projects were subdivided into a network of smaller districts. Each district's size and location were developed such that the trip generating land uses within each district have the same trip distribution. In all, there are 64 districts within the Jackson Corridor project areas, each with varying mixes of residential, employment, and commercial land uses. The traffic modelling for the Joint TIS tracked the trip generation and trip distribution associated with each district. With this information, the specific transportation impacts of any amount of interim land use development can be determined.

The complete master list of transportation improvements has been identified in the Joint TIS' cumulative impact analysis. Cost estimates for the engineering and construction of the improvements have been completed, and each project's fair share has been calculated. The project-specific fair shares define a total funding responsibility for each project based on the Cumulative Plus Project scenario.

The transportation construction priorities for the Jackson Corridor area are determined based on the Tool and the best available information at the time this Draft EIR was prepared. The recommended project-specific list of improvements would be constructed by each project proponent and/or constructed by the County with traffic impact fees collected from the project(s) and other available funding sources. The improvements recommended for the project represent the current snapshot in time based on today's development conditions and may change over time as the location and amount of development in the Jackson Corridor areas progresses. For example, if an improvement on an individual project's list has already been constructed by the time that project is moving forward with development, another improvement or improvements of equal value would be identified and assigned to the project. At each phase of development, County staff would define the transportation improvements and timing of their construction for the current phase of development based on the methodology described above.

FINANCING MECHANISMS TO IMPLEMENT MITIGATION REQUIREMENTS

Each of the Jackson Corridor Projects has a financial obligation to fund the cost of each of the improvements based on each project's fair share utilization of the improvement. The summation of each project's fair share costs for all the improvements establishes the total funding obligation for each of the four Jackson Corridor projects in mitigating the project's impact to the transportation network. Each project's cost summation is composed of hundreds of partial fair share funding components but does not require full funding of any particular improvement. In order to fully fund and implement Improvements to support the incremental development of each project and to address capacity and operational issues on the network, 80 percent of each project's funding obligation is intended to fully fund and construct a subset of the most needed improvements identified with each phase of development as outlined above. The remaining 20 percent of the funds are to be collected by the County and set aside to address unforeseen capacity and operational issues on other improvements on the master list of the transportation improvements at the SacDOT's discretion.

Each project's specific transportation improvements would be developed based on the proposed land use plans and phasing information at the time of the first environmental review (e.g., this Draft EIR). Each project's Public Facilities Financing Plan must include financing mechanisms to ensure that the identified transportation infrastructure financial obligation is funded consistent with the mitigation strategy over the project's long-term buildout. In addition, the Sacramento County Transportation Development Fee (SCTDF) Program and other transportation infrastructure funding programs such as Measure A sales tax revenues and State and federal funding programs may also help offset the costs for improvements.

In 1988, the County enacted the SCTDF program for new residential, commercial, and industrial development. The SCTDF funds improvements to major roadway, transit, bicycle and pedestrian facilities needed to accommodate travel demand generated by new development. It includes six districts encompassing the entire unincorporated area, each with its own fee schedule. An update to the SCTDF is currently in process at the time of this writing.

In 2004, Sacramento County voters approved a 30-year extension to the Measure A transportation sales tax. In addition to the sales tax extension, voters adopted the Sacramento Countywide Transportation Mitigation Fee (SCTMF) which establishes a uniform development fee to be collected on new building permits. SCTMF fees are updated annually.

If approved, the Jackson Corridor projects would not likely begin development at the same time or develop to full buildout at the same pace. Initiation of individual developments and full buildout are subject to each project's financial constraints and market conditions. Therefore, it cannot be determined with certainty when specific roadway improvements will be made at this time.

MATHER SOUTH PROJECT IMPACTS DETERMINATION

IMPACT: IMPACTS TO ROADWAY SEGMENT OPERATIONS

Table TR-18 summarizes the results of the operations analysis for the traffic study area roadway segments. The table includes the number of lanes assumed with the implementation of the Mather South Project, which in many cases is greater than the number of lanes in the existing condition. Detailed roadway segment operations calculations and the full list of study area roadway segment operating conditions are included in Appendix TR-1.

As stated above, the traffic analysis assumed that the Mather South Project would construct travel lanes on roadway segments that are internal to or on the boundary of the Mather South project, which would be greater than the number of lanes in the existing condition. This is a required condition of approval for all the Jackson Corridor projects. The construction of the additional traffic lanes on these internal or boundary roadway segments would affect whether impacts would exist at some point before full build out of the Mather South Project. The timing of buildout of each of the Jackson

Corridor projects is anticipated to have interrelated effects on the timing of traffic improvements required by other nearby projects. For example, Kiefer Boulevard is a two-lane boundary roadway that would serve both the Mather South Project and the adjacent NewBridge Specific Plan project. It is possible that the NewBridge project applicants may widen Kiefer Boulevard along the shared boundary before development of the Mather South Project. In this scenario, development of the Mather South Project may not result in an impact on the widened segment of Kiefer Boulevard. The analysis provided in the Joint TIS provides a static picture of project-related impacts based on the baseline and cumulative assumptions used in the traffic model. In reality, the development of a community is dynamic with multiple projects occurring simultaneously to create and mitigate impacts. Ultimately, multiple projects may need to contribute to the same improvement to resolve their individual project-related impacts. To provide consistency in the assumptions of development and the analysis of impacts, the County has required all Jackson Corridor projects to construct additional travel lanes on internal and border travel roads. Considering this consistent development assumption, as shown in Table TR-18, the addition of vehicle trips generated by project buildout would result in the exceedance of applicable LOS and V/C thresholds along six roadway segments. This impact would be significant.

MITIGATION MEASURES

TR-1: Jackson Corridor Transportation Mitigation Strategy Participation

The project applicants shall participate in the implementation of the Jackson Corridor Transportation Mitigation Strategy **as adopted by the Board of Supervisors on July 23, 2019** by constructing or providing funding for its fair share of transportation improvements identified in the master list of cumulative improvements **(see Appendix TR-1)**. The applicants shall enter into an agreement at the time of project approval to use the Dynamic Implementation Tool (Tool) to identify improvements for each phase of the project. The applicant shall also agree that required improvements will be constructed concurrent with each ~~phase~~ **development increment**. ~~For projects or phases with less than 50 dwelling unit equivalents (DUEs), at the discretion of the Director of the SacDOT, specific improvements may not be required to be constructed, but instead collected fair-share mitigation revenue shall be allowed to accrue in the mitigation budget that the County would manage to address unforeseen capacity and operations issues. For projects or phases with 50 DUEs or more, the project applicant may have the option to advance fund mitigation improvements for each phase of development or portions thereof, as identified by the Tool. Advanced funding could be provided through the creation of a Community Facilities District or similar financial mechanism, through a cash contribution upfront, and/or through the construction of the required improvements.~~

TR-2: Use of Dynamic Implementation Tool

The applicant ~~shall~~ at the time of project approval shall ~~enter into an agreement acknowledging~~ **acknowledge** that the project-specific list of improvements specified in Mitigation Measure TR-1 may be modified over time through the use

of the Tool at each phase of project development, subject to the approval of the SacDOT.

As development proceeds, the Tool will be used to select which improvements the project would be required to fair-share fund and/or construct ~~if its previously assigned improvement or improvements have already been constructed by another project.~~ **as described in the Jackson Corridor Transportation Mitigation Strategy adopted by the Board of Supervisors on July 23, 2019**.

~~**TR-3:**~~ Roadway Segment Mitigation

The project applicant shall implement Mitigation Measures TR-1 and TR-2.

~~The project applicant shall implement the set of improvements assigned to the project by the Tool (Mitigation Measure TR-1) as identified in Table TR-19. Detailed intersection operations calculations and the full list of study area intersection operating conditions are included in Appendix TR-1. Where feasible, the number of roadway lanes was increased to mitigate the impact. However, the roadways cannot be widened such that they exceed the maximum General Plan standards and designations of the appropriate jurisdictions. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate roadways widened as part of mitigation, which would be the responsibility of the Mather South project to implement. The shaded table cells under the "Level of Service" heading indicate those locations that would continue exceed applicable LOS standards after mitigation. The "LOS Impact with Mitigation" column shows whether a mitigation measure successfully mitigates the impact or not~~.

Table TR-18: Existing Plus Mather South Roadway Segment Operations

ID	Roadway	Segment		Existing					Existing + Mather South Project				
		From	To	Travel Lanes	Facility Type	Daily Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type	Forecasted Volume	Volume/ Capacity Ratio	Level of Service
55.2	Grant Line Rd	Elk Grove City Limit	Sheldon Road	2	Rural S	13,140	.66	E	2	Rural S	14,750	.74	**E**
56	Grant Line Rd	Sheldon Rd	Wilton Road	2	Rural S	17,459	.87	E	2	Rural S	18,640	.93	**E**
73	Jackson Rd	Sunrise Blvd.	Grant Line Rd	2	Rural Hwy	13,306	.58	D	2	Rural Hwy	13,610	.59	**E**
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	2	Arterial M	16,894	.94	E	2	Arterial M	18,540	1.03	**F**
118	Zinfandel Dr	US 50	White Rock Rd	7	Arterial M	45,228	.84	D	7	Arterial M	51,390	.95	**E**
122	Zinfandel Dr	City Limit	Douglas Blvd	2	Arterial M	7,595	.42	A	2	Arterial M	18,860	1.05	**F**

Source: DKS Associates 2018

Implementation of Mitigation Measures TR-1~~,~~ **and** TR-2~~, and TR-3~~ would result in fair share payments toward improvements that would reduce the roadway segment impacts of the Mather South Project. Five of the six roadway segments would operate acceptably with implementation of mitigation. Mitigation would generally involve improvements within the alignment or widening of the roadway. The programmatic impacts of constructing these improvements have been evaluated within the scope of the technical sections of this Draft EIR. However, as shown in Table TR-19, because the roadway segment of Zinfandel Drive from US 50 to White Rock Road has reached the maximum number of lanes allowed under the General Plan, there is no additional feasible mitigation to improve the LOS along this roadway segment to an acceptable level.

Further, while implementation of Mitigation Measures TR-1~~,~~ **and** TR-2~~, and TR-3~~ would result in fair share payment toward improvements that would reduce impacts to 5 roadway segments to a less-than-significant level, it cannot be guaranteed that all of these improvements would be implemented concurrent with the phasing of development because of the dynamic and interrelated nature of mitigation improvements that would serve multiple development projects. If all improvements were implemented in a timely way, all but one roadway segment impact would be reduced to a less-than-significant level. However, because the timing of implementation of all required improvements cannot be guaranteed and their implementation is not subject to the responsibility of just Mather South applicants and the County, it cannot be guaranteed that significant impacts to roadway segments would be reduced to a less-than-significant at the time of phased development. Therefore, this impact is concluded to be **significant and unavoidable**.

Table TR-19: Existing Plus Mather South Roadway Segment Operations with Mitigation

ID	Roadway	Segment		Existing +Mather South Project					Existing + Mather South Project (Mitigated)						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	LOS	Travel Lanes	Facility Type[1]	Volume/ Capacity Ratio	LOS	LOS Impact with Mitigation	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
55.1	Grant Line Rd	Calvine Rd	Elk Grove City Limit	2	Rural S	14,750	0.74	E	4	Arterial M	0.41	A	No		
55.2	Grant Line Rd	Elk Grove City Limit	Sheldon Rd	2	Rural S	14,740	0.74	E	4	Arterial M	0.41	A	No		
56	Grant Line Rd	Sheldon Rd	Wilton Rd	2	Rural S	18,640	0.93	E	4	Arterial M	0.52	A	No		
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	2	Rural Hwy	13,610	0.59	E	4	Arterial M	0.38	A	No		
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	2	Arterial M	18,540	1.03	F	4	Arterial M	0.52	A	No		
118	Zinfandel Dr	US 50	White Rock Rd	7	Arterial M	51,540	0.95	E	7	Arterial M	0.95	E	Yes		Maximum General Plan Lanes
122	Zinfandel Dr	City Limit	Douglas Rd	2	Arterial M	18,860	1.05	F	4	Arterial M	0.52	A	No		

Note: Gray shading represents changes in travel lanes or facility type that the project is responsible to provide.
[1] The following classifications are used to determine daily roadway capacity:
Arterial L - Arterial, Low Access Control
Arterial M - Arterial, Moderate Access Control
Arterial H - Arterial, High Access Control
Rural Hwy - Rural 2-lane Highway
Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders
Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders
Res Collector F - Residential Collector with Frontage
Res Collector NF - Residential Collector with No Frontage
[2] Alternative mitigations represent proposed mitigations beyond the General Plan, as proposed by the County of Sacramento.
Source: DKS Associates 2018

IMPACT: IMPACTS TO INTERSECTION OPERATIONS

Tables TR-20 summarizes the results of the operations analysis for intersections within the traffic study area. Detailed intersection operations calculations and the full list of study area intersection operating conditions are included in Appendix TR-1.

As stated above, the traffic analysis assumed that the Mather South Project would construct several improvements to intersections internal to, or on the boundary of the Mather South Project. The timing of implementation of such intersection improvements will affect whether or not impacts would exist at some time before full build out of the Mather South Project.

Signal warrant analysis was also conducted for all unsignalized intersections along Jackson Road, and other unsignalized intersections near the project. Detailed signal warrant calculation sheets are included in Appendix TR-1.

With implementation of the Mather South Project, the following unsignalized intersections would experience traffic volumes resulting in one or more traffic signal warrants being met:

- Woodring Drive and Zinfandel Drive,
- Happy Lane and Old Placerville Road, and
- Eagles Nest Road and Jackson Road.

As shown in Table TR-17, the addition of vehicle trips generated by project buildout would result in the exceedance of applicable LOS and delay thresholds. This impact would be significant.

MITIGATION MEASURES

~~**TR-4:**~~ Intersection Operations Impacts

The project applicant shall implement Mitigation Measures TR-1 and TR-2.

- ~~The project applicant shall implement the set of improvements assigned to the project by the Tool (Mitigation Measure TR-1) as identified in Tables TR-21 and TR-22. Detailed intersection operations calculations and the full list of study area intersection operating conditions are included in Appendix TR-1. Where feasible, the number of roadway lanes was~~ **would be** ~~increased to mitigate the impact. In locations where the LOS impact could not be mitigated by implementing the County's standard number of approach lanes, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These generally include providing additional turn lanes, carrying an additional through lane past the intersection, or designating the intersection as a High Capacity Intersection.~~

Table TR-20: Existing Plus Mather South Intersection Operations

Intersection	A.M. Peak Hour							P.M. Peak Hour						
	Existing			Existing Plus Mather South Project			LOS Impact	Existing			Existing Plus Mather South Project			LOS Impact
	Control	Int Los	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
Woodring Drive & Zinfandel Drive	Two-way stop	A	5.9	Two-way stop	C	15.8	Yes	Two-way stop	A	3.0	Two-way stop	A	6.1	Yes
Eastbound		A	9.3		F	112.3			A	9.3		F	72.7	
Northbound Left Turn		A	0.0		A	8.6			A	0.0		B	10.2	
Happy Lane & Old Placerville Road	Two-way stop	A	7.3	Two-way stop	B	11.6	Yes	Two-way stop	A	4.7	Two-way stop	B	10.1	Yes
Northbound Left Turn		F	64.8		F	214.3			F	95.9		F	243.7	
Northbound Right Turn		D	30.6		E	36.1			C	15.4		C	19.6	
Westbound Left Turn		B	10.2		B	11.0			B	10.1		B	10.4	
Eagles Nest Road & Jackson Road	Two-way stop	A	2.3	Two-way stop	A	0.8	Yes	Two-way stop	A	3.6	Two-way stop	F	176.0	Yes
Northbound		C	22.0		F	>300			C	23.8		F	>300	
Southbound		B	13.9		F	>300			C	22.0		F	>300	
Eastbound Left Turn		A	8.8		A	9.1			A	7.9		A	8.2	
Westbound Left Turn		A	7.9		A	7.8			A	8.7		A	8.6	

Source: DKS Associates 2018

Table TR-21: Existing Plus Mather South Intersection Operations with Mitigation

	Intersection	A.M. Peak Hour							P.M. Peak Hour						
		Existing Plus Mather South Project			LOS Impact	Mitigated Existing Plus Mather South Project			Existing Plus Mather South Project			LOS Impact	Mitigated Existing Plus Mather South Project		
		Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)
32	Woodring Drive & Zinfandel Drive	Two-way stop			Yes	Roundabout	C	23.4	Two-way stop			Yes	Roundabout	C	20.7
	Eastbound		**F**	**112.3**			*A*	*9.8*		**F**	**72.7**			*B*	*11.7*
	Northbound Left Turn		*A*	*8.6*			*E*	*35.3*		*B*	*10.2*			*B*	*11.8*
42	Happy Lane & Old Placerville Road	Two-way stop			Yes	Modify access control to allow only right-in and right-out on Happy Lane. Median will allow Westbound left- turns to Happy Lane.			Two-way stop			Yes	Modify access control to allow only right-in and right-out on Happy Lane. Median will allow Westbound left- turns to Happy Lane.		
	Northbound Left Turn		**F**	**214.3**						**F**	**243.7**				
	Northbound Right Turn		**E**	**36.1**						*C*	*19.6*				
	Westbound Left Turn		*B*	*11.0*						*B*	*10.4*				
60	Eagles Nest Road & Jackson Road	Two-way stop			Yes	Signal	D	45.5	Two-way stop			Yes	Signal	D	44.2
	Northbound		**F**	**>300**						**F**	**>300**				
	Southbound		**F**	**>300**						**F**	**>300**				
	Eastbound Left Turn		*A*	*9.1*						*A*	*8.2*				
	Westbound Left Turn		*A*	*7.8*						*A*	*8.6*				

Note: Gray shading represents changes in traffic control that the project is responsible to provide.

Source: DKS Associates 2018

Table TR-22: Revised Project Existing Plus Mather South Project Intersection Impacts and Mitigations

Intersection		Traffic Control		Existing Plus Mather South Project Lane Geometrics				Mitigated Existing Plus Mather South Project Lane Geometrics				LOS Impact with Mitigation?	High Capacity Intersection?1	Alternative Mitigation2	Constraint if Full Mitigation Not Possible
		Existing Plus Project	Mitigated Existing Plus Project	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach				
32	Zinfandel Drive & Woodring Drive	Two-way stop	Roundabout	13	≅	7		2	≅	7		No	No		
42	Happy Lane & Old Placerville Road	Two-way stop	Access Control	15		3 5	13	Happy Lane to become right-in and right-out only. Median will allow westbound left turns.				Yes	No	Construct Routier extension from Old Placerville Road to Kiefer Road.	
60	Eagles Nest Road & Jackson Road	Two-way stop	Signal	6	⊥	14	14	6	!∃	14	14	No	No		

Notes:

[1] High capacity intersections are defined in the Sacramento County General Plan and may include grade separations, additional turn lanes, and/or other features as deemed appropriate by the County.

[2] Alternative mitigations represent proposed mitigations beyond the General Plan, excluding high capacity intersections, as proposed by the County of Sacramento.

Source: DKS Associates 2018

Implementation of Mitigation Measures TR-1~~,~~ **and** TR-2~~, and TR-4~~ would result in fair share payments toward improvements that would reduce all roadway intersection impacts of the Mather South Project to a less-than-significant level. Mitigation would generally involve improvements within the alignment or widening of the roadway. The programmatic impacts of constructing these improvements have been evaluated within the scope of the technical sections of this Draft EIR.

While implementation of Mitigation Measure TR-1~~,~~ **and** TR-2~~, and TR-4~~ would result in fair share payment toward improvements that would reduce impacts to intersection operations to a less-than-significant level, it cannot be guaranteed that all of these improvements would be implemented concurrent with the phasing of development because of the dynamic and interrelated nature of mitigation improvements that would serve multiple development projects. If all improvements were implemented in a timely way, all intersection impact would be reduced to a less-than-significant level. However, because the timing of implementation of all required improvements cannot be guaranteed and their implementation is not subject to the responsibility of just Mather South applicants and the County, it cannot be guaranteed that significant impacts to roadway segments would be reduced to a less than significant at the time of phased development. Therefore, this impact is concluded to be **significant and unavoidable**.

IMPACT: FREEWAY FACILITY IMPACTS

FREEWAY SEGMENTS

Table TR-23 summarizes a.m. and p.m. peak hour US 50 freeway segment operations. Detailed freeway facility data and analysis is included in Appendix TR-1. As shown in Table TR-23, with implementation of the Mather South Project, the Caltrans' threshold of significance (5 percent V/C increase) would not be exceeded along any of the freeway segments analyzed. This impact would be less than significant.

FREEWAY RAMP INTERSECTION QUEUING

Table TR-24 summarizes a.m. and p.m. peak hour freeway ramp intersection queuing. As shown in Table TR-24, implementation of the Mather South Project would not result in any freeway ramp intersections experiencing vehicle queues that would extend into the ramp's deceleration area, onto the freeway, or queues greater than the available storage capacity. This impact would be less than significant.

FREEWAY MERGE / DIVERGE / WEAVE SEGMENTS

Table TR-25 summarizes a.m. and p.m. peak hour freeway operations at merge/diverge/weave segments. Detailed merge/diverge/weave data and analysis is included in Appendix TR-1.

Due to the addition of project-related traffic to the freeway network, the following location would experience merge / diverge LOS worse than the freeway's LOS:

- Westbound Watt Avenue to Howe Avenue weave - p.m. peak hour

Therefore, this impact would be significant.

Table TR-23: Existing Plus Mather South Freeway Segment Operations

Direction	Location	Existing				Existing Plus Mather South Project			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Volume	LOS	Volume	LOS	Volume	LOS	Volume	LOS
East-bound US 50	SR 99/SR 51 to Stockton Boulevard	7,068	C	6,415	C	7,095	C	6,453	C
	Stockton Boulevard to 59th Street	7,470	**F**	7,228	**F**	7,508	**F**	7,275	**F**
	59th Street to 65th Street	6,767	D	6,641	D	6,798	D	6,679	D
	65th Street to Howe Avenue	7,962	D	7,562	D	7,996	D	7,624	D
	Howe Avenue to Watt Avenue	7,405	D	7,602	D	7,434	D	7,687	D
	Watt Avenue to Bradshaw Road	7,935	D	7,176	C	7,956	D	7,288	C
	Bradshaw Rd. to Mather Field Rd	7,725	**F**	7,366	C	7,704	**F**	7,403	C
	Mather Field Rd to Zinfandel Drive	7,275	C	7,224	C	7,298	C	7,269	C
	Zinfandel Drive to Sunrise Blvd	5,121	C	6,649	**F**	5,267	C	6,693	**F**
	Sunrise Boulevard to Hazel Avenue	4,985	C	5,323	**F**	5,057	C	5,357	**F**
West-bound US 50	Hazel Avenue to Sunrise Boulevard	6,068	D	4,370	C	6,095	D	4,461	C
	Sunrise Blvd to Zinfandel Drive	7,502	D	4,762	C	7,544	D	4,901	C
	Zinfandel Drive to Mather Field Rd	7,548	C	5,765	B	7,642	C	5,727	B
	Mather Field Rd to Bradshaw Road	7,859	**F**	6,939	D	7,919	**F**	6,909	D
	Bradshaw Road to Watt Avenue	7,550	**F**	6,466	D	7,673	**F**	6,520	D
	Watt Avenue to Howe Avenue	7,376	**F**	5,106	**F**	7,470	**F**	5,148	**F**
	Howe Avenue to 65th Street	8,157	**F**	7,407	**F**	8,205	**F**	7,441	**F**
	65th Street to 59th Street	8,278	**F**	7,358	**F**	8,304	**F**	7,385	**F**
	59th Street to Stockton Boulevard	9,115	D	7,945	**F**	9,140	D	7,974	**F**
	Stockton Boulevard to SR 99/ SR51	8,546	D	8,136	**F**	8,557	D	8,156	**F**

Source: DKS Associates 2018

Table TR-24: Existing Plus Mather South Freeway Segment Operations

Direction	US 50 Exit Ramp	Available Storage Length (feet / lane)			Maximum Queue Length (feet / lane)					
		A.M. Peak Hour			A.M. Peak Hour			P.M. Peak Hour		
		L	T	R	L	T	R	L	T	R
Eastbound US 50	Howe Avenue	765	—	765	88	—	229	123	—	131
	Watt Avenue	1,500	—	1,500	#175	—	210	257	—	209
	Bradshaw Road	1,250	—	1,250	90	—	310	79	—	211
	Mather Field Road	1,385	—	1,385	89	—	351	172	—	55
	Zinfandel Drive	1,025	1,025	1,025	216	851	797	491	394	227
	Sunrise Boulevard	1,695	—	1,695	148	—	89	177	—	51
	Hazel Avenue	1,310	—	1,310	142	—	39	151	—	8
Westbound US 50	Hazel Avenue	1,995	1,995	1,995	282	282	50	152	152	219
	Sunrise Boulevard	1,540	—	1,540	56	—	57	96	—	137
	Zinfandel Drive	1,065	—	1,065	171	—	45	88	—	97
	Mather Field Road	1,335	—	1,335	249	—	169	97	—	43
	Bradshaw Road	1,330	—	1,330	154	—	69	123	—	13
	Watt Avenue	1,480	—	1,480	187	—	592	92	—	428
	Howe Avenue	1,355	1,355	1,355	127	412	113	161	412	149

Underlined values indicate project impacts.
L = left turn movement, T = through movement, R = right turn movement
Source: DKS Associates 2018

Table TR-25: Existing Plus Mather South Freeway Segment Operations

Director	Location	Junction Type	Existing				Existing Plus Mather South Project			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
Eastbound US 50	Northbound 65th Street Slip Entrance	Weave	765	D	653	C	749	D	663	C
	Howe Avenue / Hornet Drive Exit	Weave	1,631	D	1,417	C	1,646	D	1,400	C
	Southbound Howe Avenue Loop Entrance	One-Lane Merge	484	C	881	C	510	C	884	D
	Northbound Howe Avenue Slip Entrance	One-Lane Merge	419	C	43	C	421	C	419	C
	Watt Avenue Exit	Two-Lane Merge	1,317	B	1,634	B	1,315	B	1,605	B
	Watt Avenue Entrance	One-Lane Merge	2,134	**F**	1,724	D	2,122	**F**	1,737	D
	Bradshaw Road Exit	Two-Lane Diverge	1,520	B	1,228	B	1,555	B	1,297	B
	Southbound Bradshaw Road Loop Entrance	One-Lane Merge	220	C	42	C	237	C	423	C
	Northbound Bradshaw Road Slip Entrance	One-Lane Merge	971	C	918	C	971	C	915	C
	Mather Field Road Exit	Two-Lane Diverge	1,266	B	1,062	A	1,268	B	1,100	A
	Southbound Mather Field Road Loop Entrance	One-Lane Merge	125	C	101	B	138	C	100	B
	Northbound Mather Field Road Slip Entrance	Weave	317	**F**	816	C	323	**F**	842	**F**
	Zinfandel Drive Exit	Weave	2,932	**F**	1,452	C	2,941	**F**	1,481	**F**
	Southbound Zinfandel Drive Loop Entrance	One-Lane Merge	182	B	129	C	178	B	129	B
	Northbound Zinfandel Drive Slip Entrance	One-Lane Merge	348	B	540	C	498	B	588	B
	Sunrise Boulevard Exit	Major Diverge	1,773	C	1,959	D	1,859	C	1,976	C
	Sunrise Boulevard Entrance	One-Lane Merge	992	C	889	D	1,002	C	893	C
	Hazel Avenue Exit	Two-Lane Diverge	933	B	1,541	C	950	B	1,552	B
	Hazel Avenue Entrance	Weave	804	C	945	C	799	C	950	C
	Aerojet Road Exit	Weave	241	C	55	C	240	C	52	C

Director	Location	Junction Type	Existing				Existing Plus Mather South Project			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
Westbound US 50	Hazel Avenue Exit	Two-Lane Diverge	631	A	869	A	692	A	864	B
	Northbound Hazel Avenue Loop Entrance	One-Lane Merge	160	B	600	B	165	B	592	B
	Southbound Hazel Avenue Slip Entrance	One-Lane Merge	1550	B	800	B	1,568	B	831	B
	Sunrise Boulevard Exit	One-Lane Diverge	749	E	758	D	706	E	773	E
	Sunrise Blvd Entrance	Lane Addition	2183	F	4,656	D	2,191	F	1,712	F
	Zinfandel Drive Exit	One-Lane Diverge	1034	E	608	C	1,034	E	737	E
	Northbound Zinfandel Drive Loop Entrance	Lane Addition	585	B	1,197	B	654	B	1,200	B
	Southbound Zinfandel Drive Slip Entrance	One-Lane Merge	442	C	561	B	460	C	525	C
	Mather Field Road Exit	One-Lane Drop	1093	C	556	A	1,126	C	587	C
	Northbound Mather Field Road Loop Entrance	One-Lane Merge	515	B	861	B	538	B	911	B
	Southbound Mather Field Road Slip Entrance	One-Lane Merge	387	B	380	B	367	B	360	B
	Bradshaw Road Exit	Two-Lane Diverge	1236	B	1,327	B	1,241	B	1,300	B
	Northbound Bradshaw Road Loop Entrance	One-Lane Merge	914	D	910	C	937	D	925	C
	Southbound Bradshaw Road Slip Entrance	One-Lane Merge	338	D	590	C	346	D	613	C
	Watt Avenue Exit	Major Diverge	1373	D	1,188	C	1,412	D	1,199	C
	Northbound Watt Avenue Entrance	One-Lane Merge	820	D	943	C	815	D	938	C
	Southbound Watt Avenue Slip Entrance	Lane Addition/ Weave	1232	C	1,317	D	1,247	C	1,321	**F**
	Howe Avenue Exit	Major Diverge/ Weave	1531	D	1,419	D	1,567	D	1,441	**F**
	Northbound Howe Avenue Loop Entrance	One-Lane Merge	654	D	602	C	651	D	624	C
	Southbound Howe Avenue Slip Entrance	One-Lane Merge	574	C	574	C	564	C	572	C

Bold values denote level of service "F" conditions.
Underlined values indicate project impacts.
Source: DKS Associates 2018

MITIGATION MEASURES

TR-~~5~~3: Freeway ~~Capacity~~ Improvements

- ~~The project applicant shall implement Mitigation Measures TR-1 and TR-2. No other feasible mitigation is available.~~

- ~~To minimize to westbound US 50 weave between Watt Avenue and Howe Avenue, the project applicants shall pay their fair share contribution toward the construction of one or more of the following improvements. At the time of issuance of building permits, SacDOT and the County Special Districts group will coordinate with Caltrans to identify the project-applicant's appropriate fair share contributions:~~

    - ~~Bus/high-occupancy vehicle (HOV) lanes from Watt Avenue to Downtown Sacramento (2035 SACOG MTP). The bus/HOV lanes from Watt Avenue to Downtown Sacramento are programmed and the project is anticipated to be completed by 2030.~~

    - ~~Replacement of existing communication lines with fiber optics to improve performance between SR-51/SR-99 and Watt Avenue (2013 10-Year SHOPP Plan).~~

    - ~~Auxiliary lane between the NB Howe Avenue on-ramp and the SB Howe Avenue onramp (2035 SACOG MTP). The auxiliary lane between the NB Howe Avenue on-ramp and the SB Howe Avenue onramp is planned and completion of the project is anticipated after 2036.~~

    - ~~Ramp meter improvements (Caltrans intelligent transportation systems (ITS)/OPS Project List).~~

- **To alleviate the impacts of the Jackson Corridor Developments, the Sacramento County Department of Transportation has consulted with Caltrans and they have identified the following improvements. The applicant shall provide a fair share contribution toward Caltrans' freeway facilities to the satisfaction of the Sacramento County Department of Transportation and Caltrans:**

    - **Pay fair share toward the future conversion of HOV lanes to Toll Lanes or a Reversible Lane along U.S. Highway 50 from I-5 to Watt Avenue.**

    - **Pay fair share toward the U.S. Highway 50 Integrated Corridor Management for the deployment of various Intelligent Transportation System improvements along U.S. Highway 50 and the City of Rancho Cordova, and regionally significant corridors in Sacramento County and the City of Folsom for incident management (non-capacity increasing) [Caltrans ID SAC25113].**

Capacity improvements such as widening of the freeway and freeway junctions would reduce the severity of the impacts but were considered infeasible due to right-of-way restrictions, legal and jurisdictional constraints, and potential economic infeasibility.

Potential alternative improvements have been identified from Caltrans' US 50 Transportation Concept Report (TCR) and CSMP. The TCR and CSMP is focused on ITS and integrated corridor management (ICM) projects. ITS is the application of technology to ground transportation to improve safety, mobility and efficiency. ICM projects focus on the management of corridors as a multimodal system and make operational decisions for the benefit of the corridor as a whole. ITS and ICM projects would have operational benefits to US 50 without adding additional capacity. The TCR and CSMP also identify potential improvements to parallel local facilities that would be expected to reduce travel demand on US 50.

Implementation of Mitigation Measure TR-~~5~~**3** would result in fair share payment toward improvements that would reduce the impact to the westbound US 50 weave between Watt Avenue and Howe Avenue. However, the amount by which these improvements would improve operating conditions at the facilities detailed above are unknown at this time; thus, if implemented it cannot be assured that the implementation of Mitigation Measure TR-~~5~~**3** would improve operating conditions to acceptable levels. Additionally, because these improvements are outside of Sacramento County's jurisdictional control, and while the appropriate jurisdictions can and should implement feasible mitigation to reduce impacts, it cannot be guaranteed that any of these improvements would be implemented or implemented in time for project development. Therefore, this would be a **significant and unavoidable** impact.

Impact: Bicycle and Pedestrian Impacts

The Mather South Project would not remove any existing or planned bicycle or pedestrian facilities. Additionally, the Mather South Project would include the provision of new bicycle and pedestrian facilities throughout the Mather South Plan Area, and between the project site and other nearby land uses. As detailed in the Project Transportation Improvements section and Plate TR-12, the Mather South Project would provide sidewalks and on-street (Class II) bike lanes on all collector, arterial and thoroughfare roadways. The project also provides several off-street (Class I) multi-purpose trails. Sidewalks would be required as part of the frontage improvements along all new roadway construction in the Mather South Project vicinity in conformance with County design standards. Additionally, circulation and access to all proposed public spaces shall include sidewalks that meet Americans with Disabilities Act standards.

However, because the specific design of facilities is not currently known, the planned bicycle and pedestrian improvements, discussed in Section 4.4.3 of the Community Master Plan could potentially result in an increase in pedestrian/bicycle-vehicle conflict points; and thus, could result in a degradation of bicycle and pedestrian safety. Therefore, pedestrian and bicycle circulation impacts would be potentially significant.

Mitigation Measures

TR-~~6~~4: Bicycle and Pedestrian **System Implementation** ~~Improvements~~

Future development within the Mather South Community Master Plan (MSCMP) shall implement the proposed bicycle and pedestrian path/trail

system as described in the Mather South Community Master Plan and Design Guidelines. Before approval of any tentative map, the project applicants shall coordinate with Sacramento County to identify the necessary on- and offsite pedestrian and bicycle facilities to serve the individual project and which would ensure bicycle and pedestrian safety. These facilities **shall be incorporated into subsequent projects and** could include sidewalks, stop signs, standard pedestrian and school crossing warning signs, lane striping to provide a bicycle lane, bicycle parking, signs to identify pedestrian and bicycle paths, raised crosswalks, pedestrian signal heads, and all appropriate traffic calming measures as defined in the County's Neighborhood Traffic Management Program. **Sidewalks would be required as part of the frontage improvements along all new roadway construction in the Project vicinity in conformance with County design standards. Circulation and access to all proposed public spaces shall include sidewalks that meet Americans with Disabilities Act Guidelines.** The proposed improvements would be constructed within the footprint of the overall project area and as such the construction-related environmental impacts of these improvements have been evaluated throughout this Draft EIR.

Implementation of Mitigation Measure TR-4 would ensure that the new pedestrian and bicycle facilities constructed by the project would minimize pedestrian/bicycle-vehicle conflict points; and thus, ensure bicycle and pedestrian safety. This impact would be reduced to **less than significant with mitigation**.

Impact: Transit Impacts

Public transit is not currently provided to, or in the vicinity of the Mather South Project site. As detailed in the Project Transportation Improvements section, a conceptual transit system to serve the Jackson Corridor Projects (including the Mather South Project) was developed by Sacramento County, SacRT, DKS Associates, and the applicants of the Jackson Corridor Projects as part of a joint transit planning process.

The proposed transit system is a condition of approval for the project and was assumed as an attribute of the Mather South Project and included in the traffic modeling and analysis in the Joint TIS. The assumed transit routes and service frequency would be required at full development of the Mather South Project. The proposed transit system has been included as a condition of approval, included in the draft Development Agreement for the project, and must be phased with development of the Mather South Project. Additionally, as indicated in Policy 4.4-35 of the Community Master Plan, the Mather South Financing Plan would include a funding source to implement this transit service.

Because, as described above, adequate transit facilities would be provided as development occurs, the Mather South Project would have **less-than-significant** impacts on the transit facilities.

MITIGATION MEASURES

No mitigation is required. However, the County is including the following mitigation measure to provide an internal tracking mechanism for the condition of approval that requires implementation of the project's proposed transit system.

TR-~~7~~5: Transit Improvements

> The project applicant shall coordinate with Sacramento County and Sacramento Regional Transit District (or other transit operators) to provide the additional transit facilities and services assumed in the transportation analysis, or a cost-effective equivalent level of transit facilities and services. Ultimate transit service consists of 15- minute headways during peak hours and 30-minute headways during non-peak hours on weekdays. The implementation of the transit routes and service frequency must be phased with development of the project and the ultimate service will be required at full buildout. **This shall be accomplished through the annexation to County Service Area 10 or formation of a transportation services district. Such annexation or formation shall occur prior to recordation of any final small lot subdivision map for the project.**

IMPACT: ROADWAY FUNCTIONALITY IMPACTS

Table TR-26 summarizes the results of the rural roadway segment functionality analysis. This table includes the number of lanes assumed with the implementation of the Mather South Project, which in many cases is greater than the number of lanes in the existing condition. The shaded table cells under the "Travel Lanes" heading illustrates new roadways and widened roadways that are assumed to be included within the Mather South project. The "Substandard" heading indicates whether a roadway meets the County standards requiring12-foot wide travel lanes with 6-foot wide shoulders. If the project makes improvements to a roadway segment such as widening,

Table TR-26: Project Functionality Impacts

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				Existing + Mather South Project			
		From	To		Travel Lanes	Pavement (ft)	Substandard[1]	Existing Volume	Travel Lanes	Substandard[1]	Forecasted Volume	Functionality Impact[2,3]
15	Douglas Rd	Mather Blvd	Zinfandel Dr	County	2	23	Yes	6,635	2	Yes	7,520	**Yes**
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	Rancho Cordova/ County	2	23	Yes	8,369	2	Yes	9,690	**Yes**
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	County	2	20	Yes	740	2	Yes	7,010	**Yes**
20	Eagles Nest Rd	Jackson Rd	Florin Rd	County	2	<21	Yes	517	2	Yes	3,570	No
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	County	2	<21	Yes	189	2	Yes	1,810	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	County	2	23	Yes	5,576	2	Yes	5,920	No
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	County	2	23	Yes	5,797	2	Yes	6,100	**Yes**
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	County	2	23	Yes	5,355	2	Yes	5,910	No
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	County	2	23	Yes	2,158	2	Yes	2,420	No
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	County	2	22	Yes	3,716	2	Yes	1,630	No
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	County	2	<21	Yes	5,075	2	Yes	4,770	No
32	Excelsior Rd	Elder Creek Rd	Florin Rd	County	2	<21	Yes	4,203	2	Yes	3,750	No
33	Excelsior Rd	Florin Rd	Gerber Rd	County	2	<21	Yes	5,423	2	Yes	5,350	No
34	Excelsior Rd	Gerber Rd	Calvine Rd	County	2	<21	Yes	4,229	2	Yes	4,090	No
39	Florin Rd	South Watt Ave	Hedge Ave	County	2	22	Yes	7,718	2	Yes	8,400	**Yes**
40	Florin Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	6,312	2	Yes	7,130	**Yes**
41	Florin Rd	Mayhew Rd	Bradshaw Rd	County	2	22	Yes	5,317	2	Yes	7,160	**Yes**
42	Florin Rd	Bradshaw Rd	Excelsior Rd	County	2	22	Yes	3,478	2	Yes	4,650	No
43	Florin Rd	Excelsior Rd	Sunrise Blvd	County	2	22	Yes	3,835	2	Yes	5,430	No

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				Existing + Mather South Project			
		From	To		Travel Lanes	Pavement (ft)	Substandard[1]	Existing Volume	Travel Lanes	Substandard[1]	Forecasted Volume	Functionality Impact[2,3]
48	Fruitridge Rd	South Watt Ave	Hedge Ave	City of Sacramento/ County	2	22	Yes	2,890	2	Yes	3,110	No
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	1,790	2	Yes	2,020	No
50	Grant Line Rd	White Rock Rd	Douglas Rd	Rancho Cordova/ County	2	22	Yes	7,189	2	Yes	7,310	No
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	County	2	22	Yes	4,635	2	Yes	6,630	**Yes**
59	Hedge Ave	Jackson Rd	Fruitridge Rd	County	2	22	Yes	3,061	2	Yes	2,960	No
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	City of Sacramento/ County	2	22	Yes	3,737	2	Yes	3,630	No
61	Hedge Ave	Elder Creek Rd	Florin Rd	County	2	22	Yes	2,722	2	Yes	2,700	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	County	2	26	Yes	13,030	2	Yes	14,210	**Yes**
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	County	2	26	Yes	10,478	2	Yes	13,330	**Yes**
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	City of Sacramento/ County	2	22	Yes	4,616	2	Yes	4,740	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	County	2	22	Yes	4,618	2	Yes	5,540	No
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	County	2	22	Yes	656	2	Yes	6,730	**Yes**
83	Mather Blvd-Excelsior Rd[4]	Douglas Rd	Kiefer Blvd	County	2	22	Yes	6,751	2	Yes	7,060	No
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	County	2	22	Yes	1,616	2	Yes	1,820	No
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	Rancho Cordova/ County	2	20	Yes	2,490	2	Yes	2,450	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	County	2	<21	Yes	2,848	2	Yes	17,990	**Yes**

Note: **Bold** text with light gray shading indicate project impacts. Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.
[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.
[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.
[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, before the construction of roadway improvements.
[4] Excluding the roadway segment that is within the developed community of Independence at Mather.
Source: DKS Associates 2018

it would be required to reconstruct the entire substandard roadway segment to County standards. The shaded table cells under the "Functionality Impact" heading indicate those locations with a functionality impact. Plate TR-13 depicts the location of the segments along which functionality impacts would occur.

As stated above, the traffic analysis assumed that the Mather South Project would construct several travel lanes on roadway segments that are internal to, or on the boundary of the Mather South Project, and the entire roadway segment would be reconstructed to County standards. The timing of implementation of these additional traffic lanes on these internal or boundary roadway segments would affect whether or not impacts would occur at some point before full build out of the Mather South Project.

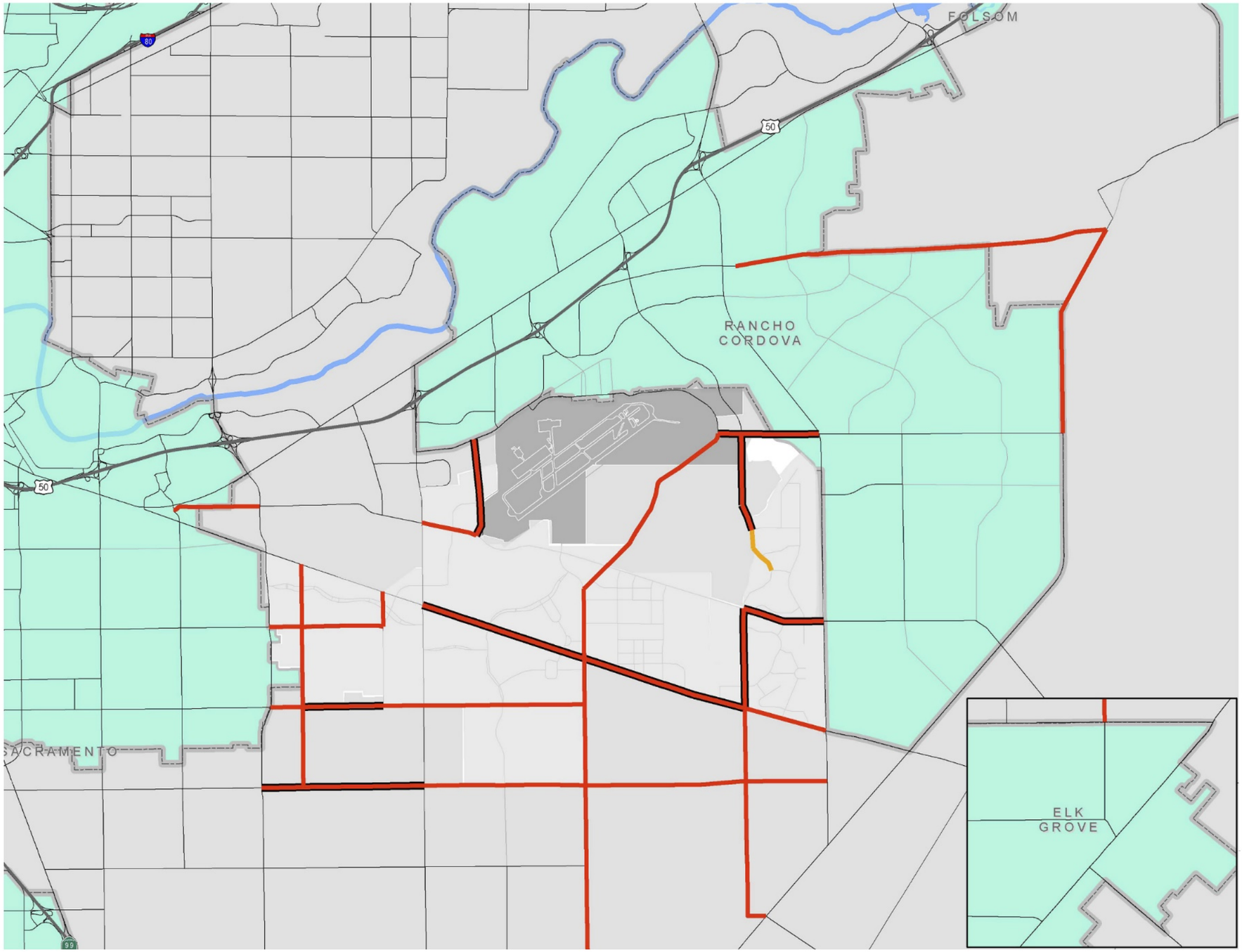
As shown in Table TR-26, implementation of the project would result in functionality impacts along 12 roadway segments within the project study area. Thus, this impact would be significant.

MITIGATION MEASURES

TR-6. Roadway Functionality Improvements

> The project applicant shall implement Mitigation Measure TR-1 and TR-2. The applicant shall consult with the County on the timing needs of proposed improvements and shall either submit their fair share payment and/or enter into an agreement to construct the assigned improvements. Improvements projected to be required based on the status of current development in the area is summarized in Table TR-27. As development in the area is approved and proceeds to construction, the timing or assignment of specific traffic improvements may change but would nonetheless be assigned to each project based on their fair-share contribution to the overall area impacts.
>
> As shown in Table TR-27 proposed improvements include widening the deficient rural roadway segments to County standards Table TR-27 summarizes the proposed improvements of widening the deficient rural roadway segments to County standards, and the resultant functionality analysis for these roadway segments with these improvements implemented.

Implementation of Mitigation Measure TR-6 would result in fair share payment toward improvements that would reduce the impacts of the Mather South Project as shown in Table TR-27. However, it cannot be guaranteed that all of these improvements would be implemented concurrent with the phasing of development proposed for the Mather South Project because of the dynamic and interrelated nature of mitigation improvements that would serve multiple development projects. If all improvements were implemented in a timely way, all impacts would be reduced to a less-than-significant level. However, because the timing of implementation of all required improvements cannot be guaranteed and is not subject to the sole responsibility of just Mather South applicants and the County, it cannot be guaranteed that significant impacts to roadway segments would be reduced to a less-than-significant at the time of development. Therefore, this impact is concluded to be **significant and unavoidable**.



Source: Image Provided by DKS Associates in February 2018

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Plate TR-13: Project Functionality Impacts

Table TR-27: Project Functionality Impacts with Mitigation

ID	Roadway	Segment		Jurisdiction	Existing + Mather South Project (Revised Project)				Mitigation[4]	Impact after Mitigation
		From	To		Travel Lanes	Substandard[1]	Forecasted Volume	Functionality Impact[2,3]		
15	Douglas Rd	Mather Blvd	Zinfandel Dr	County	2	Yes	7,520	**Yes**	Widen to County standards	No
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	Rancho Cordova/ County	2	Yes	9,690	**Yes**	Widen to County standards	No
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	County	2	Yes	7,010	**Yes**	Widen to County standards	No
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	County	2	Yes	6,100	**Yes**	Widen to County standards	No
39	Florin Rd	South Watt Ave	Hedge Ave	County	2	Yes	8,400	**Yes**	Widen to County standards	No
40	Florin Rd	Hedge Ave	Mayhew Rd	County	2	Yes	7,130	**Yes**	Widen to County standards	No
41	Florin Rd	Mayhew Rd	Bradshaw Rd	County	2	Yes	7,160	**Yes**	Widen to County standards	No
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	County	2	Yes	6,630	**Yes**	Widen to County standards	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	County	2	Yes	14,210	**Yes**	Widen to County standards	No
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	County	2	Yes	13,330	**Yes**	Widen to County standards	No
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	County	2	Yes	6,730	**Yes**	Widen to County standards	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	County	2	Yes	17,990	**Yes**	Widen to County standards	No

Note: **Bold** text with light gray shading indicate project impacts. Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

[1] Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.

[2] Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.

[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, before the construction of roadway improvements.

[4] The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Source: DKS Associates 2018

Impact: Emergency Access and Hazardous Design Feature Impacts

The Mather South Project would provide new roadway connections which would provide for improved emergency access and connections within the project area; and thus, would not interfere with emergency response. Additionally, the project would not modify the existing roadway network such that emergency access along existing roadways would be impaired.

The project would be designed to meet all the design and safety standards established by the County including 603-20.6 Mather Field SPA - Development Standards and 603-20.7 Mather Field Road Improvement and Maintenance Standards, and Community Master Plan Policy 4.4-19 which requires coordination with Sacramento Metro Fire District to ensure that the design of local roads will accommodate emergency vehicles. Adherence to these design standards would ensure that adequate site distances and access for vehicles entering and leaving the site is provided for safe travel. Additionally, before construction activities, project proponents are required to coordinate with emergency service providers to ensure that there are no impediments to the provision of emergency services during and after project related construction activities. As described in the Traffic and Circulation chapter on page 12-9, Mitigation Measure PS-2 from the Mather Field Project EIR would be implemented which requires coordination with emergency service providers before approval of any tentative map and consultation must be completed to the satisfaction of Sac Metro Fire and SacDOT. Therefore, the project would have **less-than-significant** impacts on emergency access and response, and safety associated with design features.

MITIGATION MEASURES

No mitigation is required.

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18 WATER SUPPLY

INTRODUCTION

The Mather Field Project EIR (2016) evaluated the Mather South Plan Area at the plan-level and that analysis is hereby incorporated by reference in this document and summarized where appropriate below. This chapter describes the availability, quality, and management of water supplies and addresses the ability of existing water service providers to supply potable water to the project. The analysis describes any relevant master planning of water supply infrastructure relevant to the new demands of the Mather South Project. The potential physical impacts of constructing facilities are described, as are the potential physical impacts of water demand. The analysis identifies impacts related to water supply from implementation of the Mather South Project at a project-level, and if necessary, recommends mitigation measures to reduce or eliminate significant impacts.

During the NOP scoping process, comments regarding water supply included availability of recycled water, the size of water tank site, and the dedication of a utility easement along the eastern boundary. A copy of the NOP and comment letters received in response to the NOP are included in Appendix PD-2 of this Mather South Project Draft EIR.

ENVIRONMENTAL SETTING

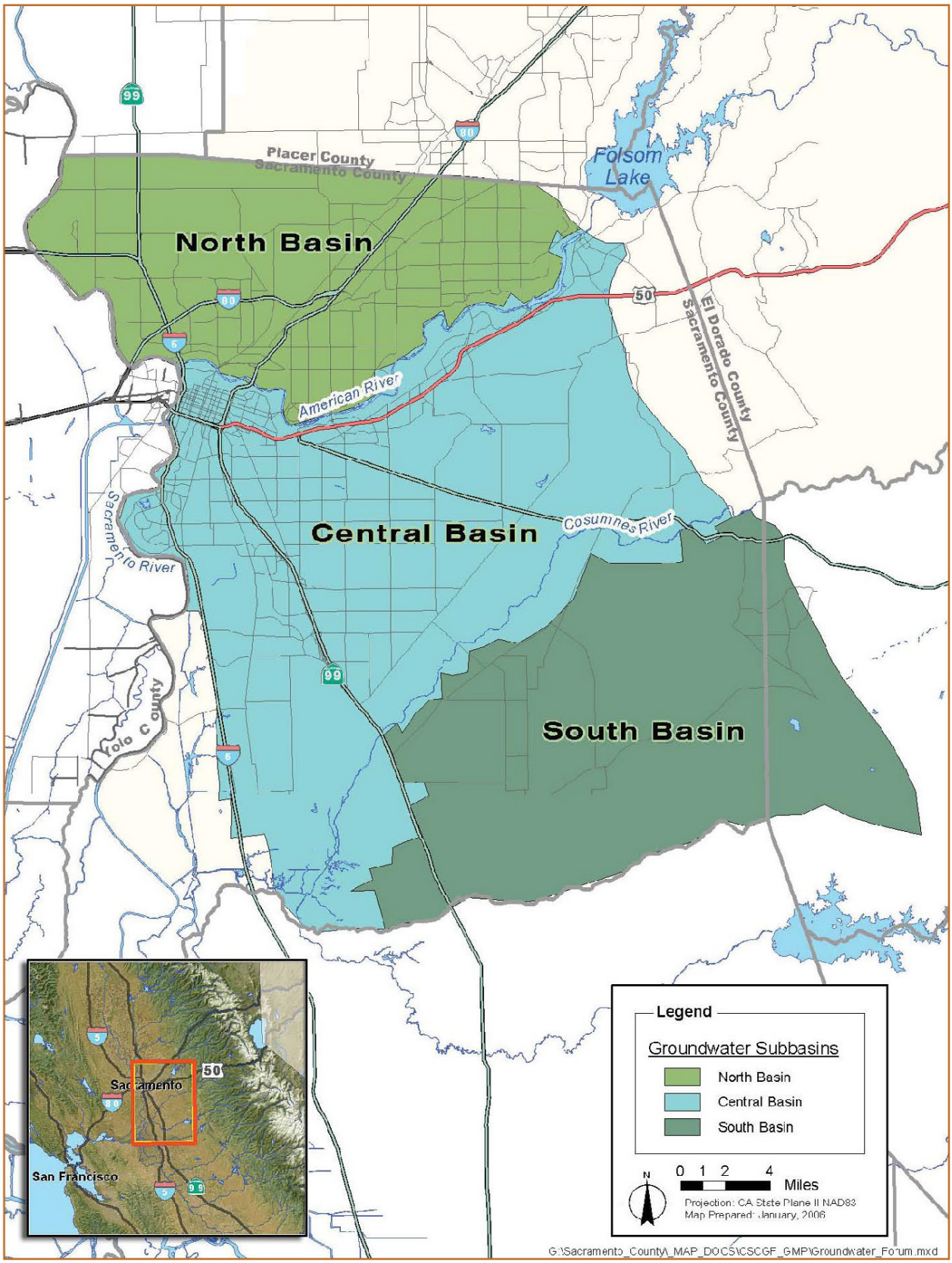
REGIONAL WATER SUPPLY

Twenty-eight water purveyors supply water to customers within Sacramento County. Water supply within Sacramento County consists of surface water from major rivers and streams, the Sacramento River Delta, and pumped groundwater from underground aquifers. A substantial network of water purveyors and/or districts distributes the water supply to mostly municipal and agricultural users. Individual private wells also supply rural residential and agricultural uses within the County (Sacramento County 2010).

REGIONAL GROUNDWATER

There are three primary groundwater zones in Sacramento County: the North Basin (north of the American River); the ~~South~~ **Central** Basin (between the American and the Cosumnes River); and the ~~Central~~ **South** Basin (Plate WS-1). The groundwater basin underlying Sacramento County has been utilized for domestic, agricultural, and urban water supply since the mid-1800s. In the 1940s, groundwater extractions began to exceed levels of recharge, which has caused a gradual lowering of groundwater levels in the region (SCGA 2006).

The Mather South Plan Area is in the Central Basin which has been subject to significant groundwater pumping and decline. The Central Basin is managed by the Sacramento Central Groundwater Authority (SCGA) which has adopted a groundwater management plan consistent with regional objectives (Sacramento County 2010).



Source: Sacramento Central Groundwater Authority 2006

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Plate WS-1: Groundwater Basins in Sacramento County

ASCENT ENVIRONMENTAL

The Central Basin is roughly bound by the American River to the north, the Sacramento River to the west, the Cosumnes and Mokelumne Rivers to the south, and the Sierra foothills to the east. The watershed areas for rivers identified in Plate WS-2, as well as the upland foothill regions, serve as the major source of groundwater recharge in the Central Basin (SCGA 2006).

Local Groundwater

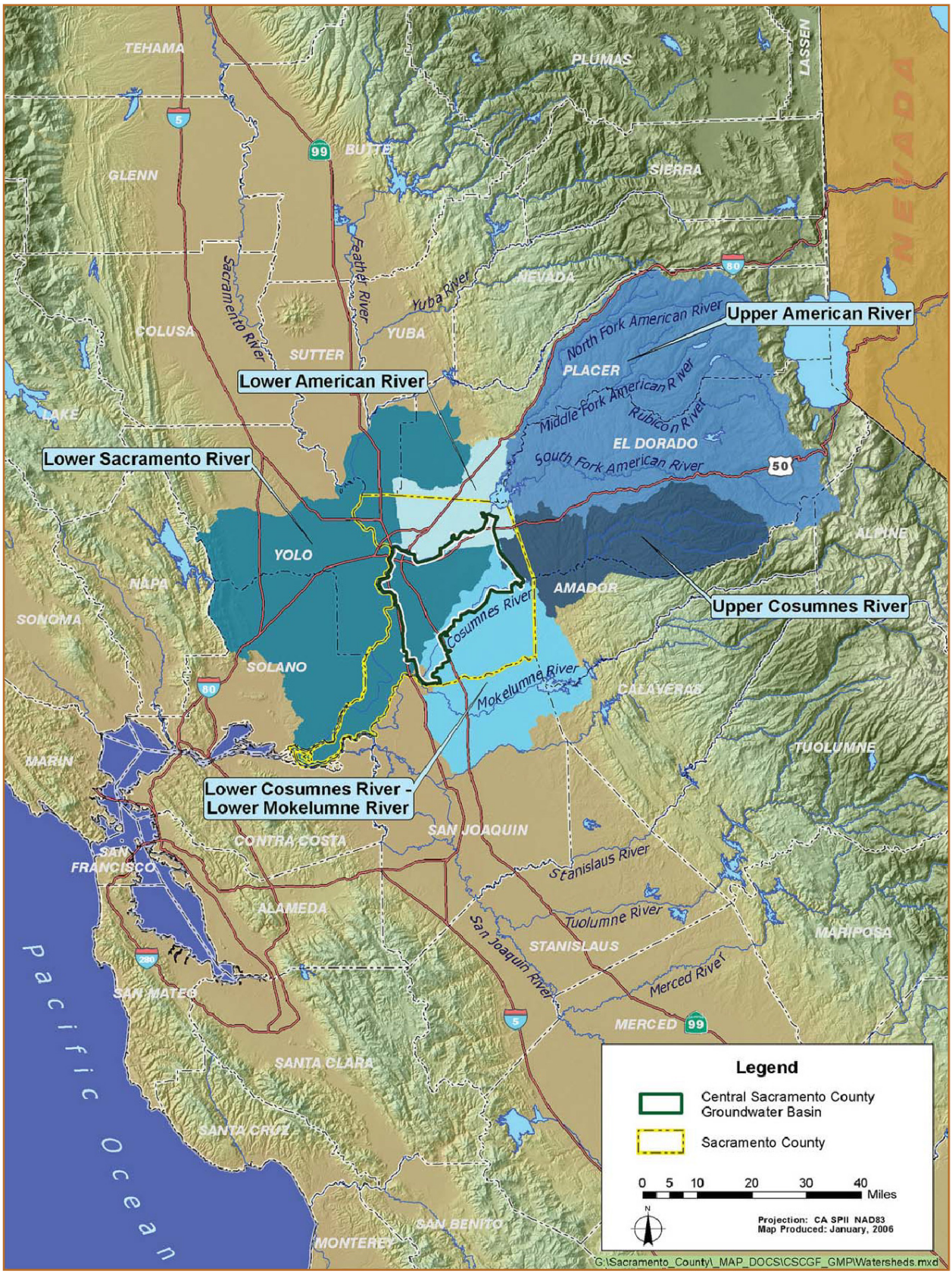
Groundwater underlying the Central Basin is contained within a shallow aquifer (Modesto Formation) and in a deep aquifer (Mehrten Formation). Groundwater is located from 20 to 100 feet below the ground surface depending on when and where the measurement is taken. Within the Central Basin, the shallow aquifer extends approximately 200 to 300 feet below the ground surface and, in general, water quality in this zone is good with the exception of arsenic detections in a few locations. The shallow aquifer is typically used for private domestic wells and typically requires no treatment (SCGA 2006).

The deep aquifer is separated from the shallow aquifer by a discontinuous clay layer that serves as a semi-confining layer. The base of the potable water portion of the deep aquifer averages approximately 1,400 feet below ground surface. Water in the deep aquifer typically has higher concentrations of total dissolved solids (TDS), iron, and manganese (SCGA 2006).

Groundwater used in the Central Basin is supplied from both the shallow and deeper aquifer systems. Intensive use of groundwater over the past 60 years has resulted in a general lowering of groundwater elevations. Over time isolated groundwater depressions have grown and coalesced into a single cone of depression that is centered in the southwestern portion of the Central Basin (SCGA 2006).

The main water quality contaminants of concern in the area are total dissolved solids, iron, manganese, and arsenic. However, the Central Basin also contains known plumes of contaminated groundwater within or near source areas such as Mather Field, McClellan Air Force Base, Aerojet, Boeing, the former Army Depot, the former Southern Pacific and Union Pacific railyards, Inactive Rancho Cordova Test Site (IRCTS, formerly McDonnell-Douglas) and various landfills. The known extent of groundwater contamination plumes and landfills is shown on Plate WS-3. For the Mather Field plumes, the primary contaminants of concern (COC) are tetrachloroethylene (TCE), perchloroethylene (PCE), and carbon tetrachloride. None of the Mather Field plumes extend to within the Plan Area.

For the Aerojet and IRCTS plumes, the primary COCs are TCE, n-nitrosodimethylamine (NDMA), and perchlorate. Leaking underground fuel tank (LUFT) sites also exist within the Central Basin. The sites can be fully remediated; however, an inventory of the number of sites, their locations, and their clean-up status is kept by the Sacramento County Environmental Management Department. Refer to Chapter 11 Hazardous Materials of this EIR for information related to LUFTs and other documented hazardous materials within the Plan Area (SCGA 2006).

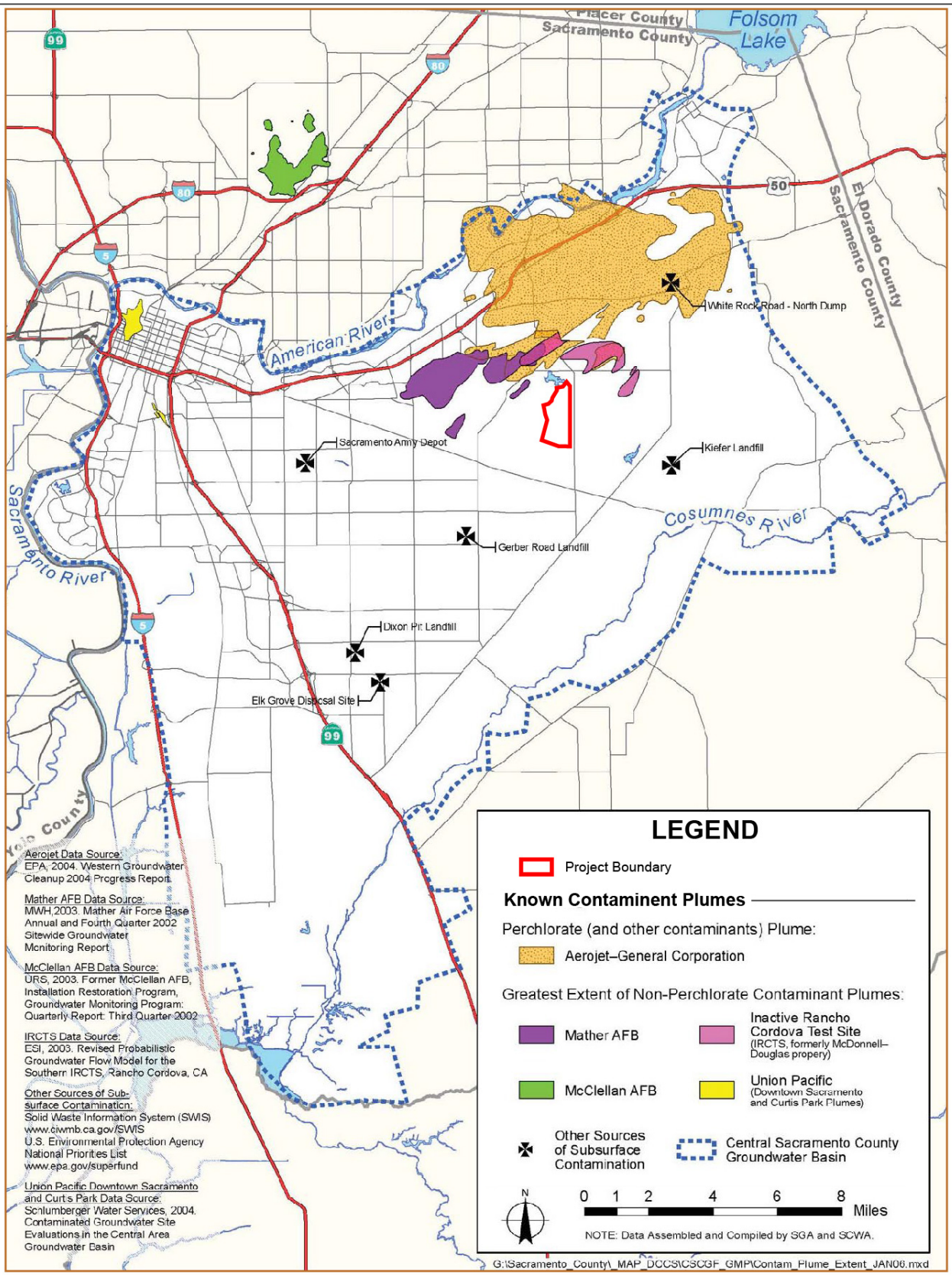


Source: Sacramento Central Groundwater Authority 2006

X15010101 08 071

Plate WS-2: Central Basin Watersheds Plate

ASCENT ENVIRONMENTAL



Source: Sacramento Central Groundwater Authority 2006

X15010101 08 072

Plate WS-3: Groundwater Contamination

REGIONAL WATER MANAGEMENT

SACRAMENTO AREA WATER FORUM

In 1993, the City-County Office of Metropolitan Water Planning organized the Sacramento Area Water Forum (Water Forum). The Water Forum brought together a diverse group of stakeholders to evaluate water resources and future water supply needs of the Sacramento metropolitan region and resulted in the development of a Water Forum Agreement (WFA) and Water Forum Plan (WFP). Implementation of the WFA and development of the WFP has resulted in maximum sustainable yield long-term average annual operational yield limits (sustainable yields) for each of the three geographic subareas of the groundwater basin within Sacramento County. The Water Forum determined the estimated long-term average annual sustainable yield of groundwater from the Central Basin to be 273,000 acre-feet per year (AF/year) (Water Forum 2000).

SACRAMENTO CENTRAL GROUNDWATER AUTHORITY

The Central Basin is managed by the Sacramento Central Groundwater Authority which consists of a Board of Directors made up of sixteen members and including representation from nine public agencies, two private water purveyors, one representative of agricultural interests, one representative of agricultural-residential groundwater users, one representative of commercial/industrial self-supplied groundwater users, one representative of conservation landowners and one representative of public agencies that are self-supplied groundwater users. Members of the Board are appointed by the cities of Sacramento, Folsom, Elk Grove, and Rancho Cordova, and the County of Sacramento Board of Supervisors to one four-year term (SCGA 2017).

THE CENTRAL SACRAMENTO COUNTY GROUNDWATER MANAGEMENT PLAN

Central Basin groundwater supplies are managed through the existing Central Sacramento County Groundwater Management Plan (CSCGMP) (SCGA 2006) and regional planning efforts to increase conjunctive use. A goal of the CSCGMP is to ensure a viable groundwater resource for beneficial uses including water for purveyors, agricultural, agricultural residential, industrial, and municipal supplies that support the WFA's objectives of providing a reliable and safe water supply and preserving the fishery, wildlife, recreational, and aesthetic values of the lower American River. In addition, the CSCGMP recognizes the need to maintain and enhance flows in the Cosumnes River because of its ecological significance.

Specifically, the CSCGMP utilizes the following five basin management objectives to help achieve groundwater basin goals:

1. Maintain a long-term average groundwater extraction rate of 273,000 AF/year.

2. Establish specific minimum groundwater elevations within all areas of the basin consistent with the Water Forum "Solution."

3. Protect against any potential inelastic land surface subsidence.

4. Protect against any adverse impacts to surface water flows.

5. Develop specific water quality objectives for several constituents of concern.

Sacramento County Water Agency

The project is in Sacramento County Water Agency (SCWA) Zone 40. Zone 40 is in the central portion of the county (Plate WS-4), and has traditionally been a largely rural, agricultural region. Zone 40 plans, acquires, constructs, and operates facilities for the conjunctive use of groundwater and surface water in the area of influence of the Central Sacramento County Groundwater Basin. Once planned facilities have been constructed by SCWA, they are operated and maintained by Zone 41, which retails the water to customers within the area covered by Zone 41. Zone 40 and 41 have largely overlapping jurisdictional boundaries.

Zone 40 was established in 1985 with the goal of curtailing groundwater overdraft in the southern portion of Sacramento County by providing a conjunctive surface water/ground water system. Initially, the water source for Zone 40 remained largely groundwater, with a smaller proportion coming from surface water pumped from the Sacramento River.

Currently, SCWA diverts firm and intermittent surface water from, or near, the mouth of the American River or from the Sacramento River and uses groundwater and surface water conjunctively to meet water system demands (SCWA 2016a).

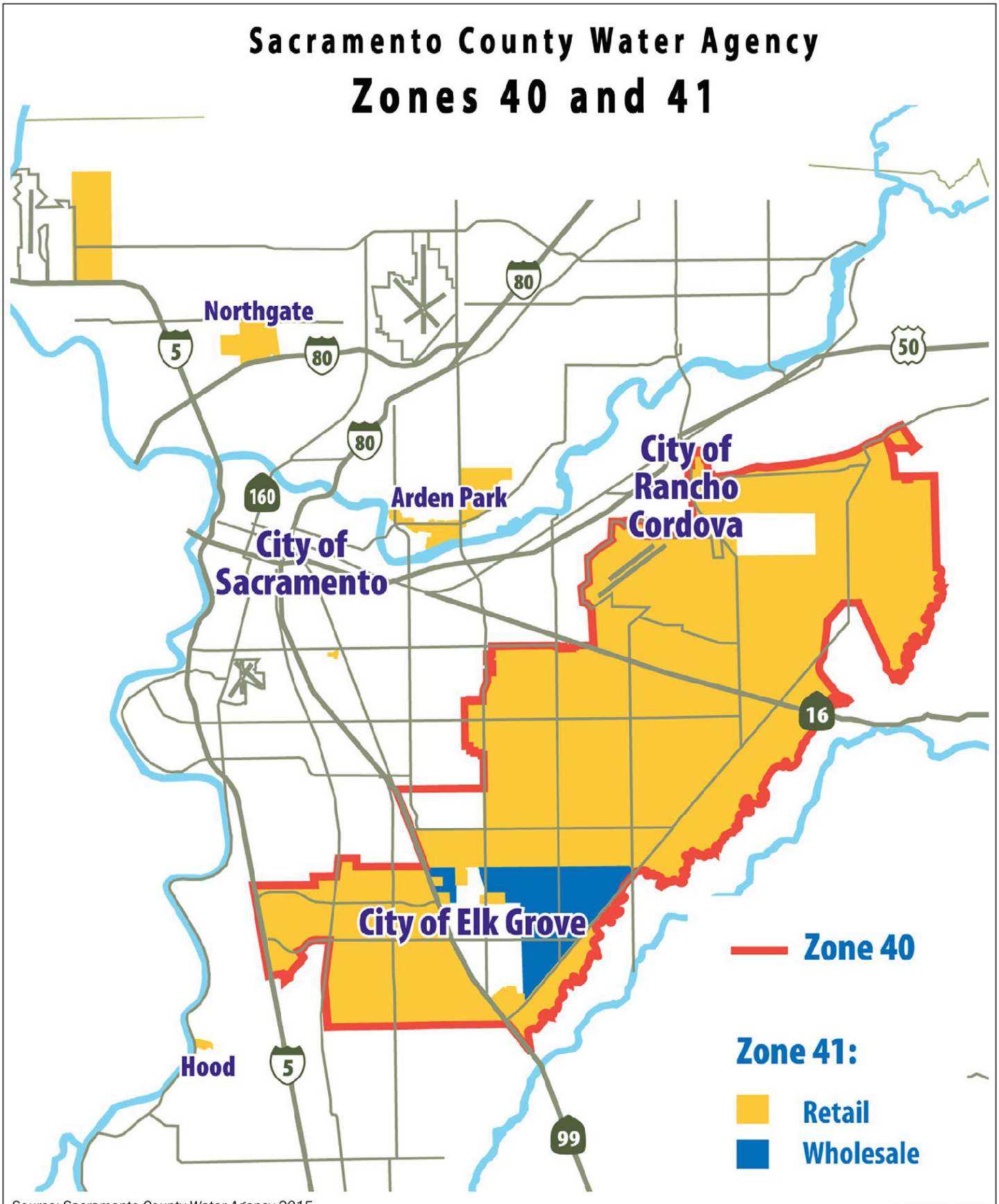
GROUNDWATER SUPPLIES

SCWA obtains most of its groundwater from extraction rights within the Central Basin, which underlies Zone 40. The estimated long-term annual sustainable yield of groundwater from the Central Basin is 273,000 AF/year as was negotiated during the WFA process. Additional groundwater is supplied through a remediated groundwater agreement between Sacramento County, SCWA, and Aerojet-General Corporation as well as from the Mather housing wells.

SURFACE WATER SUPPLIES

SCWA obtains surface water from a contract to purchase surface water from the Central Valley Project (CVP), an appropriative right to the American and Sacramento Rivers, and a small amount of recycled water (SCWA 2016a). Appropriative rights mean the ability to divert water at one point and use that water beneficially (appropriate) at another point that may not be proximate to where the water is diverted.

The CVP surface water supply consists of a total of 45,000 acre-ft/yr which is diverted at the Freeport diversion on the Sacramento River and treated at the Vineyard Surface Water Treatment Plant (VSWTP) which is approximately 3.5 miles southwest of the Plan Area. This water supply is subject to reductions in dry years (SCWA 2016a).



Source: Sacramento County Water Agency 2015

X15010101 08 073

Plate WS-4: SCWA Zones 40/41

ASCENT ENVIRONMENTAL

A second source of surface water consists of the City of Sacramento's American River Place of Use (POU) appropriation which constitutes approximately 9,300 acre-ft/yr. This water is diverted at the Sacramento SWTP. The allocation of water is dependent upon American River flows, and a supply allocation of zero percent is assumed for dry years and 100 percent for normal climate years.

A third source of surface water is supplied through appropriative use of the Sacramento and American Rivers as approved by the SWRCB under Permit 21209. SCWA is entitled to approximately 71,000 acre-ft/yr in wet years. The water is diverted at the Freeport diversion on the Sacramento River (Plate WS-5).

REGIONAL INFRASTRUCTURE

SCWA has existing and planned capital improvement projects that could support the delivery of water to the Mather South Project. There are two major projects relevant to the discussion which have already begun to increase the capacity of service delivery within Zone 40: the development of the VSWTP and the completion of the North Service Area (NSA) Pipeline.

VINEYARD SURFACE WATER TREATMENT PLAN

The VSWTP and associated water supply facilities are in operation. The VSWTP is currently providing potable water to existing development within the SCWA Zone 40 service area. The VSWTP currently has a capacity to treat 50 million gallons per day (mgd) with a planned capacity of 100 mgd of raw surface water to serve future development.

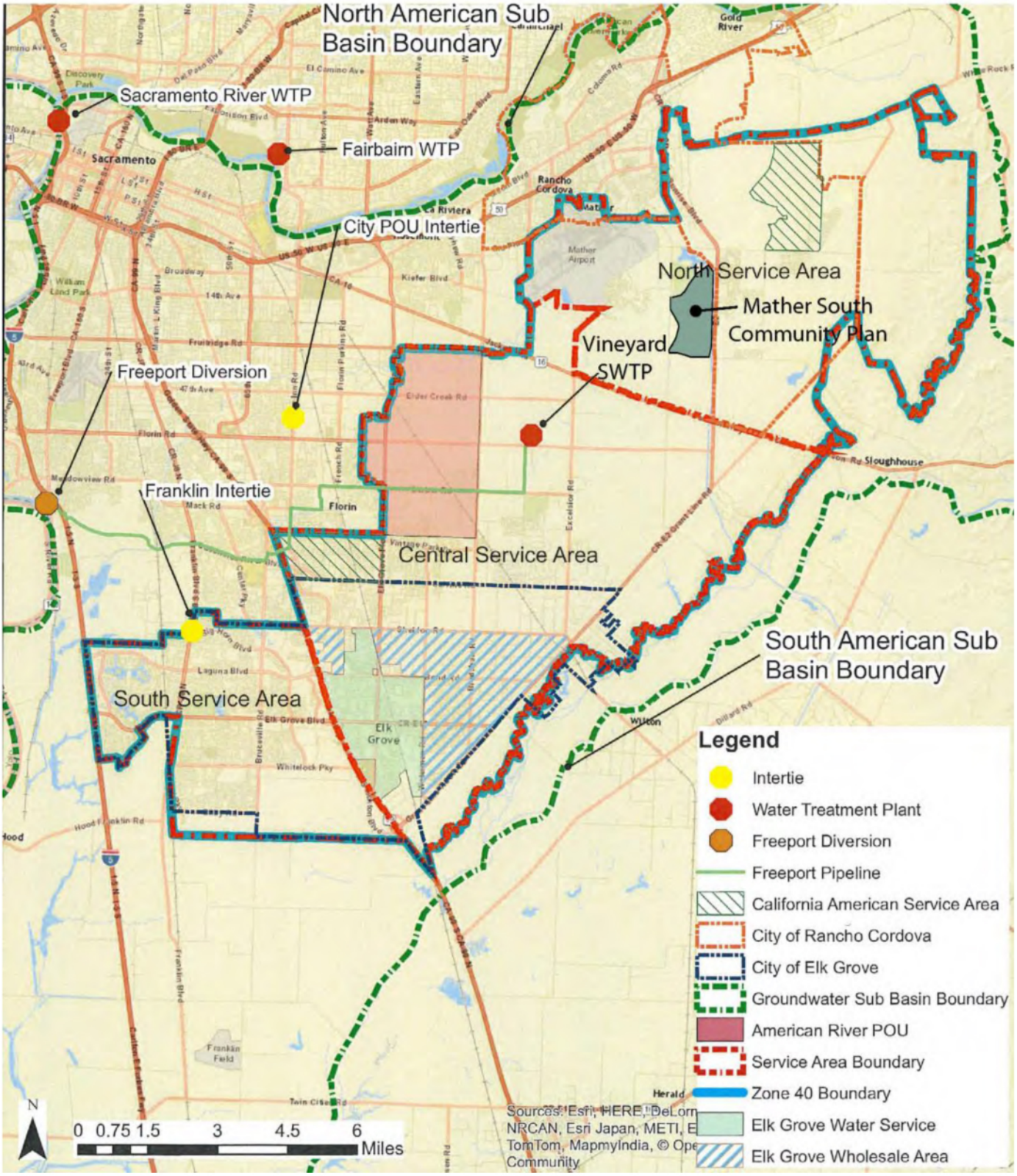
NORTH SERVICE AREA PIPELINE

The NSA Pipeline Project includes the construction of a transmission main and booster tank station that will serve the Mather Field Specific Plan area and the NSA. The pipeline will begin at the VSWTP and convey water to the NSA (NSA Pipeline Phase A). SCWA completed and approved an Initial Study/Mitigated Negative Declaration (*NSA Pipeline Project*, Sacramento County Control Number 2007-70373) for construction of this pipeline in September 2010. In 2014, a supplemental Initial Study/Mitigated Negative Declaration was prepared and adopted for an interim pipeline project constructing a 66-inch pipe to the Excelsior Well Field and converting the raw water pipe line to treated water to the existing Anatolia Water Treatment Plant. The interim pipeline was constructed in 2016. The timing of construction of the remaining portion of NSA pipeline (NSA Pipeline Phase B) cannot be predicted at this time, as its timing is dependent on growth demand in the NSA.

WATER SUPPLY TO PROJECT

The SCWA would be the purveyor of water to the Plan Area (Plate WS-5) and has prepared a Water Supply Assessment (WSA) in accordance with the California Water Code Sections 10910-10915 (described below) and included as Appendix WS-1. The water demands associated with the Mather South Project have been included and addressed in the latest Zone 41 Urban Water Management Plan (UWMP) (SCWA 2016a) and the Zone 40 Water System Infrastructure Plan (WSIP) (SCWA 2016b). The projected

annual water demand for the Mather South Project is 1,483 acre-feet per year, including system losses (SCWA 2018).



Source:

X15010101 08 074

Plate WS-5: Regional Water Service Infrastructure

ASCENT ENVIRONMENTAL

POTABLE WATER SUPPLY

The Mather South Project would receive surface and groundwater supplies from SCWA via the agency's existing potable water transmission system which would meet 100 percent of the build-out demand in the Plan Area. The VSWTP NSA Pipeline Phase A would deliver potable water from the VSWTP to the Douglas Road Tanks located in the northern portion of the Plan Area. The key facilities are illustrated on Plate WS-6. Initial service to the Plan Area would be from the VSWTP and from the North Vineyard Well Field and WTP. These supplies would be transported through an existing 30-inch diameter NSA Pipeline Phase A to the Anatolia Groundwater Treatment Plant located approximately 1.5 miles north of Kiefer Boulevard along Sunrise Boulevard. SCWA would install additional NSA transmission and storage facilities when regional water demands within the NSA warrant it. A grid of 8-inch to 12-inch mains would extend from ~~the existing 30-inch diameter NSA Pipeline Phase A water main transmission main in Kiefer Boulevard,~~ the existing 16-inch diameter water line in Zinfandel Drive (south of Douglas Road) and the existing 16-inch diameter water line in Sunrise Boulevard to serve local developments within the Plan Area.

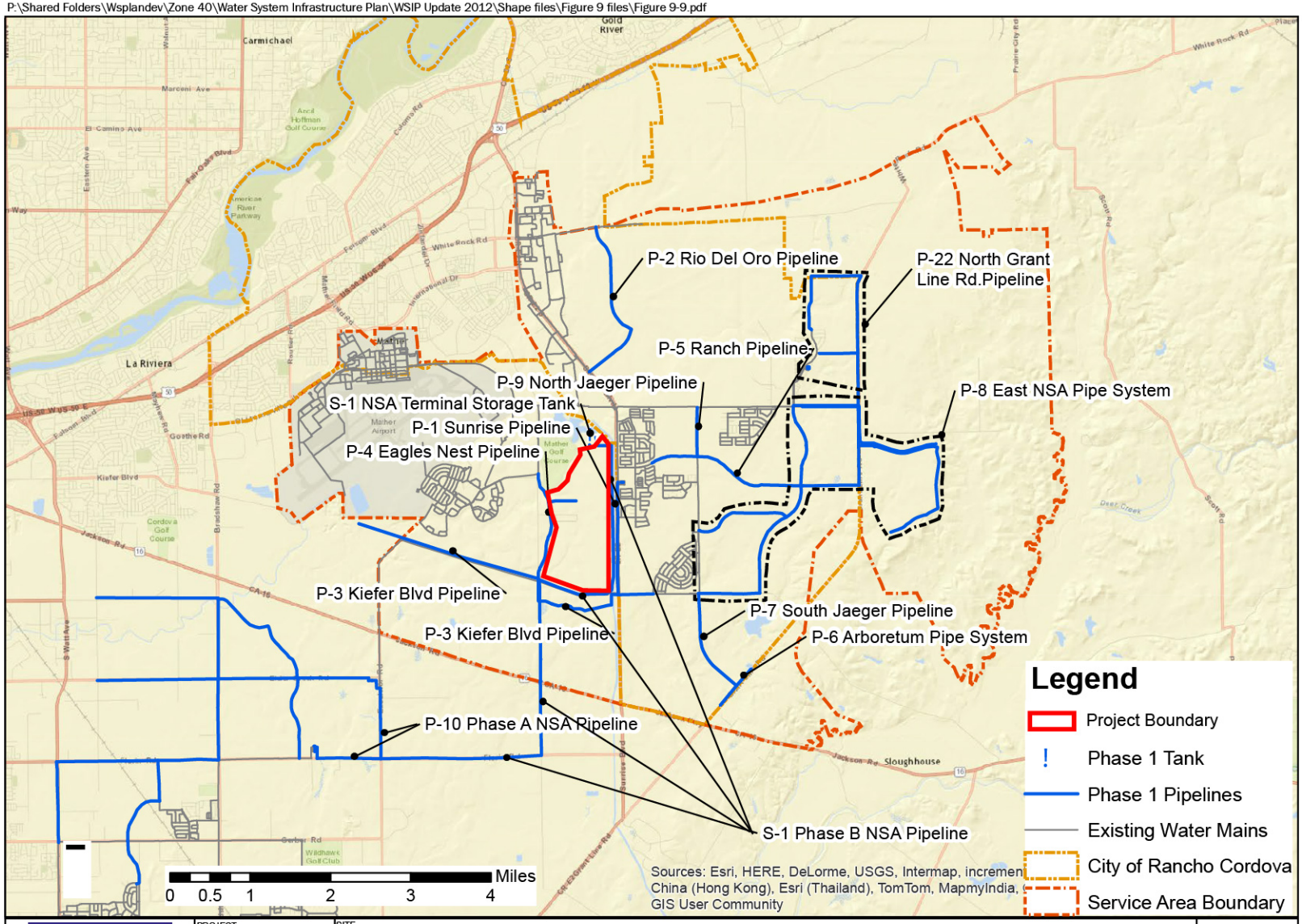
Depending on the timing of adjacent development, the existing water lines near the Mather South Project may have the capacity to serve the Plan Area. Ultimately, SCWA intends to install Phase B of the NSA Pipeline (54- inch diameter), from the existing 60-inch diameter Phase A line, located at the corner of Excelsior Road and Florin Road, easterly along Florin Road to Eagles Nest Road. The pipe would then run northerly to Kiefer Boulevard, then easterly on Kiefer to the west side of the Folsom South Canal, and finally along the east side of the Plan Area to the water tank (described below) located at the northeast corner of the Plan Area. A 54-inch/42-inch transmission pipeline would be installed northerly from the water tank to connect to the existing transmission system located in Douglas Road near Sunrise Blvd.

A ~~one~~ **ten** million-gallon water tank **farm** would be constructed to serve the greater NSA, including the Plan Area, and would be located in the northeast corner of the Plan Area as shown in Plate WS-7. The tank **farm** would be required when demands from new connections exceed the current storage capacity of the system. Depending on the timing of adjacent development and the water demands resulting from such development, the construction of the tank **farm** may not be required to serve the Plan Area. The tank **farm** would be served by an extension of the NSA Pipeline Phase B as depicted in Plate WS-7. The Mather South Community Master Plan anticipates that SCWA would construct the tank **farm** and the extension of the NSA Pipeline Phase B as future demands dictate.

NON-POTABLE WATER SUPPLY

Non-potable water (or often called "recycled water") for irrigation of landscape corridors and parks is not available, or planned, near the Mather South Plan Area. Recycled water in the region is provided by the Sacramento Regional County Sanitation District (RegionalSan). Recycled water is treated wastewater that has undergone additional filtration and disinfection processes to make the water safe for non-potable uses. Recycled water is delivered to areas via purple pipe that is installed separately

P:\Shared Folders\Wsplandev\Zone 40\Water System Infrastructure Plan\WSIP Update 2012\Shape files\Figure 9 files\Figure 9-9.pdf



Brown AND Caldwell / Department of Water Resources Sacramento County Water Agency	PROJECT	SITE	**Water System Infrastructure Plan Update**
	DATE 7/30/15	TITLE	**Phase 1 CIP Projects - NSA - Cumulative**

Source: Sacramento County Water Agency 2015

X15010101 08 075

Plate WS-6: Key Pipeline Infrastructure

ASCENT ENVIRONMENTAL

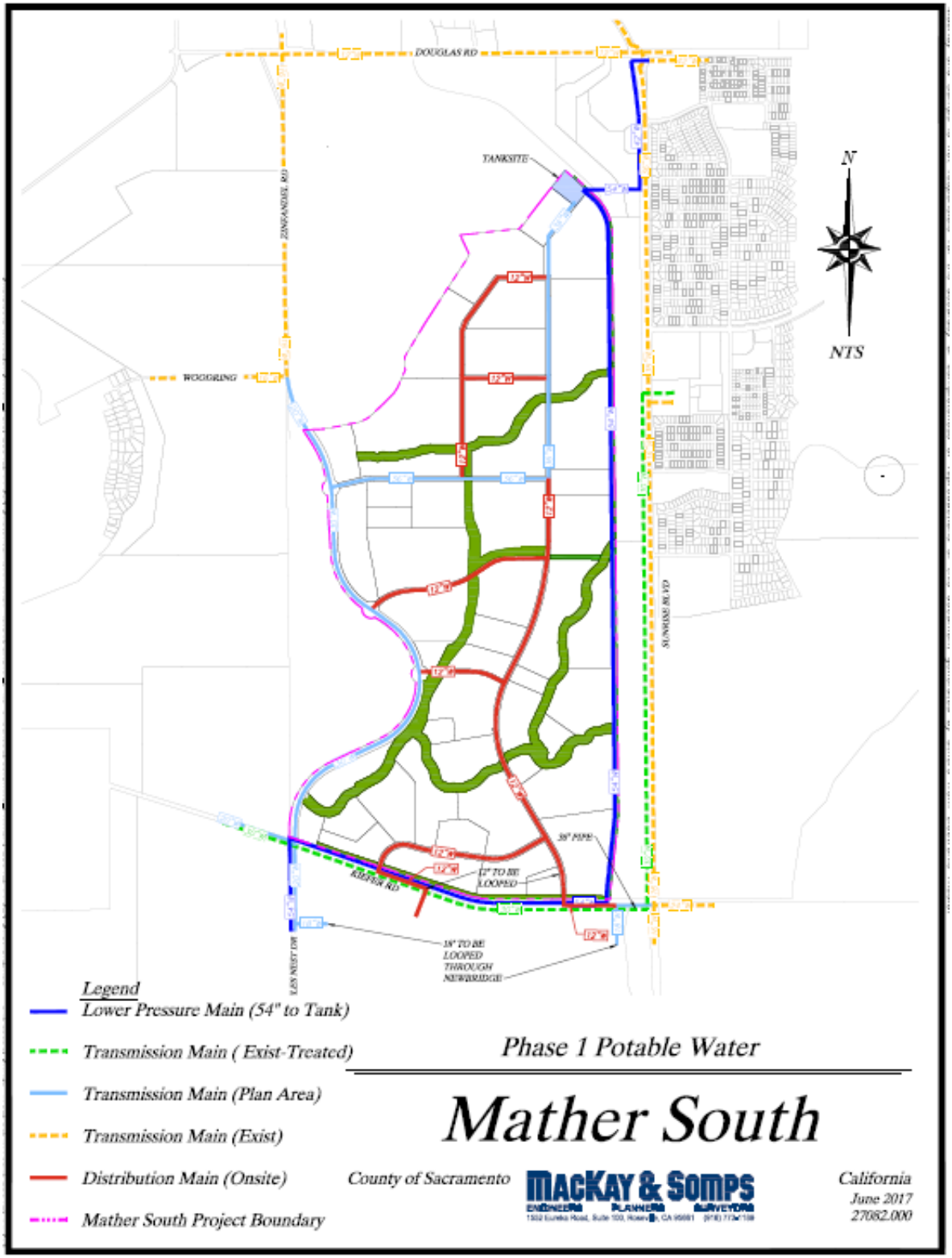
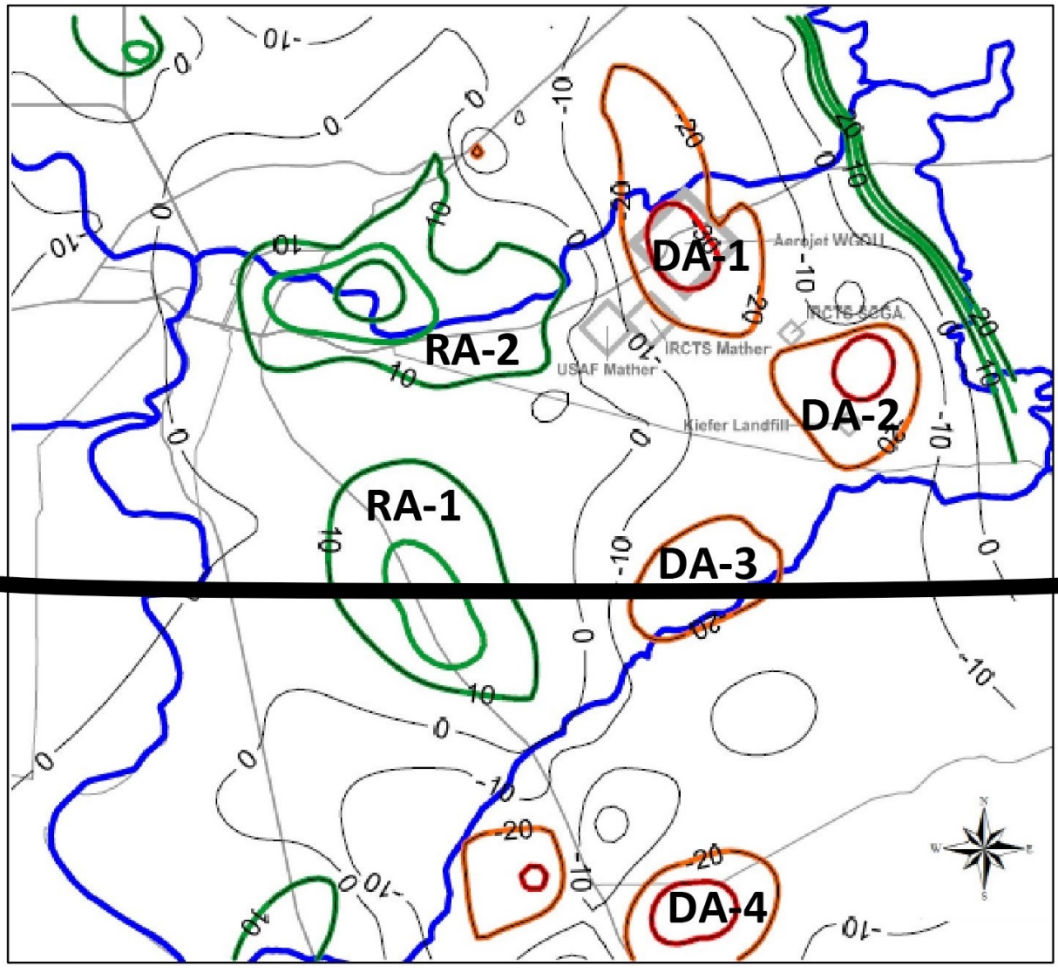


Plate WS-7 Mather South Water Supply Infrastructure



Groundwater Elevation Difference (2015 minus 2005)

Source: Mather South Community Master Plan 2018

X15010101 08 054

from water supply lines. In 2007, RegionalSan evaluated recycled water opportunities throughout the Sacramento region, including the Mather South area, and determined that it ranked 7th out of 18 possible projects based upon lifecycle cost, water supplies and demands, implementability, annual yield, public acceptance and environmental benefits (RegionalSan 2007). Therefore, a non-potable water system is not included in planning for the project at this time.

REGULATORY SETTING

FEDERAL

UNITED STATES BUREAU OF RECLAMATION

The Bureau of Reclamation is part of the United States Department of the Interior and is responsible for the development and conservation of much of the water resources in the western United States. The Bureau operates Folsom Dam, Nimbus Dam, and the Folsom South Canal. While the original purpose of the Bureau was to provide for the reclamation of arid and semiarid lands in the west, the agency's current mission covers a wider range of interrelated functions. These functions include providing municipal and industrial water supplies through the Central Valley Project; generating hydroelectric power; providing irrigation water for agriculture; improving water quality, flood control, and river navigation; providing river regulation and control and fish/wildlife enhancement; offering water-based recreation opportunities; and conducting research on a variety of water-related topics.

UNITED STATES GEOLOGICAL SURVEY

The United States Geological Survey (USGS) National Water Use Information Program is responsible for compiling and disseminating the nation's water use data. The USGS works in cooperation with federal, state, and local environmental agencies to collect water use information at the local level.

STATE

DEPARTMENT OF WATER RESOURCES

The Department of Water Resources (DWR) is responsible for the preparation of the California Water Plan, management of the State Water Project, protection, and restoration of the Sacramento-San Joaquin River Delta, regulation of dams, provision of flood protection, and other functions related to surface water and groundwater resources. Other functions include helping water agencies prepare their Urban Water Management Plans and reviewing such plans to ensure that they comply with the related Urban Water Management Planning Act.

STATE WATER RESOURCES CONTROL BOARD

The Water Resources Control Board (State Water Resources) was established in 1967 to administer state water rights and water quality functions. State Water Resources and

nine regional water quality control boards administer water rights and enforce pollution control standards. State Water Resources is responsible for the granting of water right permits and licenses through an appropriation process following public hearings and appropriate environmental review by applicants and responsible agencies. In granting water right permits and licenses, the WRCB must consider all beneficial uses, including water for downstream human and environmental uses.

Central Valley Regional Water Quality Control Board

The Central Valley Regional Water Quality Control Board (Regional Water Board) is responsible for the preparation and implementation of basin water quality plans consistent with the Clean Water Act and enforcement of those plans to ensure that local water quality is protected. The Regional Water Board may become involved in water supply programs as a responsible agency with respect to project impacts on downstream beneficial uses.

California Department of Fish and Wildlife

The California Department of Fish and Wildlife (CDFW) is a responsible agency with respect to the review of water right applications and is responsible for issuing lake and streambed alteration permits for new water supply projects. CDFW often helps establish in stream flows to maintain habitat below a project.

Urban Water Management Planning Act

Pursuant to California Water Code Sections 10610-10657, as last amended by Senate Bill 318 in 2004, the Urban Water Management Planning Act requires all urban water suppliers with more than 3,000 service connections or water use of more than 3,000 AFA to submit an UWMP to the California Department of Water Resources every 5 years and update the plan on or before December 31 in years ending in 5 and 0. SB 318 is the 18th amendment to the original bill requiring a UWMP, which was initially enacted in 1983. Amendments to SB 318 have focused on ensuring that the UWMP emphasizes and addresses drought contingency planning, water demand management, reclamation, and groundwater resources. The most recent update to the UWMP was prepared by SCWA in 2016.

Senate Bill 610

SB 610 became effective January 1, 2002. The purpose of SB 610 is to strengthen the process by which local agencies determine the adequacy and sufficiency of current and future water supplies to meet current and future demands. SB 610 amended the California Public Resources Code to incorporate Water Code requirements within the CEQA process for certain types of projects (described below). SB 610 also amended the water code to broaden the types of information included in a UWMP. SB 610 consists of two primary components, the UWMP and the water supply assessment (WSA) (Water Code Sections 10910-10915).

Water Code Section 10910

Water Code Section 10910 et seq. defines the projects for which the preparation of a WSA is required as well as the lead agency's responsibilities related to the WSA. The Water Code also clarifies the roles and responsibilities of the lead agency under CEQA and of the water supplier with respect to describing current and future supplies compared to current and future demands. A WSA is required for:

- A proposed residential development of more than 500 dwelling units;
- A proposed shopping center or business establishment employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- A proposed hotel or motel, or both, having more than 500 rooms;
- A proposed industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;
- A mixed-use development that includes one or more of the uses described above;
- A development that would demand a volume of water equivalent to or greater than the volume of water required by a 500-dwelling unit project; and
- For lead agencies with fewer than 5,000 water service connections, any new development that would increase the number of water service connections in the service area by 10 percent or more.

Senate Bill 221

SB 221 requires a city or county to include as a condition of approval of any tentative map, parcel map, or development agreement for certain residential subdivisions a requirement that a "sufficient water supply" be available. Proof of a sufficient water supply must be based on a written verification from the public water system that would serve the development.

Sustainable Groundwater Management Act of 2014

The Sustainable Groundwater Management Act of 2014 (SGMA) became law on January 1, 2015 and applies to all groundwater basins in the state (Water Code Section 10720.3). By enacting the SGMA, the legislature intended to provide local agencies with the authority and the technical and financial assistance necessary to sustainably manage groundwater within their jurisdiction (Water Code Section 10720.1).

Pursuant to the SGMA, any local agency that has water supply, water management, or land use responsibilities within a groundwater basin may elect to be a "groundwater sustainability agency" for that basin (Water Code Section 10723). The groundwater sustainability agency for the North American subbasin is the Sacramento Groundwater Authority.

The SGMA also requires DWR to categorize each groundwater basin in the state as high-, medium-, low-, or very low priority (Water Code Sections 10720.7, 10722.4) All basins designated as high- or medium-priority basins must be managed by a groundwater sustainability agency under a groundwater sustainability plan that complies with Water Code section 10727 et seq. If required to be prepared, groundwater sustainability plans must be prepared by January 31, 2020 for all high- and medium-priority basins that are subject to critical conditions of overdraft, as determined by DWR, or by January 31, 2022 for all other high- and medium-priority basins. In lieu of preparation of a groundwater sustainability plan, a local agency may submit an alternative that complies with the SGMA no later than January 1, 2017 (Water Code Section 10733.6).

On December 15, 2014, DWR announced its official "initial prioritization" of the state's groundwater basins for purposes of complying with the SGMA and this priority list became effective on January 1, 2015 (DWR 2016). DWR has ranked the Sacramento Valley Groundwater Basin as "high priority." As described above, the South Subbasin which underlies the Plan Area has been managed by the SCGA and a groundwater management plan was prepared and adopted in 2006. Therefore, SCGA has submitted the plan to DWR as an alternative management plan, that will satisfy the requirements of SGMA (SCGA 2018).

California Safe Drinking Water Act

The California Safe Drinking Water Act (CA SDWA; California Health and Safety Code 4010 – 4039.6) authorizes the California Division of Drinking Water's (DDW) to establish maximum contaminants levels (MCLs) that are at least as stringent as those required by the US EPA under the SDWA. The DDW has established MCLs for contaminants that may occur in public water systems, including all the substances for which federal MCLs exist, and may have adverse health effects. Operators of public water systems in California are required to meet federal and state drinking water standards.

Local

Sacramento County General Plan

The Sacramento County General Plan contains the following policies and implementation measures which pertain to the provision of water supply and may be applicable to the project.

AG-27. The County shall actively encourage groundwater recharge, water conservation and water recycling by both agricultural and urban water users.

CO-1. Support conjunctive use water supply for development.

CO-7. Support the Water Forum Agreement Groundwater Management Element. Prior to approving any new development water supply plan shall be approved that demonstrates consistency with an adopted groundwater management plan.

CO-8. Applicants proposing developments in areas with significant groundwater recharge characteristics shall evaluate the impact of said development on groundwater recharge and quality. This evaluation should recognize criteria defined in any broader County-wide determination and/or evaluation of groundwater recharge areas.

CO-9. Developments in areas with significant contamination shall utilize remediated groundwater as part of their water supply when feasible.

CO-13. Support the WFA Conservation Element and the California Urban Water Conservation Council Best Management Practices for Water Conservation.

CO-14. Support the use of recycled wastewater to meet non-potable water demands where financially feasible.

CO-16. Ensure developments are consistent with the County Water Efficient Landscape Ordinance, which shall be updated as needed to conform to state law.

CO-22. Support water management practices that are responsive to the impacts of Global Climate Change such as groundwater banking and other water storage projects.

CO-23. Development approval shall be subject to a finding regarding its impact on valuable water-supported ecosystems.

CO-34. Development applications shall be subject to compliance with applicable sections of the California Water Code and Government Code to determine the availability of an adequate and reliable water supply through the Water Supply Assessment and Written Verification processes.

CO-35. New development that will generate additional water demand shall not be approved and building permits shall not be issued if sufficient water supply is not available, as demonstrated by Water Supply Assessment and Written Verification processes.

CO-36. Water supply entitlements will be granted on a first come first serve basis to optimize the use of available water supplies.

LU-73. Sewer and water treatment and delivery systems shall not provide for greater capacity than that authorized by the General Plan.

PF-2. Municipal and industrial development within the Urban Service Boundary but outside of existing water purveyors' service areas shall be served by either annexation to an existing public agency providing water service or by creation or extension of a benefit zone of the SCWA.

PF-4. Connector fees for new development shall cover the fair share of costs to acquire and distribute surface water to the urban area.

PF-5. New treatment facilities and all facility operations shall be funded by beneficiaries.

CORDOVA COMMUNITY PLAN

The Cordova Community Plan contains the following policies related to water supply:

PS-2. Provide a reliable, contaminant-free, long-term source of water to serve the community, which protects the groundwater aquifer(s) from long-term damage attributable to drawdown by the use of public/private wells.

PS-6. Ensure the availability and accessibility of public services for all segments of the population.

MATHER FIELD SPECIFIC PLAN AND SPECIAL PLANNING AREA

603-19. PERFORMANCE STANDARDS FOR MATHER FIELD EXCEPT THE SINGLE FAMILY RESIDENCES AND PARKS SUBAREAS AS IDENTIFIED IN SECTION 603-20.3 AS "Site D."

INFRASTRUCTURE PROVISION AND FINANCING

B. All development within the Mather Field Special Planning Area (SPA), new and existing, regardless of private or public ownership, shall be subject to the payment of fees, assessments, special taxes, and any other charges in accordance with any subsequent infrastructure financing plan adopted by the Board of Supervisors for the Mather Field SPA, including any authorized adjustments thereto as provided within such infrastructure financing plan, and any other fees adopted by the County in accordance with the requirements of Chapter 5 (commencing with Section 66000) of Division 1 of Title 7 of the Government Code or pursuant to any other enabling law. Such infrastructure financing plan may include, but not by way of limitation, roadway, transit, water supply, sanitary sewer, drainage, fire protection, landscape and lighting facilities, and utilities.

C. No entitlement (tentative maps, building permits or other entitlements) shall be granted for development which results in a cumulative water demand exceeding existing Mather Field water supply capacity (i.e., an average water use of 5,000 AFA or 4.6 MGD), until the Sacramento County Board of Supervisors adopts a Master Water Plan for the Mather Field site which demonstrates that an adequate and reliable water supply (which includes supplemental surface water) will be available to serve buildout of the Mather Field Specific Plan land use and the surrounding region.

D. Prior to annexation of the Mather Field Specific Plan area into Zone 40, new users requiring a new service or upsizing of an existing service shall pay to Zone 40 a fair share contribution equivalent to the applicable Zone 40 development fee (consistent with the current method used to collect Zone 40 fees) in accordance with Ordinance No. 18 of the Sacramento County Water Agency prior to issuance of a connection permit. At such time that the County of Sacramento begins to bill for water service, new water users shall begin payment to Zone 40 a fair share bi-monthly contribution

equivalent to the Zone 40 user charge in accordance with Schedule B of Ordinance No. 18 of the Sacramento County Water Agency.

E. Prior to the annexation of the Mather Field Specific Plan area into the Sacramento County Water Maintenance District or Sacramento County gaining effective control of the Mather Field Water Supply System (whichever occurs later), each new water user shall pay a fair share contribution equivalent to the applicable Sacramento County Water Maintenance District connection fee paid prior to the issuance of a connection permit. Subsequent to the County of Sacramento gaining effective control of the Mather Field Water Supply System, all water users will begin payment of a fair share contribution equivalent to the Sacramento County Water Maintenance District service charge per Chapter 15 of the Sacramento County Code.

SIGNIFICANCE CRITERIA

Based on the CEQA Guidelines Appendix G and the sustainable groundwater yield identified in the WSA, a project would have a significant impact on water supply if it would:

1. Require or result in the construction of new or the expansion of existing water facilities, the construction of which could cause significant environmental effects.

2. Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

3. Result in a service demand that cannot be met by existing or reasonably foreseeable future service capacity.

4. Contribute to groundwater pumping to serve project growth such that the average annual sustainable yield of 273,000 acre-feet for the Central Sacramento Groundwater Basin is exceeded.

5. Interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level.

METHODOLOGY

A number of documents and studies were consulted to assess impacts to water supply including:

- 2018 Water Supply Assessment for Mather South Community Master Plan, Sacramento County Water Agency (Appendix WS-1)
- 2015 Urban Water Management Plan, Sacramento County Water Agency
- 2016 Water Supply Infrastructure Plan, Sacramento County Water Agency

- 2005 Zone 40: Water Supply Master Plan, Sacramento County Water Agency
- 2006 Central Sacramento County Groundwater Management Plan, Central Sacramento County

ISSUES NOT DISCUSSED FURTHER

All issues have been evaluated below.

IMPACTS AND ANALYSIS

2016 MATHER FIELD PROJECT EIR DETERMINATION

The Mather Field Project EIR evaluated impacts related to water supply from implementation of the Mather Field Project which consisted of a realignment of Zinfandel Drive and trunk extension, creation of the Mather Preserve and the establishment of an Urban Development Area designation for the Mather South Plan Area.

The EIR concluded that impacts related to water supply and water quality were less than significant. The discussion of impacts can be found on page 11-25 through 11-27 of the Mather Field Project EIR and is hereby incorporated by reference.

MATHER SOUTH PROJECT IMPACTS DETERMINATION

IMPACT: REQUIRE OR RESULT IN THE CONSTRUCTION OF NEW OR THE EXPANSION OF EXISTING WATER FACILITIES, THE CONSTRUCTION OF WHICH COULD CAUSE SIGNIFICANT ENVIRONMENTAL EFFECTS. RESULT IN DEMAND THAT CANNOT BE MET BY EXISTING OR REASONABLY FORESEEABLE FUTURE SERVICE CAPACITY.

The Mather South Project would include the construction of water lines located throughout the site as illustrated on Plate WS-7. A grid of 8-inch to 12-inch mains would extend from ~~the existing 30-inch diameter NSA Pipeline Phase A water main transmission main in Kiefer Boulevard,~~ the existing 16-inch diameter water line in Zinfandel Drive (south of Douglas Road) and the existing 16-inch diameter water line in Sunrise Boulevard to serve local neighborhoods and commercial uses within the Plan Area. Additionally, a new ~~one~~**ten**-million-gallon water tank **farm** would be constructed in the northeastern portion of the Plan Area to serve the greater NSA. However, the need for the tank **farm** is related to the greater cumulative demand from anticipated storage needs within the NSA. The tank **farm** would be required when demands from new connections exceed the current storage capacity of the system. Depending on the timing of adjacent development and the water demands resulting from such development, the construction of the tank **farm** may not be required to serve the Plan Area. The tank **farm** would be served by an extension of the NSA Pipeline Phase B as depicted in Plate WS-7. The Mather South Community Master Plan anticipates that SCWA would construct the tank **farm** and the extension of the NSA Pipeline Phase B

as future demands dictate. At any rate, the location of the tank **farm** is within the Mather South Plan Area, the impacts of which would be onsite and have been evaluated throughout each of the resource sections of this EIR.

Each of the water service pipeline extensions and water tank **farm** location would be located within areas already proposed for development within the Plan Area. Proposed grading, excavation, and construction activities associated with the trenching for new water service infrastructure could include clearing and grading; excavation; stockpiling of soils and materials; and other typical construction activities. These construction activities could result in ground disturbance, sedimentation, and the possibility of pollutants if they are washed into surface waters. Additionally, construction activities result in the use of hydrocarbons such as fuels and oils, as well as activities that result in noise.

Construction-related activities from development of water supply infrastructure may result in physical environmental impacts to resource areas such as air quality, biological resources, cultural resources, and noise. These impacts are evaluated in applicable resource chapters of this EIR and impacts are mitigated as described within those resource chapters. No new offsite water distribution or treatment infrastructure would be needed for the project as adequate supplies and treatment capacity is available to meet project demands. Therefore, project impacts as a result of construction of new water supply infrastructure would be **less than significant**.

MITIGATION MEASURES

None required.

IMPACT: HAVE SUFFICIENT WATER SUPPLIES AVAILABLE TO SERVE THE PROJECT FROM EXISTING ENTITLEMENTS AND RESOURCES, OR ARE NEW OR EXPANDED ENTITLEMENTS NEEDED?

As described above, the SCWA is the purveyor of water to the Plan Area. SCWA utilizes a coordinated approach to manage surface water and groundwater supplies to maximize the yield of available water resources. The conjunctive use program for SCWA includes the use of groundwater, surface water, remediated water, and recycled water supplies. The program also includes the construction of a surface water diversion structure, a surface-water treatment plant, and water conveyance pipelines, as well as groundwater extraction, treatment, and distribution facilities (SCWA 2018).

The conjunctive use program relies on an abundance of surface water in wet years when as much surface water as possible is diverted, within entitlement limitations, minimizing the use of groundwater. During these years the groundwater aquifer is allowed to naturally replenish. In dry years, when surface water availability is reduced, SCWA pumps more groundwater from the replenished aquifer. Using surface water and groundwater conjunctively makes it easier for SCWA to meet demands in a single-dry year or in multiple-dry years. The goal of the conjunctive use program is to meet all demands during wet and dry years.

SCWA and has prepared a WSA in accordance with the California Water Code. The water demands associated with the Mather South Project have been included and addressed in the latest Zone 41 UWMP (SCWA 2016a) and the Zone 40 WSIP (SCWA, 2016b).

The total project area is estimated to be 848.31 acres and based upon the proposed land uses listed in Table WS-1, would result in a total of 3,522 dwelling units and 800,000 sq/ft of commercial and education/research uses. The project would be anticipated to have an annual average demand of 1,483.61 ac-ft/yr (including 7.5 percent for system losses). The project land uses and estimated water demand for the project is provided in Table WS-1.

Table WS-1: Projected Water Demand for Mather South Project

Land Uses	Units/Sq. Ft.	Unit Water Demand Factor (ac-ft/yr)	Acreage	Water Demand (ac-ft/yr)
Residential Designations				
Residential Dwelling 5-7 units/acre	1,950	2.13	310.93	662.28
Residential Dwelling 8-10 units /acre	791	2.44	87.24	212.87
Residential Dwelling 20 units/acre	781	3.33	34.07	113.45
Subtotal	3,522	-	432.25	988.60
Commercial + Office Zones				
Commercial-Retail/Clubhouse	200,000	2.02	26.86	54.26
EEC/Research & Development Campuses	600,000	2.02	44.25	89.39
Subtotal	800,000	-	71.11	143.65
Public/Quasi Public Zones				
Public- Schools	-	.81	22.19	17.97
Public- Water Storage Facility	-	.81	5.27	4.27
Subtotal	-	-	27.46	22.24
Park + Open Space Zones				
Parks/Landscape/Trail Corridors	-	2.80	62.36	174.61
Open Space	-	-	192.17	-
Roadways	-	.81	62.97	51.01
Subtotal	-	-	317.5	225.62
Units	3,522		848.31	1,380.10
Sq. Ft.	800,000	7.5% Loss		103.51
Total Demand				**1,483.61**

Note: The land-use classification and acreage information were provided by the project applicant in October 2017; and the unit water demand factors used for water demand estimate uses were documented in the 2016 Zone 40 WSIP.

Table WS-2 illustrates the projected water demand growth for the project in 5-year increments.

Table WS-2: Projected Water Demand Growth in Five-Year Increments for the Project (ac-ft/yr)

	2020	2025	2030	2035	2040
Projected Water Demand	217.96	734.62	1,307.54	1,483.61	1,483.61
Note: the growth projection information was provided by the project applicant in October 2017.					

SCWA's existing supplies for normal and dry years would exceed the total projected buildout water demand for the entire NSA, including the project as illustrated in Table WS-3 below.

Table WS-3: Zone 40 Water Supply Sufficiency Analysis in Five-Year Increments (ac-ft/yr)

Water Year	2020	2025	2030	2035	2040
Normal Year (See Table 7-4, UWMP)					
Total Supply	82,900	82,900	87,900	97,900	97,900
Total Demand	48,121	55,490	63,288	71,143	79,278
Sufficiency (Supply Minus Demand)	34,779	27,410	24,612	26,757	18,622
Single Dry Year (See Table 7-6, UWMP)					
Total Supply	70,200	70,500	74,600	83,600	83,800
Total Demand	48,121	55,490	63,288	71,143	79,278
Sufficiency (Supply Minus Demand)	22,079	15,010	11,312	12,457	4,522
Multiple Dry Year (1) (See Table 7-8, UWMP)					
Total Supply	82,900	82,900	87,900	97,900	97,900
Total Demand	48,121	55,489	63,288	71,145	79,278
Sufficiency (Supply Minus Demand)	35,779	27,411	24,612	26,755	18,622
Multiple Dry Year (2) (See Table 7-8, UWMP)					
Total Supply	77,900	77,900	81,900	90,900	90,900
Total Demand	48,121	55,489	63,288	71,145	79,278
Sufficiency (Supply Minus Demand)	29,779	22,410	18,612	19,757	11,622
Multiple Dry Year (3) (See Table 7-8, UWMP)					
Total Supply	70,200	70,500	74,600	83,600	83,800
Total Demand	48,121	55,489	63,288	71,145	79,278
Sufficiency (Supply Minus Demand)	22,079	15,011	11,312	12,455	4,522
Source: SCWA 2016					

SCWA determined that it has sufficient water supplies to meet the water demands of the Mather South Project over the next 20 years during normal, single-dry, and multiple-dry years. SCWA's conjunctive use program is a sustainable water supply program that provides a 100-percent reliable water supply while protecting environmental values and stabilizing the groundwater basin underlying Zone 40.

- The Project will be served by water supplies made available through SCWA's conjunctive use program.
- A financing plan for SCWA's conjunctive use program for constructing facilities required for delivering groundwater and surface water to the Mather South Project has been approved by the County's Board of Supervisors through its adoption of the WSMP, Bond Feasibility Reports, and the Sacramento County Water Agency Code.

Therefore, the impacts related to water supplies are **less than significant**.

MITIGATION MEASURES

None required.

IMPACT: CONTRIBUTE TO GROUNDWATER PUMPING TO SERVE PROJECT GROWTH SUCH THAT THE AVERAGE ANNUAL SUSTAINABLE YIELD OF 273,000 ACRE-FEET FOR THE CENTRAL SACRAMENTO GROUNDWATER BASIN IS EXCEEDED?

As described above, project water demands would be met by a conjunctive use of primarily groundwater and surface water. The conjunctive use program relies on an abundance of surface water in wet years when as much surface water as possible is diverted, within entitlement limitations, minimizing the use of groundwater. During wet years the groundwater aquifer is be allowed to naturally replenish. In dry years, when surface water availability is reduced, SCWA pumps more groundwater from the replenished aquifer. Using surface water and groundwater conjunctively makes it easier for SCWA to meet demands in a single-dry year or in multiple-dry years (SCWA 2018).

SCWA pumps groundwater from the South American Sub-basin, which is a portion of the Central Basin underlying Zone 40. SCWA is a signatory to the WFA and member of the Sacramento Central Groundwater Authority, and as such, is responsible for recognizing and implementing the sustainable long-term average annual yield for the Central Basin of 273,000 acre feet (Water Forum 2000). The long-term annual pumping limit is described as the hydro-geologic process under which the groundwater can be pumped and not exceed average natural recharge over the long-term.

In addition, SCWA receives a remediated groundwater supply of 8,900 af/yr in accordance with the terms and conditions in the agreement entitled "Agreement between Sacramento County, SCWA, and Aerojet-General Corporation with Respect to Transfer of GET Water" dated May 2010. The timing and amount of remediated groundwater available is subject to change as a result of on-going negotiations with water purveyors affected by groundwater contamination and with Aerojet/Boeing as remediation plans are subject to changes as directed by regulatory agencies. The

remediated supply is diverted by SCWA from the Sacramento River at Freeport, along with SCWA's surface supplies. Table WS-4 below describes SCWA's projected availability of groundwater over the next 20 years.

Table WS-4: SCWA Projected Groundwater Supply Availability (AF/Year)

	2020	2025	2030	2035	2040
Groundwater	47,000	47,000	52,000	62,000	62,000
Remediated Groundwater	8,900	8,900	8,900	8,900	8,900
Total	55,900	55,900	60,900	70,900	70,900

As a part of the SCGA, SCWA has committed to the implementation of the Central Basin GMP. The Central Basin GMP contains five Basin Management Objectives (BMOs) designed to maintain a safe, sustainable, and high-quality groundwater resource within the Central Basin. The BMOs are designed to manage and monitor groundwater levels within the basin and include limits on annual extractions, maintenance of groundwater elevations, protection against subsidence, protection against adverse impacts to surface water flows in nearby rivers, and water quality objectives (SCWA 2018).

Additional protection against overdrafting of the groundwater resources within the Central Basin is provided by state legislation. The Sustainable Groundwater Management Act (SGMA) was enacted in 2014 and amended in 2015. SGMA requires groundwater management in priority groundwater basins. The South American Subbasin which underlies Zone 40 has been identified as high or medium priority, but not critically overdrafted, which requires that a groundwater sustainability plan (GSP) be prepared for management of the resource by January 31, 2022.

Therefore, as described within the Mather South WSA, because project water demands would be met through the conjunctive use of surface and groundwater supplies and adequate supplies are available such that overdraft of the underlying groundwater basin would not occur, the project would result in ***less than significant*** impacts related to groundwater use.

MITIGATION MEASURES

None required.

IMPACT: INTERFERE SUBSTANTIALLY WITH GROUNDWATER RECHARGE SUCH THAT THERE WOULD BE A NET DEFICIT IN AQUIFER VOLUME OR A LOWERING OF THE LOCAL GROUNDWATER TABLE LEVEL?

As described above, the groundwater in the Central Basin portion of the South American Subbasin is managed by the SCGA. Recharge of the aquifer system occurs along active river and stream channels where extensive sand and gravel deposits exist, and especially along the American, Cosumnes, and Sacramento rivers. Additional recharge occurs along the eastern boundary of Sacramento County at the transition

point from the consolidated rocks of the Sierra Nevada to the alluvial-deposited basin sediments. This recharge is classified as subsurface recharge along with underground flow into and out of the basin with adjacent groundwater basins. However, as described in the Mather South WSA and the 2015 UWMP, intensive groundwater use in the Central Basin over the past 60 years has resulted in a general lowering of groundwater elevations. There has been a single cone of depression that is centered over the southwest portion of the basin, and approximately 15 miles southwest of the Mather South Plan Area, near the City of Elk Grove. The wells nearest the project site have groundwater level trends that vary between 40 feet above to 40 feet below mean sea level (SCWA 2018).

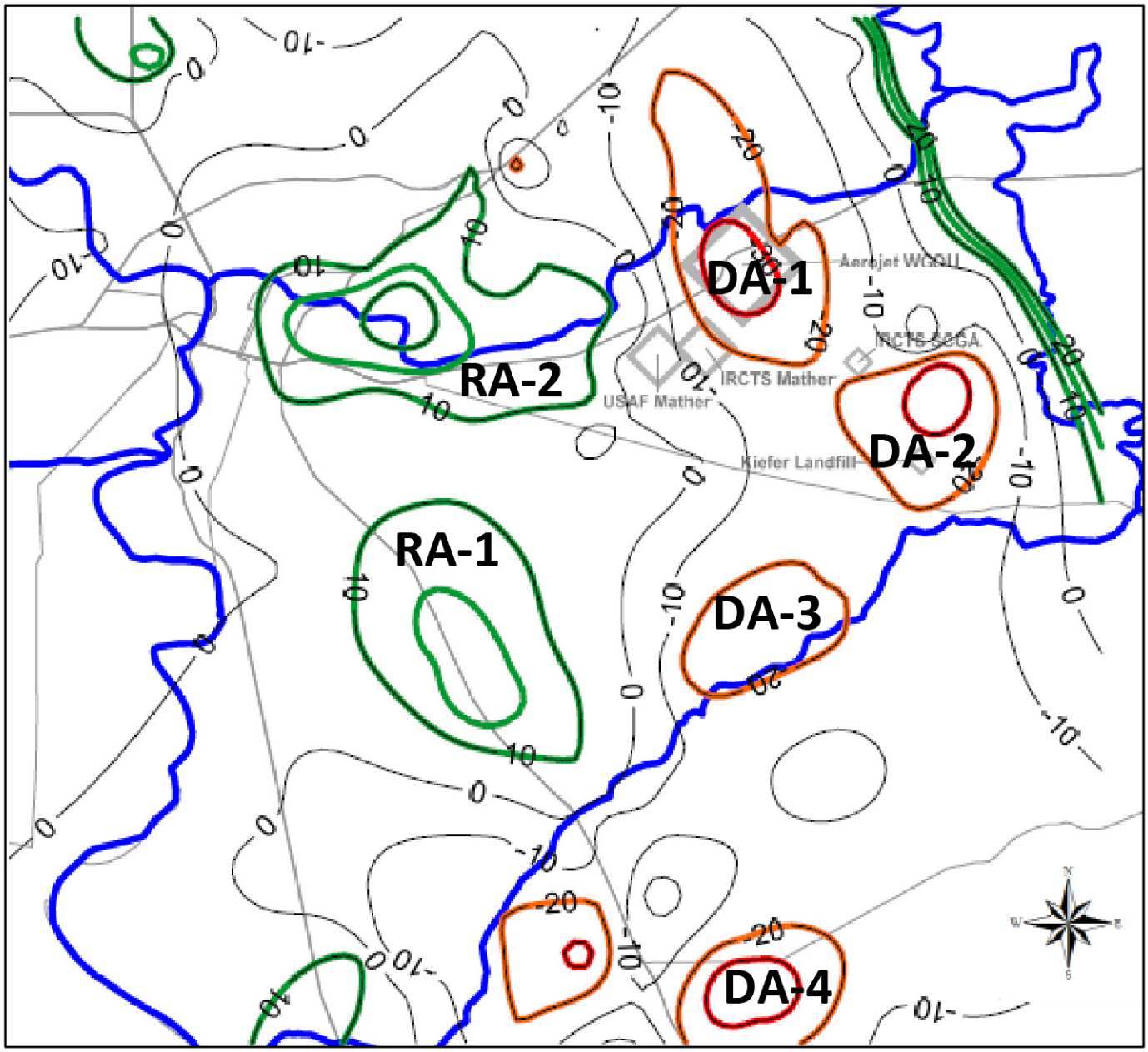
A summary of the changes occurring in the Central Basin as described in the 2014 SCGA SGMA Submittal demonstrates that the basin is beginning to recover from the historical overdrafting that had occurred. In general, a map of changes in groundwater levels within the basin from 2005 to 2015 demonstrates that the basin is in a period of recharge, with the exceptions of areas in the eastern and southern portions of the basin that are being pumped as a result of groundwater remediation programs from historical contamination (Plate WS-8). The difference contour map below provides the best roadmap to illustrate the changes occurring in the groundwater basin and the level of management taking place. The contour lines in the figure represent 10 foot (and 5 foot in the extreme points) intervals of elevation change between 2005 and 2015. Red and orange contour lines represent a decrease in groundwater elevations (storage loss), and light green and dark green contours represent an increase in groundwater elevations (storage gain). Some decline is noted along the Cosumnes River (DA-3 and DA-4) as a result of drought conditions and less total water available for recharge; however, this area has previously demonstrated high levels of resiliency and is expected to recharge with the return of wet year conditions (SCGA 2017).

The Mather South Project would introduce impervious surfaces that prevent or hinder groundwater recharge; however, most of the recharge and groundwater storage in the Central Basin occurs from subsurface flow, which would not be adversely affected by implementation of the project. Additionally, the Mather South Project includes approximately 210-acres of open space which is approximately 25 percent of the Plan Area, including 50.4-acres of stormwater management basins (~~nine~~**ten** basins) which would allow for the percolation of stormwater.

The basins would be connected to the open space corridors that are included in the project. The corridors would convey storm water to the basins, which would be naturalized with trees and native plant materials, and with contoured grading such that they blend with the surrounding terrain and the drainage corridors. The inclusion of basins would reduce the overall impact of impervious surfaces created by the project. Therefore, impacts would be **less than significant** related to groundwater recharge.

MITIGATION MEASURES

None required.



Groundwater Elevation Difference (2015 minus 2005)

Source: Mather South Community Master Plan 2018

X15010101 08 054

Plate WS-8: Groundwater Recharge Area

ASCENT ENVIRONMENTAL

19 SUMMARY OF IMPACTS AND THEIR DISPOSITION

SIGNIFICANT EFFECTS WHICH CANNOT BE AVOIDED

Section 15126.2(b) of the State CEQA Guidelines requires that an EIR describe any significant impacts that cannot be avoided, even with the implementation of feasible mitigation measures. The evaluation of resources in Chapters 3 through 18 of this ~~draft~~ EIR identifies significant impacts in aesthetics, air quality, biological resources, noise, traffic and circulation that remain significant and unavoidable after mitigation.

AESTHETICS

DEGRADATION OF EXISTING VIEWS AND VISUAL QUALITY

The Mather South Project would substantially change the existing viewshed due to the introduction of urban levels of development, and because of the substantial changes in the types of land uses and introduction of buildings and infrastructure into the viewshed. Though this would increase the diversity of the view, the loss of grassland and undeveloped views across the Plan Area would result in permanent changes to visual quality and would significantly and negatively impact viewshed. No mitigation is available.

~~*NEW SOURCES OF LIGHT OR GLARE*~~

~~Project lighting that would include roadways, traffic lights, signage, and safety lighting within residential neighborhoods and around parking lots would introduce a substantial new source of light. These impacts are due to the placement of a large urban development in an area currently dominated by open space. No mitigation is available.~~

AIR QUALITY

LONG-TERM OPERATIONAL EMISSIONS OF NO_X, ROG, PM_{10}, AND $PM_{2.5}$

Development of the Mather South Project would result in the generation of long-term operational emissions of reactive organic gases (ROG), oxides of nitrogen (NO_X), and particulate matter (PM_{10} and $PM_{2.5}$) because of mobile, stationary, and area-wide sources. Mobile-source emissions of criteria air pollutants and precursors would result from vehicle trips generated by residents, users of the parks, students at the schools, employee commute trips, and other associated vehicle trips (e.g., delivery of supplies, maintenance vehicles for commercial and retail land uses). Stationary and area-wide sources would include the combustion of natural gas for space and water heating (i.e., energy use), the use of landscaping equipment and other small equipment, the periodic application of architectural coatings, and ROG from the use of consumer products. Mitigation would include implementation of the Air Quality Mitigation Plan which would introduce traffic calming measures, electric vehicle infrastructure, building energy efficiency design features, and high efficiency appliances and lighting, impacts would still be significant.

BIOLOGICAL RESOURCES

SWAINSON'S HAWK

Swainson's hawk are known to occur within the Plan Area. There are numerous trees in the Plan Area that provide potential nest sites and project implementation would result in removal of these trees and removal of approximately 592 acres of annual grassland foraging habitat, which could result in mortality of individuals and nest abandonment. The Mather Preserve protects approximately 1,383 acres of foraging habitat, however, development of the Mather South Project would result in a net loss of foraging habitat for nesting pairs within 10 miles. Loss of active nests, chicks and eggs, displacement of breeding pairs, and loss of reproductive success due to loss of foraging habitat would contribute to the continuing decline of a species that is listed as threatened under CESA, has experienced an estimated 90 percent decline in statewide population numbers, and that is continuing to lose valuable habitat from its core population centers in the Sacramento Valley. The loss of nesting and foraging habitat increases the potential for this species becoming endangered and decreases the potential for recovery. Mitigation would include nest avoidance, however impacts would be significant and unavoidable due to loss of habitat.

BIOLOGICAL IMPACTS ASSOCIATED WITH OFFSITE IMPROVEMENTS

Detailed construction plans are not available and specific locations for offsite infrastructure are unknown, impacts associated with offsite improvements are discussed at a programmatic level. While some of the offsite improvements, including roadway and energy infrastructure, may occur within existing rights-of-way that do not provide suitable habitat for special-status or other sensitive biological resources, other offsite improvements may occur in areas that contain habitat for special-status species, or other sensitive resources including waters of the U.S., riparian habitat, and native trees. Additional environmental analysis would need to be completed before any of the offsite improvements can proceed unless such analysis has already been completed for the respective infrastructure project. These impacts would be potentially significant, and it cannot be confirmed that they can be mitigated; this impact is significant and unavoidable.

HYDROLOGY, DRAINAGE, AND WATER QUALITY

FLOODING

On-site flooding: The project Storm Drainage Plan analyzes at a plan-level the drainage requirements for buildout of the Mather South Project and evaluates the proposed drainage facilities to maintain downstream drainage impacts at or below existing conditions. The study establishes a conceptual backbone drainage system, tributary watersheds, the location of drainage facilities, pre-development and post-development flows, required flood detention and post-project water quality conditions. Since the Storm Drainage Plan is conceptual and prepared for a plan-level analysis, additional detailed design calculations would need to be prepared for subdivision map improvement plans.

Off-site flooding: The Mather South Project is designed so that peak flows are attenuated to pre-project conditions; however, there will be more volume leaving the site due to the increase in impervious surfaces. The Beach Stone Lakes Area Impact Analysis Memorandum indicates that while detention basins are designed to capture and keep peak runoff and not exceed existing conditions, an incremental amount of runoff may occur and contribute to the existing flooding condition downstream at the Beach Stone Lakes area.

NOISE

EXPOSURE OF NEW SENSITIVE RECEPTORS TO EXISTING AND NEW STATIONARY NOISE SOURCES

Implementation of the Mather South Project would result in the development of new land uses which would include new stationary noise sources and which may affect new sensitive receptors. Stationary mechanical equipment such as emergency generators, heating, ventilating, and air conditioning (HVAC) units would be included in various land uses within the project site (e.g. commercial, residential). Vehicular and human activity in parking lots, commercial activity at loading docks at retail locations and utility infrastructure, particularly electrical transmission lines and substations would generate noise with the potential to cause disturbance to new sensitive receptors. The Mather South Project's land use plan has the potential for new sensitive receptors to be located adjacent to the above mentioned stationary noise sources and has the potential to cause disturbance to new sensitive receptors, resulting in exceedance of Sacramento County Non-Transportation Noise Standards. The County's Noise Ordinance Section 6.68.120 would regulate the noise associated with operation of mechanical equipment in residential settings, ensuring that stationary sources included in new development would not exceed 60 dBA at one foot inside the property line or exceed 55 dBA outside of the neighboring living area window nearest the equipment location. For new stationary noise sources within non-residential zones, specific locations of noise generating sources are unknown at the plan level and may exceed the County's Noise Ordinance, therefore mitigation would include the preparation of a site-specific noise study and implementation of recommended noise control measures and reducing noise exposure to existing sensitive receptors by siting new stationary sources an adequate

distance away. However, because it may not be possible to adequately reduce noise impacts upon new and existing sensitive receptors, this impact remains significant and unavoidable.

Substantial Increase in the Existing Ambient Noise Levels

New land uses to be developed as part of the Mather South Project, specifically commercial/retail land uses, would result in the siting of new noise sources associated with stationary equipment as part of building operations as well as new commercial activities areas (i.e. loading docks). Project land uses which result in new vehicle trip generation would contribute to traffic volume increases along roadways in and around the Plan Area and increase traffic related noise levels in the surrounding area. A noise level increase of 5.0 dB, or greater, would typically be considered to result in increased levels of annoyance where existing ambient noise levels are less than 60 dB. Within areas where the ambient noise level ranges from 60 to 65 dB, increased levels of annoyance would be anticipated at increases of 3 dB, or greater. Increases of 1.5 dB, or greater, could result in increased levels of annoyance in areas where the ambient noise level exceeds 65 dB. Based on the traffic noise modeling conducted, several affected roadway segments and their adjacent land uses outside of the Plan Area would experience substantial increases in ambient noise levels, including portions of Eagles Nest Road, Kiefer Boulevard, and Zinfandel Drive. Generally, land uses along the affected roadway segments are not designated as noise sensitive uses, however, there are several existing single-family homes along Eagles Nest Road that would likely experience a perceptible increase in traffic noise. Mitigation would include the installation of sound barriers along Eagles Nest Road between Kiefer Boulevard and Jackson Road near the affected residences and paving with rubberized pavement materials however the impact would remain significant and unavoidable because it cannot be guaranteed that private property owners would agree to the construction of a sound barrier.

Traffic and Circulation

Impacts to Roadway Segment Operations

The Mather South Project would generate new vehicle trips and would exceed applicable level of service (LOS) and V/C thresholds along six roadway segments. The traffic analysis assumed that the Mather South Project would construct travel lanes on roadway segments that are internal to or on the boundary of the Mather South project, which would be greater than the number of lanes in the existing condition. This is a required condition of approval for all the Jackson Corridor projects. The construction of the additional traffic lanes on these internal or boundary roadway segments would affect whether impacts would exist at some point before full build out of the Mather South Project. The analysis provided in the Joint TIS provides a static picture of project-related impacts based on the baseline and cumulative assumptions used in the traffic model. In reality, the development of a community is dynamic with multiple projects occurring simultaneously to create and mitigate impacts. Ultimately, multiple projects may need to contribute to the same improvement to resolve their individual project-related impacts. Mitigation would include participation in the Jackson Corridor Transportation Mitigation

Strategy by constructing or providing funding for its fair share of transportation improvements identified in the master list of cumulative improvements, agreement to use of the County's Dynamic Implementation Tool (Tool) to determine required improvements, and implementation of the mitigation improvements determined through use of the Tool. However, as shown in Table TR-19, because the roadway segment of Zinfandel Drive from US 50 to White Rock Road has reached the maximum number of lanes allowed under the General Plan, there is no additional feasible mitigation to improve the LOS along this roadway segment to an acceptable level. Therefore, this impact would be significant and unavoidable.

Impacts to Intersection Operations

The Mather South Project would generate new vehicle trips and would trigger new signal warrants for some existing intersections. Signal warrant analysis was conducted for all unsignalized intersections along Jackson Road, and other unsignalized intersections near the project. With implementation of the Mather South Project, the following unsignalized intersections would experience traffic volumes resulting in one or more traffic signal warrants being met:

- Woodring Drive and Zinfandel Drive
- Happy Lane and Old Placerville Road
- Eagles Nest Road and Jackson Road

The addition of vehicle trips generated by project buildout would result in the exceedance of applicable LOS and delay thresholds. Mitigation would include the payment of fair share money toward improvements, however, it cannot be guaranteed that all of these improvements would be implemented concurrent with the phasing of development because of the dynamic and interrelated nature of mitigation improvements that would serve multiple development projects. If all improvements were implemented in a timely way, all intersection impacts would be reduced to a less-than-significant level. However, because the timing of implementation of all required improvements cannot be guaranteed and their implementation is not subject to the responsibility of just Mather South applicants and the County, it cannot be guaranteed that significant impacts to roadway segments would be reduced to a less than significant at the time of phased development. Therefore, this impact would be significant and unavoidable.

Freeway Facility Impacts

The evaluation of new vehicle trips provided in the traffic impact study for the Mather South Project indicated that the California Department of Transportation (Caltrans) thresholds for U.S. 50 freeway segments would not be exceeded and that peak hour freeway ramp intersection queuing would not result in queues that would extend into the ramp's deceleration area, onto the freeway, or queues greater than the available storage capacity. However, the westbound Watt Avenue to Howe Avenue weave segment would experience higher p.m. peak hour LOS than the overall freeway LOS.

Mitigation would include the implementation of intelligent transportation systems (ITS) and integrated corridor management (ICM) projects to reduce impacts since widening is infeasible. ITS is the application of technology to ground transportation to improve safety, mobility and efficiency. ICM projects focus on the management of corridors as a multimodal system and make operational decisions for the benefit of the corridor as a whole. The TCR and CSMP also identify potential improvements to parallel local facilities that would be expected to reduce travel demand on US 50. Project applicants would pay a fair share toward the construction of one of several identified improvements however, because the implementation of improvements would be outside of the jurisdictional control of Sacramento County, the impact would remain significant and unavoidable.

Roadway Functionality Impacts

The traffic analysis assumed that the Mather South Project would construct several travel lanes on roadway segments that are internal to, or on the boundary of the Mather South Project, and the entire roadway segment would be reconstructed to County standards. The timing of implementation of these additional traffic lanes on these internal or boundary roadway segments would affect whether or not impacts would occur as some point before full build out of the Mather South Project.

As shown in Table TR-26, implementation of the project would result in functionality impacts along 12 roadway segments within the project study area. Mitigation would result in fair share payments toward improvements. However, it cannot be guaranteed that all of these improvements would be implemented concurrent with the phasing of development proposed for the Mather South Project because of the dynamic and interrelated nature of mitigation improvements that would serve multiple development projects. If all improvements were implemented in a timely way, all impacts would be reduced to a less-than-significant level. However, because the timing of implementation of all required improvements cannot be guaranteed and is not subject to the sole responsibility of just Mather South applicants and the County, it cannot be guaranteed that significant impacts to roadway segments would be reduced to a less-than-significant at the time of development. Impacts would be significant and unavoidable.

Significant Effects Which Could be Avoided with Implementation of Mitigation Measures

The following impacts were determined to be less than significant with mitigation upon being evaluated in the Draft EIR.

Aesthetics

New Sources of Light or Glare

Project lighting that would include roadways, traffic lights, signage, and safety lighting within residential neighborhoods and around parking lots would

introduce a substantial new source of light. These impacts are due to the placement of a large urban development in an area currently dominated by open space. Mitigation would ensure that only light fixtures approved by the International Dark Sky Association would be used within the project.

AIR QUALITY

CONSTRUCTION EMISSIONS OF CRITERIA AIR POLLUTANTS AND PRECURSORS (NO_X, ROG, PM_{10}, AND $PM_{2.5}$)

Construction activities associated with the Mather South Project would result in the use of construction vehicles, operation of automobiles for worker trips, and other miscellaneous activities (e.g., building construction, asphalt paving, application of architectural coatings). Fugitive dust emissions of PM_{10} and $PM_{2.5}$ are associated primarily with site preparation and vary as a function of soil silt content, soil moisture, wind speed, acreage of disturbance, and vehicle miles traveled on and off the site. Emissions of ozone precursors, ROG and NO_X, are associated primarily with construction equipment and on-road mobile exhaust. Paving and the application of architectural coatings results in off-gas emissions of ROG. PM_{10} and $PM_{2.5}$ are also contained in vehicle exhaust. With implementation of mitigation that controls fugitive dust emissions and exhaust emissions, impacts are reduced to less than significant.

EXPOSURE OF SENSITIVE RECEPTORS TO TACS

Sensitive receptors could be exposed to toxic air contaminants (TACs), especially diesel fuel, during construction and operation of the Mather South Project. Construction-related activities would result in temporary, intermittent emissions of diesel PM from the exhaust of off-road, heavy-duty diesel equipment for site preparation (e.g., demolition, clearing, grading); paving; application of architectural coatings; on-road truck travel; and other miscellaneous activities. Operation of some land uses developed under the Mather South Project would result in new sources of TACs associated with new vehicular trips on existing and new roadways, as well as new sources of diesel PM associated with commercial loading docks visited by diesel-powered delivery trucks and backup diesel generators. Construction activities would not expose new or sensitive receptors to TACs, and mitigation that would reduce exposure of sensitive receptors to loading docks would reduce operational impacts to less than significant.

EXPOSE SENSITIVE RECEPTORS TO ODORS

The occurrence and severity of odor impacts depends on numerous factors, including: the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of the affected receptors. While offensive odors rarely cause any physical harm, they can still be very unpleasant, leading to considerable distress among the public and often generating citizen complaints to local governments and regulatory agencies. Minor odors from the use of diesel equipment during construction activities would occur but would not be acute enough to create an odor impact. Operation of the project would result in new diesel-fuel delivery trucks visiting commercial loading docks within the project however this is typical of urban uses. The Sacramento Rendering

Plant is across Kiefer Boulevard from the project and the project would bring new sensitive receptors to an area of the County that could experience unpleasant odors from the existing plant. Ongoing permitting activities and design considerations implemented at the time of site plan development (i.e., building orientation, window type, and other relevant odor controls) would result in mitigation of future odor impacts to less than significant.

AIRPORT COMPATIBILITY

SAFETY HAZARD TO PEOPLE LIVING AND WORKING IN THE VICINITY OF AN AIRPORT/AIRSTRIP

Airport safety zones are established to minimize the number of people exposed to aircraft crash hazards. According to the compatibility land use plan (CLUP) for Mather Airport, a portion of the Mather South Plan Area is located within the Overflight Zone, which is the least restrictive for development. There are no areas of the Plan Area that are located in the Clear Zone or the Approach/Departure Zones. Mitigation that would require the Airport Land Use Commission to review development plans prior to issuance of building permits would reduce this impact to less than significant.

EXPOSURE TO EXCESSIVE NOISE LEVELS ASSOCIATED WITH AIRPORT OPERATIONS

The Mather South Plan Area is approximately one mile from the Mather Airport and would be subjected to noise generated from existing and projected future airport operations. Mitigation that would require the Mather South Project to comply with standards in the County's Noise Element prior to issuance of building permits would reduce this impact to less than significant.

BIOLOGICAL RESOURCES

BIRD SPECIES

The Mather South Project would result in the conversion of 592 acres of grassland to urban uses. All of the species listed above use grasslands for foraging and/or nesting and would be impacted by the project. The following bird species are identified as having potential to occur on or near the Plan Area: tricolored blackbirds, burrowing owl, northern harrier, white-tailed kite, **Cooper's hawk,** and loggerhead shrike. Mitigation would include the following: nest avoidance, preconstruction surveys, owl relocation plans, and compensation for loss of habitat and impacts would be reduced to less than significant.

MAMMAL SPECIES

Annual grassland and scrub, as well as open portions of cottonwood woodland throughout the Plan Area represents suitable habitat for American badger and two potential badger dens have been observed in the Plan Area and in the Mather Preserve. Mitigation includes preconstruction surveys, implementation of protective measures and worker awareness programs and impacts would be reduced to less than significant.

Although the potential for occurrence of pallid bat and western red bat in the Plan Area is low, suitable foraging and roosting habitat is present and these species may roost onsite. Given the wide range of habitats suitable for foraging within the County, the loss of foraging habitat within the Plan Area is not likely to be substantial. If roosts and maternity colonies are present in mature trees and structures within the Plan Area, the removal of these trees and structures could result in the loss of bats and reproductive capacity which could further reduce the population of bats in the region. Therefore, the loss of roosts or disruption of maternity colonies in the Plan Area would be a potentially significant impact. Implementation of Mitigation Measure BR-23 would reduce potentially significant impacts on special-status bats to less than significant with mitigation because this measure requires conducting surveys for roost sites, identifying any roosts in the Plan Area, implementing procedures to reduce mortality, and compensation for lost roosts.

Reptile, Amphibian, and Insect Species

Vernal pool tadpole shrimp, a species listed as endangered under the Endangered Species Act (ESA), is known to occur in the Plan Area. Three other special-status vernal pool invertebrate species, vernal pool fairy shrimp, midvalley fairy shrimp, and Ricksecker's scavenger beetle, have high potential to occur in the Plan Area because suitable habitat is present, and they have been documented within the Mather Field Specific Plan area, west of the Plan Area. All the designated critical habitat is outside of the Plan Area and the project would not adversely modify this critical habitat, however, there remains some potential for species to occur within portions of the Plan Area that would be developed. Mitigation would include the following: implementation of conservation easements, preparation of a hardpan restoration plan, compensation for loss of habitat and take of species, implementation of worker awareness programs, habitat protection during construction and impacts would be reduced to less than significant.

Western spadefoot (toad) has been previously documented in an onsite vernal pool and vernal pools, seasonal wetlands, and vernal swales throughout the Plan Area represent potentially suitable breeding habitat for this species. The one Plan Area vernal pool known to support breeding western spadefoot would be retained within the Open Space Mather Preserve; however, there is potential for this species to be present in other onsite wetlands and throughout the upland habitats. Mitigation would include the above described measures, and pre-construction surveys and minimization of take measures and impacts would be reduced to less than significant.

Project development would result in removal of all, or nearly all, elderberry shrubs existing in the Plan Area and these shrubs could contain larvae of valley elderberry longhorn beetle. Mitigation would include compensation for the loss of habitat and impacts would be reduced to less than significant.

The western pond turtle has been documented at Mather Lake and there is potential for western pond turtle to nest, bask, or overwinter in those portions of the Plan Area that

are within 1,650 feet of the lake. Mitigation includes preconstruction surveys and avoidance of nests if needed and impacts would be reduced to less than significant.

Plant Species

Seven ~~Five~~ special-status plant species are known or have potential to occur in the Mather South Plan Area: slender orcutt grass, Sacramento orcutt grass, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, **dwarf downingia,** **pincushion navarretia** and legenere. Slender orcutt grass and Sacramento Orcutt grass (vernal pool grasses) are formally protected under ESA and the California ESA. The Mather Preserve would protect most of these species of grasses, however there is the potential to occur within the 848-acre Plan Area. Special-status plants that were found in the Plan Area during the 2002-2003 botanical surveys consist of Ahart's dwarf rush and legenere. The vernal pools where these surveys observed the plants would be lost to development. Mitigation would require pre-construction surveys and avoidance or mitigation for loss would be pursued if plants were noted. Mitigation would also include implementation of mitigation listed above for reptile and amphibian species, and pre-construction floristic surveys with loss compensation and impacts would be reduced to less than significant.

The Mather South Project would convert approximately 706 acres of undeveloped grassland and other habitat forms into developed uses, but the Plan Area does not include areas that are mapped as being important to wildlife movement. Mitigation would include preconstruction surveys for nesting birds and impacts would be reduced to less than significant.

Wetlands and Waters

The Mather South Project would result in the loss of approximately 15.09 acres of waters of the United States consisting of 14.72 acres of wetlands and 0.37 acre of other waters (stream/creek). The majority of stream/creek habitat in the Plan Area would be preserved within the Open Space Drain land use and 4.29 acres of the wetland habitat would be ~~preserved~~ **avoided** in the Open Space preserves. There is a total of 24.92 acres of potential waters of the United States in the Plan Area, of which approximately 9.83 acres would be preserved onsite. Mitigation would include the measures described above for reptiles, amphibians, and insects and compensation for loss and impacts would be less than significant.

Native and Nonnative Trees

A comprehensive tree survey in the Plan Area in 2014 identified 455 native trees with a diameter at breast height (DBH) of 4 inches or greater, of which 453 are Fremont cottonwood and two are Pacific willow. The Plan Area also includes 22 nonnative trees with a DBH of 6 inches or greater. Mitigation would include compensation for the removal of native trees and replacement of nonnative tree canopy and impacts would be reduced to less than significant.

CLIMATE CHANGE

PROJECT GREENHOUSE GAS EMISSIONS

Development of the Mather South Project would result in greenhouse gas (GHG) emissions from energy consumption (e.g., electricity use, natural gas use, water use), mobile sources (i.e., project-generated vehicle miles traveled (VMT)), and from waste generation at offsite landfills. Energy-related emissions associated with the proposed residential land uses would result in 0.57 $MTCO_2e$ per capita, which is below the 0.73 $MTCO_2e$ per-capita threshold. Energy-related missions from nonresidential land uses would result in 2.97 $MTCO_2e$ per 1,000 square feet, which is below the 4.28 $MTCO_2e$ per 1,000 square feet threshold. However, emissions from project-generated VMT in 2032 would result in 2.46 $MTCO_2e$ per capita, which is above the 1.47 $MTCO_2e$ per-capita threshold. The surplus of emissions reductions from the residential and nonresidential sectors can be applied to GHG emissions reductions needed for the mobile sector. The additional reduction of 2,659 $MTCO_2e$/year would reduce the mobile sector's per capita emissions to 2.17 $MTCO_2e$. Mitigation would include implementation of the Air Quality Mitigation Plan, implementation of onsite GHG emissions mitigation, and purchase of carbon offsets as needed and this impact would be reduced to less than significant.

CULTURAL RESOURCES

HISTORIC RESOURCES

Based upon the conclusions of the studies discussed previously, a total of 23 cultural resources (archaeological and built environment resources) were identified adjacent to or within the Mather South Plan Area. The ICF Addendum Reports conclude that none of these resources meet the criteria for listing in the National Register of Historic Places (NRHP) and/or the California Register of Historic Resources (CRHR). There does not appear to be the potential for a historic district or a historic landscape for which these resources might be considered as contributing elements. Consequently, none of the 23 buildings, structures or objects are considered historic resources for the purposes of CEQA. However, the potential for discovery of previously unidentified cultural resources exists. Mitigation includes work stoppage if resources are discovered and impacts would be reduced to less than significant.

ARCHAEOLOGICAL RESOURCES

No archaeological resources were identified as a result of previous studies conducted; however, it is still possible that significant buried archaeological materials are present within the Mather South Plan Area. Mitigation includes work stoppage if resources are discovered and impacts would be reduced to less than significant.

HUMAN REMAINS

There are no known human burial sites within the Mather South Plan Area; however, it is possible that buried human remains are present and have not been identified due to a

lack of surficial evidence. Mitigation includes work stoppage if human remains are discovered and impacts would be reduced to less than significant.

Tribal Cultural Resources

To determine the possibility of impacts to tribal cultural resources, County staff consulted with three separate tribal entities: The Ione Band of Miwok, the UAIC, and Wilton Rancheria. None of these tribes have indicated that tribal cultural resources are known within the Mather South Plan Area. However, there remains the potential to discover previously unknown tribal cultural resources. Mitigation includes work stoppage if resources are discovered and impacts would be reduced to less than significant.

Geology and Soils

Paleontological Resources

Construction of the Mather South Project would result in grading activities that could damage previously unidentified paleontological resources. Because grading and trenching would be relatively shallow, the potential for encountering resources would be low. Mitigation includes work stoppage if resources are discovered and impacts would be reduced to less than significant.

Hazardous Materials

Upset and Accidental Release

Construction associated with the Mather South Project would involve site grading, excavation, trenching, and demolition and construction of buildings. All activities have the potential to release hazardous materials into the environment because of the routine use of hazardous materials during these activities including fuel, lubricants, and solvents. The Plan Area contains decommissioned bunkers that may contain asbestos and could pose a risk to workers. The applicant would be required to get a permit from the local air district (SMAQMD). As part of the permit process, the applicant would need to show compliance with federal regulations and Air District Rule 902, which requires a survey for asbestos before demolition. The Plan Area also contains land that was previously used by the military and parts of which have been described as areas of environmental concern based upon the presence of contaminants in the underlying soils and groundwater. Although most of these sites have been remediated, excavation and construction activities at or near these areas could potentially expose construction workers and the general public to previously unidentified soil contamination. Additionally, there remains risk that munitions and explosives of concern may be located on or just under the surface, since munitions detection technology is not 100% reliable. Mitigation would include the preparation and implementation of a Hazardous Materials Contingency Plan, soil sampling, implementation of a soil contingency plan, and hazardous materials notification and impacts would be reduced to less than significant.

Hazardous Materials within Proximity to Schools

There are no existing schools within one-quarter mile of the Mather South Plan Area. However, two new schools are included within the Mather South Project. Both school sites would be located within one-quarter mile of identified hazardous waste cleanup sites within the Plan Area. Pursuant to Education Code sections 17071.13, 17072.13, 17210, 17210.1, 17213.1-3, and 17268 (described above under Regulatory Setting), a qualified consultant would be hired to complete a preliminary endangerment assessment (PEA) under the California Department of Toxic Substances Control (DTSC) oversight and review. The PEA includes the sampling of soils and risk assessment to determine whether a release of hazardous material has occurred, there is a threat of release, or a naturally occurring hazardous material poses a significant health risk. If no hazardous materials are identified, or if they do not pose a significant health risk, DTSC will approve the PEA and issue a determination letter stating that "no further action" is required. If required by DTSC because of health risks associated with hazardous materials are identified in the approved PEA, the local enforcement agency would prepare and implement a Response Action (cleanup, removal, or remediation of hazardous materials) under DTSC oversight and approval. Mitigation would include the preparation and implementation of a Hazardous Materials Contingency Plan, soil sampling, implementation of a soil contingency plan, and hazardous materials notification and impacts would be reduced to less than significant.

Listed Per Government Code Section 65962.5

Mather AFB, including the Plan Area, is a federal superfund site and the Phase I reported recognized environmental condition based on review of historic record, property records, and environment records, including the Cortese List. While those sites are listed as remediated, it is still possible that excavation and construction activities at or near those areas could expose workers to contamination that was previously unidentified. Mitigation would include the preparation and implementation of a Hazardous Materials Contingency Plan, soil sampling, implementation of a soil contingency plan, and hazardous materials notification and impacts would be less than significant.

Hydrology

Hydromodification

The Mather South Project would result in a change in existing drainage of the Plan Area because of the development of new land uses and infrastructure. Mather South Project includes multi-purpose detention basins which include stormwater quality features, that would be kept in the wet condition during the summer months due to the anticipated summer nuisance flows, and hydromodification mitigation features. Mitigation would require that a drainage study is prepared which describes how permanent stormwater quality treatment facilities would facilitate appropriate drainage in the post-project condition and impacts would be less than significant.

~~*Flooding*~~

~~The Mather South Plan Area includes both federal emergency management (FEMA) FIRM 100- and 500-year inundation areas as well as local floodplains. The project would construct new detention basins that would capture and detain peak runoff during storms, however, a nominal amount of water may occur and contribute to the existing flooding condition downstream at the Beach Stone Lakes area. Mitigation would include the project applicant paying a fair share contribution to the Beach Stone Lakes Mitigation Program fee for future improvements and impacts would be reduced to less than significant.~~

Land Use

Land Use Conflicts or Adjacency Issues

The Mather Field Project, which was approved in 2016, resulted in the redesignation of the Mather South Plan Area as an Urban Development Area which signaled the intent of the County to pursue a development plan for the area. The Plan Area is also within the Urban Services Boundary (USB) and Urban Policy Area (UPA) which indicates the intent to provide public services to the Plan Area. The project has been master-planned and would result in a mix of uses that are designed to complement each other to establish a new full-service community. Development standards and design guidelines would ensure orderly and consistent aesthetics throughout. However, the project would result in the development of residential uses near the existing Sacramento Rendering Plant which could result in adjacency conflicts. Mitigation would include implementation of design features to minimize adjacency issues, and notification to future owners of the presence of the plant prior to purchase and impacts would be reduced to less than significant.

Noise

Construction Noise

Construction activity associated with the development of land uses included in the Mather South Project as well as project related infrastructure would result in construction noise, although construction noise would be temporary in nature depending on the characteristics of the construction activity and land uses being developed. Noise associated with the construction of buildings, facilities, and infrastructure for land uses in the Mather South Project would be associated with the operation of off-road construction equipment including demolition and excavation equipment, material handlers, and portable generators. In addition to new noise sensitive land uses developed as part of the project, there is an existing residential neighborhood within the City of Rancho Cordova located approximately 500 feet to the east of the project site. Based on construction noise modeling results, noise levels would exceed both the Sacramento County exterior noise thresholds for both the daytime and nighttime standards. Mitigation would require the preparation and implementation of a noise monitoring plan and noise control measures.

Construction Vibration

The use of off-road heavy-duty construction equipment as well as other construction equipment (e.g., impact pile driver) can result in temporary ground vibration, depending on the type of equipment used and the type of construction activities occurring. At the lowest levels, vibration from construction activity can result in a detectable low rumbling sounds and, at its loudest levels, can result in annoyance and sleep disturbance. Typically, during construction activity, the highest vibration levels are generated from the use of pile drivers. Mitigation would require the preparation and implementation of a vibration control plan and implementation of vibration control measures and impacts would be reduced to less than significant.

Traffic and Circulation

Bicycle and Pedestrian Facilities

The Mather South Project would not remove any existing or planned bicycle or pedestrian facilities. Additionally, the Mather South Project would provide sidewalks and on-street (Class II) bike lanes on all collector, arterial and thoroughfare roadways. The Mather South Project also provides several off-street (Class I) multi-purpose trails. Sidewalks would be required as part of the frontage improvements along all new roadway construction in the Mather South Project vicinity in conformance with County design standards. Additionally, circulation and access to all proposed public spaces shall include sidewalks that meet Americans with Disabilities Act standards. Mitigation would require coordination with the County to identify necessary on- and offsite pedestrian and bicycle facilities to serve the individual project and which would ensure bicycle and pedestrian safety prior to tentative map approval and impacts would be reduced to less than significant.

Effects Found Not to be Significant

The following impacts were determined to be less than significant upon being evaluated in the Draft EIR.

Air Quality

Mobile-Source CO Concentrations

Mobile-source emissions from vehicle operations are measured locally, and are a function of traffic volume, speed, and delay. CO concentrations near roadways and/or intersections may reach unhealthy levels at nearby sensitive land uses, such as residential units, hospitals, schools, and childcare facilities. The Mather South Project would not generate enough vehicle trips to create an impact related to this criteria. This impact would be less than significant.

AIRPORT COMPATIBILITY

EFFECTS ON SAFE AND EFFICIENT USE OF NAVIGABLE AIRSPACE

The Mather Field Airport Land Use Compatibility Plan establishes height limits for buildings near the airport. Additionally, projects are required to comply with the Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace, which includes restrictions on wildlife attractors to prevent navigation hazards from occurring. The Mather South Project would be required to comply with height restrictions and as a result of developing a currently undeveloped grassland area, would decrease the potential for birdstrikes. This impact would be less than significant.

BIOLOGICAL RESOURCES

RIPARIAN HABITAT OR SENSITIVE NATURAL COMMUNITIES

The Plan Area does not contain designated sensitive natural communities other than vernal pools and the cottonwood woodland in the Plan Area is not associated with any water bodies. This impact would be less than significant.

CONFLICTS WITH SOUTH SACRAMENTO HABITAT CONSERVATION PLAN

The South Sacramento Habitat Conservation Plan (SSHCP) identifies the Plan Area as an urban development area and does not provide incidental take coverage to the Mather South Project. Mitigation for impacts to covered species is included in this EIR and would not conflict with the SSHCP conservation strategy for covered species. This impact would be less than significant.

CLIMATE CHANGE

CLIMATE CHANGE EFFECTS OF THE PROJECT

Based on currently available data, the project is not located within an area projected to experience a substantial increase in wildland fire risk or flooding as a result of climate changes in the future. Further water supply for the project would be adequate. Anticipated changes in future climate patterns are not anticipated to have any substantial adverse effects on the project. This impact would be less than significant.

ENERGY

WASTEFUL OR INEFFICIENT ENERGY CONSUMPTION

Project construction activity would result in gasoline consumption from construction worker commute trips, diesel fuel use from on-road diesel vehicles for vendor trips and off-road diesel construction equipment used in the construction of buildings, facilities and infrastructure. Operational activity associated with the project's land uses would generate new vehicles trips resulting in the consumption of gasoline, diesel fuel, natural gas, and electricity. Buildings and facilities as part of the project's various land uses would result in the consumption of electricity from lighting and appliances as well as

natural gas for water and space heating. The Mather South Project would incorporate energy conservation measures to reduce building energy consumption and vehicle miles traveled. This impact would be less than significant.

Exceed Available Energy Resources

The Mather South Project would require development of new natural gas and electricity infrastructure. Given the size and location of the Mather South Project, the project would result in new energy demand which would exceed the existing energy needs associated with the currently undeveloped Plan Area. However, as discussed above, the planning and development of energy infrastructure to support project implementation has been integrated into the project planning process and integrated to the project site plans. Therefore, this impact would be less than significant.

Geology and Soils

Seismicity

The Mather South Plan Area is not located within an Alquist-Priolo Earthquake Fault Zone or within the vicinity of a known fault. Sacramento County is also in one of the least susceptible areas for earthquake shaking potential and the Mather South Project would ensure that buildings are constructed in compliance with the California Building Code (CBC). This impact would be less than significant.

Erosion

The soil types mapped within the Plan Area have water erosion potential ranging from low to moderate. The most likely potential for erosion to occur would be during construction when soils would be graded and excavated, and may be exposed to the effects of wind and/or water for some length of time. The Mather South Project would be required to comply with the County's grading and erosion control ordinance which requires implementation of best management practices to curb erosion potential. This impact would be less than significant.

Expansive Soils

The Plan Area contains clayey soils with medium to high expansive properties with variations in moisture content. The Plan Area soils also exhibit low to high shrink-swell potential. The project would implement all engineering recommendations contained within geotechnical reports performed prior to construction activities, and would conform to criteria within the CBC. This impact would be less than significant.

Mineral Resources

Development of the Mather South Project would result in a permanent loss of access to mineral resources within the Plan Area. The Plan Area has been designated a part of the Urban Services Boundary, which indicates the County's intent for development of the site. Additionally, the site has not been designated by the State as an ARA, nor is it adjacent to any of the active mining sites in the vicinity. This impact would be less than significant.

HAZARDOUS MATERIALS

ACCIDENTAL RELEASE

Construction activities would occur within the Mather South Plan Area and would require the use of standard hazardous materials such as fuels, oils, lubricants, glues, paints, paint thinners, soaps, bleach, and solvents. All persons involved in the handling of these hazardous materials are required to use, store, and transport hazardous materials in compliance with local, state, and federal regulations during project construction and operational activities. Because construction and operation of the Mather South Project would implement and comply with federal, state, and local hazardous materials regulations and codes monitored by the state (e.g., California Occupational Safety and Health Administration, DTSC, California Highway Patrol, Caltrans) and/or local jurisdictions (e.g., Sacramento Metro Fire and Sacramento County Environmental Management Department), impacts related to creation of significant hazards for construction workers, employees, and the general public within the Plan Area through routine transport, use, and disposal of hazardous materials would be unlikely. Therefore, this impact would be less than significant.

WILDFIRE HAZARDS

The Plan Area is in a non-very high fire hazard severity zone within Sacramento County, as mapped by Metro Fire and the California Department of Forestry and Fire Protection (CAL FIRE 2008). As required by Policy SA-23 in the Sacramento County General Plan, plans for the facility would be provided to Metro Fire Department for review and comment regarding: adequacy of water supply; site design for fire department access into and around structures; ability for a safe and efficient fire department response; traffic flow and ingress/egress for residents and emergency vehicles; site-specific built-in fire protection; and potential impacts to emergency services and fire department response. Impacts would be less than significant.

HYDROLOGY

WATER QUALITY STANDARDS

The Mather South Project would result in construction of residential and commercial buildings, along with associated streets and other paved areas. Water quality impacts could occur during construction from increased soil erosion and sedimentation due to clearing of vegetation, alteration of drainages, and grading. Similarly, operation of the project could result in contaminated water runoff from automobiles, use of household chemicals in uncontained systems, and use of fertilizers which could result in pollution entering into streams that are used for recreation, wildlife habitat, and drinking. Implementation of best management practices that would result in control measures to remove pollutants prior to entering the stormwater system, such as vegetated swales and water quality detention basins, would allow pollutants to settle out prior to discharge. The Mather South Project would also comply with the County's Stormwater Ordinance and implement a Drainage Master Plan to reduce erosion. Impacts would be less than significant.

Dam/Levee Failure

The closest dam to the Plan Area is Mather Dam, which provides flood control to the Mather Lake, just north of the project site. In a breach study, the USACE determined that Zinfandel Drive would be overtopped and flows would generally follow the existing Morrison Creek along the west side of the project if a breach occurred. The next closest dams are over 12 miles north. Impacts would be less than significant.

Land Use

Physically Divide an Established Community

The Plan Area is undeveloped grassland, and the surrounding areas in adjacent parcels are also vacant with the exception of the Independence at Mather, north of the project site. The Mather South Project would result in the development of a comprehensive mixed-use residential project and would not result in the division of an existing community. Impacts would be less than significant.

Conflict with Land Use Plans, Policies, or Regulations

The Mather South Project would require the amendment of the General Plan from the existing Urban Development Area (795 acres) land use designation to a combination of the following: Low Density Residential (622 acres), Medium Density Residential (17 acres), Natural Preserve (86 acres), and Commercial and Offices (70 acres). The project would also require an amendment to the Transportation Plan and the County's Bicycle Master Plan. However, the project implements the policies of the General Plan and the vision of the Cordova Community Plan and is consistent with the County's Board of Supervisors direction to realize the conversion of the former Mather AFB land to a thriving mixed-use community.

The project also requires the entire Plan Area to be rezoned. The Mather Field Specific Plan would be amended to redesignate the portion of the Mather Field Specific Plan that encompasses the Mather South Plan Area, which is called the South Base Area and is currently designated as Urban Development Area (795 acres). It would be rezoned to the Mather South Community Master Plan (795 acres) and would reflect the adoption of the project and all accompanying Design Guidelines and Development Standards contained in the Community Master Plan. The governing SPA Ordinance would also be amended to reflect adoption of the Mather South Community Master Plan, Design Guidelines, and Development Standards into the ordinance.

The project is also consistent with the Mather CLUP and APPA. Overall, the project impacts are less than significant related to consistency with plans, policies, and regulations.

NOISE

OPERATIONAL TRAFFIC NOISE

Using the Caltrans traffic noise analysis protocol, project generated traffic volumes were analyzed for increases in traffic noise levels which may impact sensitive receptors. Under the existing plus project conditions, project generated traffic volume increases would generate noise levels above the Sacramento County's transportation noise threshold of 65 dB along several roadway segments. Land uses along Jackson Road segments in Sacramento County that would experience increases in traffic noise are designated Agricultural and are not considered noise sensitive uses. Land uses along Zinfandel Drive segments in the City of Rancho Cordova are zoned as Office Professional Mixed Use (OPMU), Commercial/Main Street District (CM-S), Retail Commercial (RC), Business Professional (BP0), and Low-Density Residential (LD) zoning designations. Only LD is considered a noise sensitive land use, and the presence of a 10-foot high sound wall would alleviate any increases in traffic noise generated by the Mather South Project. Impacts would be less than significant.

EXPOSURE OF EXISTING SENSITIVE RECEPTORS TO NEW STATIONARY NOISE SOURCES

This impact analysis evaluates non-transportation noise sources that would occur because of project operation, such as noise generated from mechanical equipment. The Mather South Project land uses that would be located adjacent to the existing Anatolia Village neighborhood within the City of Rancho Cordova would include residential, public, and a park. Typically, noise sources associated with residential land uses include heating, ventilating, and air conditioning (HVAC) units, lawn mowers and landscaping maintenance equipment. These types of mechanical equipment are typical of residential neighborhoods and would be compatible with Anatolia Village. Impacts would be less than significant.

PUBLIC SERVICES

FIRE PROTECTION AND EMERGENCY SERVICES

The Mather South Project would increase the demand for fire protection and emergency services provided by Metro Fire. The project includes 3,522 new dwelling units, commercial, retail, and civic uses. Utilizing the County's estimate of 2.64 persons per dwelling unit, the Mather South Project would increase the population of the Jackson Road corridor area by approximately 9,298 residents (i.e., 3,522 du x 2.64 persons). This increase in demand would require additional staff and fire facilities to maintain service levels and to ensure that adequate fire protection is provided. Metro Fire has indicated that the Mather South Project would trigger the need for a new fire station within the Plan Area. As a result, the project has included a new fire station site within the site plan, which is located along Gateway North Drive near Zinfandel Drive within a residential parcel (R1). The exact location and size of the parcel will be finalized when the land is dedicated; however, it would be required to meet Metro Fire location

requirements for new fire stations and be approved by the agency. Impacts would be less than significant.

Law Enforcement Services

The Mather South Project includes a maximum of 3,522 residential units which would provide housing for a residential population of approximately 9,298 residents, as well as associated non-residential uses, including commercial, retail, and civic uses which would increase the demand for law enforcement services to be provided by Sacramento County Sheriff's Department (SSD). SSD has substations located throughout the unincorporated county, including the closest one, Kilgore Station East Division located approximately 3.5 miles north in Rancho Cordova at 2897 Kilgore Road. SSD has indicated that the existing substation can accommodate new staffing and equipment that may be needed to serve the growth associated with the Mather South Project. The project would provide funding in the form of development impact fees and ongoing property taxes that would provide funding for additional staffing and equipment needed to maintain and improve service levels for law enforcement within the Mather South Plan Area and the surrounding areas. Impacts would be less than significant.

School Services

The Mather South Project is within the service area of the Elk Grove Unified School District. Development of the project would result in increases to the local student population. The project includes two elementary school sites within the Plan Area, each 10-12 acres in size, which would accommodate all of the potential elementary school students generated by the project, as well as students from other nearby areas. However, the project would increase demand for middle and high school capacity in a school district that is already considered over capacity. California Government Code Section 65995(h) states that the payment or satisfaction of a fee, charge, or other requirement levied or imposed pursuant to Section 17620 of the Education Code is deemed to be full and complete mitigation of the impacts for the planning, use, development, or the provisions of adequate school facilities. Section 65996(b) finds that these provisions provide full and complete school facilities mitigation. The Mather South Project would pay all fees related to school facilities consistent with SB50 and Government Code. Impacts would be less than significant.

Parks and Recreation Services

The County Land Development Ordinance (Title 22 of Sacramento County Code) requires new residential developments to dedicate land, pay a fee in lieu thereof, or provide a combination of dedication and in-lieu fees for park facilities consistent with Quimby Act requirements. The Quimby Act and the Sacramento County General Plan require 3-5 acres of parkland per 1,000 residents. The Mather South Project includes four neighborhood parks and one community park which are distributed throughout the Plan Area. The total proposed acreage of neighborhood parks would be 21.55 acres, with each ranging in size from 4.55 acres to 7.03 acres. The project also includes the construction of a 22.28-acre community park. Therefore, the total proposed park acreage within the Plan Area would be 44.03 acres. This would result in a shortfall of 1.43 acres of active parkland which is addressed in the Mather South Community

Master Plan policy 5-7 and would be made up by adjusting Park 1 in Phase 1 or by dedicating in-lieu fees consistent with Title 22 of the Sacramento County Code. Impacts would be less than significant.

Libraries

Residents of the Mather South Project would increase the demand for library services provided by the Sacramento Public Library Authority. The Mather South Plan Area is located within the Rancho Cordova/Sunrise Douglas Service Area. The Sacramento Public Library Authority Facility Master Plan 2007 – 2025 (Library Master Plan) addresses future library needs based upon an evaluation of anticipated growth by service area. The Library Plan calls for three to four new libraries within the vicinity of the Plan Area to accommodate projected growth, including the Mather South Project, by 2025. Impacts would be less than significant.

Public Utilities

Wastewater Treatment and Disposal

The project would require new infrastructure in order to provide wastewater service to the new land uses within the Plan Area. The project would connect to the planned sewer line extension along Zinfandel Drive and extend lines to Kiefer Boulevard. The backbone collection system within the Plan Area would include the construction of 8-inch, 10-inch, 12-inch, and 15-inch sanitary sewer collection lines within proposed street right-of-way. No offsite collection lines are proposed. Wastewater would be routed to the SRWTP which has capacity to treat the estimated 1.23 million gallons per day that the project would produce. A Level 1 sewer study for the Mather South project has been approved by Sacramento Area Sewer District, and a more detailed sewer study for the Plan Area would be prepared when subsequent tentative map applications are submitted for the project. Impacts would be less than significant.

Solid Waste Services and Capacity

The Mather South Project would allow for the construction of 3,522 residential units, approximately 800,000 square feet of commercial and office uses, and two elementary schools. Development of the project would result in an increased demand for solid waste services. The Mather South Plan area would be served by the Sacramento County Department of Waste Management and Recycling, which provides solid waste services to unincorporated areas of Sacramento County. Sacramento County owns and operates the Kiefer Landfill, located at Kiefer Boulevard and Grant Line Road, which is the primary municipal solid waste disposal facility in Sacramento County. The Kiefer Landfill facility would receive an estimated 9,855 tons of annual waste from the project's buildout. Cal Recycle's website indicates that the landfill's permitted capacity is approximately 117 million cubic yards and has a remaining capacity of approximately 113 million cubic yards. Therefore, impacts would be less than significant.

TRAFFIC AND CIRCULATION

TRANSIT IMPACTS

Public transit is not currently provided to, or in the vicinity of the Plan Area. As detailed in the Project Transportation Improvements section, a conceptual transit system to serve the Jackson Corridor Projects (including the Mather South Project) was developed by Sacramento County, SacRT, DKS Associates, and the applicants of the Jackson Corridor Projects as part of a joint transit planning process.

The proposed transit system is a condition of approval for the project and was assumed as an attribute of the Mather South Project and included in the traffic modeling and analysis in the Joint TIS. The assumed transit routes and service frequency would be required at full development of the Mather South Project. Impacts would be less than significant.

EMERGENCY ACCESS AND HAZARDOUS DESIGN FEATURE IMPACTS

The Mather South Project would provide new roadway connections which would provide for improved emergency access and connections within the project area; and thus, would not interfere with emergency response. Additionally, the project would not modify the existing roadway network such that emergency access along existing roadways would be impaired. Adherence to design guidelines and County road standards, and coordination with Metro Fire would minimize inconsistencies. Impacts would be less than significant.

WATER SUPPLY

WATER INFRASTRUCTURE

The Mather South Project would result in the extension of 8-inch and 12-inch supply lines to the Plan Area from ~~the existing 30-inch diameter North Service Area (NSA) Pipeline Phase A water main transmission main in Kiefer Boulevard,~~ the existing 16-inch diameter water line in Zinfandel Drive (south of Douglas Road) and the existing 16-inch diameter water line in Sunrise Boulevard. Additionally, a new ~~one~~**ten**-million-gallon water tank **farm** would be constructed in the northeastern portion of the Plan Area to serve the greater NSA. However, the need for the tank **farm** is related to the greater cumulative demand from anticipated storage needs within the NSA. The tank **farm** would be required when demands from new connections exceed the current storage capacity of the system. Depending on the timing of adjacent development and the water demands resulting from such development, the construction of the tank **farm** may not be required to serve the Plan Area. No new offsite water distribution or treatment infrastructure would be needed for the project as adequate supplies and treatment capacity is available to meet project demands. Therefore, project impacts as a result of construction of new water supply infrastructure would be less than significant.

WATER SUPPLY

Sacramento County Water Agency (SCWA) is the service provider to the Mather South Project and would provide a mix of surface water in wet years, with a higher utilization of groundwater during dry years. SCWA would also supplement surface and groundwater with remediated and recycled water as available. The water demands associated with the Mather South Project were included in the latest Zone 41 Urban Water Management Plan which estimates total water consumption for the project at 1,483.61 ac-ft/yr (including 7.5 percent system losses). SCWA's existing supplies for normal and dry years would exceed the total projected buildout water demand for the entire NSA. SCWA determined that it has sufficient water supplies to meet the water demands of the Mather South Project over the next 20 years during normal, single-dry, and multiple-dry years. Therefore, project impacts would be less than significant.

GROUNDWATER USE

SCWA is responsible for recognizing and implementing the sustainable long-term average annual yield for the Central Groundwater Basin of 273,000 acre feet. SCWA relies upon a conjunctive use supply program which alternates between surface and groundwater reliance in order to maintain the appropriate trajectory for groundwater basin sustainability. Additional protection against overdrafting of the groundwater resources within the Central Basin is provided by state legislation, and SCWA is responsible for complying with the Sustainable Groundwater Management Act. Therefore, because SCWA has determined that appropriate supplies for the Mather South Project are available without undermining the credibility of groundwater management, impacts would be less than significant.

GROUNDWATER RECHARGE

Recharge of the aquifer system occurs along active river and stream channels where extensive sand and gravel deposits exist, and especially along the American, Cosumnes, and Sacramento rivers. Additional recharge occurs along the eastern boundary of Sacramento County at the transition point from the consolidated rocks of the Sierra Nevada to the alluvial-deposited basin sediments. Intensive groundwater use in the Central Basin over the past 60 years has resulted in a general lowering of groundwater elevations. The Mather South Project would introduce impervious surfaces that prevent or hinder groundwater recharge; however, most of the recharge and groundwater storage in the Central Basin occurs from subsurface flow, which would not be adversely affected by implementation of the project. Additionally, the Mather South Project includes approximately 210-acres of open space which is approximately 25 percent of the Plan Area, including 50.4-acres of stormwater management basins (~~nine~~ **ten**basins) which would allow for the percolation of stormwater. Impacts would be less than significant.

RESOURCE AREAS THAT WERE SCOPED OUT OF THE EIR

CEQA allows a lead agency to limit the detail of discussion of the environmental effects that are not considered potentially significant (PRC Section 21100, CCR Sections 15126.2[a] and 15128). Based on a review of information prepared for the project and

comments received as part of the public scoping process (Appendix ~~A~~**PD-2**) as well as additional research and analysis of relevant project data during preparation of this Draft EIR, the following were identified as resources that would not experience any significant environmental impacts from the project. Accordingly, these resources are not addressed further in this Draft EIR but are identified below with a brief explanation as to why impacts to each resource are not anticipated, as required by CEQA.

- Agriculture and Forestry Resources
- Population and Housing

AGRICULTURE AND FORESTRY RESOURCES

The Plan Area is designated as an Urban Development Area and is within the Urban Services Boundary of the County's General Plan which designates the property for development. The Plan Area had been, until 1993, used for military purposes since the early 20th century. The California Department of Conservation's Farmland Mapping and Monitoring Program designates the Plan Area as approximately 95 percent Grazing land, which indicates the existing vegetation is suited to grazing, and about 5 percent as Urban and Built Up Land (CDC 2017). Additionally, the Plan Area does not contain suitable soils for agricultural, does not contain any Williamson Act contracts or agricultural zoning, and is not currently utilized for agriculture. The site consists of undeveloped grassland and is not used or zoned for forest land or timber harvest. While removal of some trees may be required for the project, no designated forest land exists on or near the Plan Area. For these reasons, no significant impacts related to agriculture and forestry resources would occur, and this issue is not discussed further in this EIR.

POPULATION AND HOUSING

The Mather South Project is designated as an Urban Development Area and is within the Urban Services Boundary of the County's General Plan which designates the property for development. The Plan Area is currently undeveloped and the project would not result in the removal of any existing housing, nor displace any current residents within the Plan Area or in the vicinity of the project. The project would result in the construction of approximately 3,522 residential dwelling units and would not induce growth or result in the elimination of any barriers to growth. Growth inducing effects are discussed in greater detail at the end of this chapter. For these reasons, the project would not have significant impacts related to population and housing, and the issue is not discussed further in this EIR.

IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA requires that EIRs assess whether a project would result in significant irreversible changes to the physical environment. The State CEQA Guidelines discuss three categories of significant irreversible changes that should be considered. Each is addressed below. Although the project would require commitment of resources, these

environmental changes are not considered significant for the purposes of this analysis. The primary irreversible environmental change associated with the Mather South Project involves the permanent conversion of undeveloped rural land with associated habitat values to a mix of land uses including residential, commercial, retail, and civic uses.

Changes in Land Use Which Commit Future Generations

Site preparation, construction, and operation of the project would irreversibly commit future generations to urban land uses on approximately 638 acres of the project site. The remaining 211 acres of the site would be maintained as a combination of natural preserve, drainage, utility easements, and landscape buffers.

Irreversible Damage from Environmental Accidents

No significant environmental damage, such as accidental spills or explosion of a hazardous material, is anticipated with development of the proposed mixed-use residential project. The use of hazardous materials beyond standard construction supplies and household hazardous waste is not proposed. Remediation of previously contaminated sites within the Plan Area would be completed as part of the project, and materials would be properly disposed of in accordance with federal, State, and local regulations.

Consumption of Nonrenewable Resources

Consumption of nonrenewable resources includes increased energy consumption, conversion of agricultural lands, and lost access to mining reserves. The presence of agricultural soils and mineral resources is not established for the Plan Area. As such, developing the property would not result in conversion of agricultural lands or loss of access to mineral resources.

Project construction would consume fossil fuels and other non-renewable or slowly renewable resources through the operation of vehicles and equipment for site grading and construction activities. Other resources, including materials such as wood products, metals, cement, asphalt, and other products, would be used or consumed during project construction or would be permanently committed as project materials. Operation of the project would also require additional electricity, water, and natural gas; however, the scale of such consumption would be typical for a mixed-use residential development of this size. For further discussion of energy use, refer to Chapter 11, Energy.

Cumulative Impacts

The State CEQA Guidelines Section 15355 defines a cumulative impact as “two or more individual effects which, when considered together, are considerable.” An individual effect need not itself be significant to result in significant cumulative effects; the impact is the result of the incremental effects of the project combined with the effects of “other closely related past, present, and reasonably foreseeable probable future projects.”

CEQA does not define "closely related," but the Code of Federal Regulations (40 CFR 1508.25) indicates that a "closely related" project is one which is automatically triggered by the project; one which cannot proceed without the project first proceeding (mutual dependency); one which requires the project for justification or is an interdependent part of the same action; or one which is a similar action with common timing, geography, and other features.

The requirements for a cumulative analysis are described in CEQA Guidelines Section 15130. A cumulative analysis "need not provide as great detail as is provided for the effects attributable to the project alone." The analysis should focus on analyzing the effects of the project to which other projects contribute, to the extent practical and reasonable. These other projects may be identified either through the provision of a list of cumulative projects, or via a summary of projections contained in an adopted General Plan or a certified EIR. This EIR uses a combination of the two methods, using projections contained in adopted General Plans and related planning documents, as well as known major reasonably foreseeable other projects.

The significance criteria used for analysis are the same as those used throughout the topical chapters of the EIR. Section 15130(a)(3) states that a project's contribution to an impact is "less than cumulatively considerable if the project is required to implement or fund its fair share of a mitigation measure or measures to alleviate the cumulative impact. The lead agency shall identify facts and analysis supporting its conclusion that the contribution will be rendered less than cumulatively considerable."

CUMULATIVE IMPACT ANALYSIS METHODOLOGY

State CEQA Guidelines Section 15355 defines a cumulative impact as two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. Section 15130(a)(3) of the State CEQA Guidelines states that an EIR may determine that a project's contribution to a significant cumulative impact will be rendered less than cumulatively considerable, and thus not significant, if a project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.

For purposes of this EIR, the project would have a significant cumulative effect if it meets either one of the following criteria:

- The cumulative effects of related projects (past, current, and probable future projects) without the project are not significant but the project's incremental impact is substantial enough, when added to the cumulative effects, to result in a significant impact; or
- The cumulative effects of related projects (past, current, and probable future projects) without the project are already significant and the project represents a considerable contribution to the already significant effect. The standards used

herein to determine "considerable contribution" are that the impact either must be substantial or must exceed an established threshold of significance.

The analysis herein evaluates whether, after adoption of project-specific mitigation, the residual impacts of the project would cause a cumulatively significant impact or would contribute considerably to existing/anticipated (without the project) cumulatively significant effects.

SCOPE OF THE CUMULATIVE ANALYSIS

The State CEQA Guidelines (Section 15130) identify two basic methods for establishing the cumulative environment in which the project is to be considered: (1) the use of a list of past, present, and probable future projects; or (2) the use of adopted projections from a general plan, other regional planning document, or a certified EIR for such a planning document. This analysis is based on the latter approach. The effects of past and present projects on the environment are reflected by the existing conditions in the project area. Probable future projects are those in the project vicinity that have the possibility of interacting with the project to generate a cumulative impact (based on proximity and construction schedule) and either:

- are partially occupied or under construction,
- have received final discretionary approvals,
- have applications accepted as complete by local agencies and are currently undergoing environmental review, or
- are proposed projects that have been discussed publicly by an applicant or that otherwise become known to a local agency and have provided sufficient information about the project to allow at least a general analysis of environmental impacts.

The cumulative environmental setting for all resource areas with the exception of traffic and noise, is based upon the development forecasts of the adopted Sacramento Area Council of Governments' 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) development forecast. The MTP/SCS included development projections for Sacramento County and its incorporated cities, as well as for adjacent counties and cities, based on adopted and in-development General Plans, Specific Plans, and Community Plans in each jurisdiction. Reasonably foreseeable development areas already considered in the MTP/SCS include the 2030 Sacramento County General Plan, the Cordova Community Plan, Florin-Vineyard Community Plan, Mather Field Specific Plan, along with other planned development in Sacramento County and the City of Rancho Cordova.

The above baseline cumulative setting was then augmented with current data on approved and proposed projects in Sacramento County. These include several master plan proposals within the project area including: NewBridge Specific Plan (NOP dated January 8, 2013), Jackson Township Specific Plan (NOP dated August 5, 2013), and West Jackson Master Plan (Revised NOP dated April 26, 2017).

Project Number	Project Name	Location	Description	Status
Unincorporated Sacramento County				
1	Vineyard Springs Comprehensive Plan	South-central portion of Sacramento County	2,650 acres bounded by Gerber Road to the north, Calvine Road to the south, Excelsior Road on the east, and Bradshaw Road on the west	Approved 2000
2	North Vineyard Station Specific Plan	South-central portion of Sacramento County	1,594 acres bound by Florin Road to the north, Gerber Road to the south, Vineyard Road to the east, and Elder Creek on the west	Approved 1998
3	Florin Vineyard Gap Community Plan	Within the community plan areas of Vineyard and South Sacramento	3,872 acres bounded by Elder Creek Road on the north, Bradshaw Road on the east, Churchill Downs neighborhood to the south, and Union Pacific Railroad tracks on the west	Approved 2010
4	Mather Field Specific Plan	Eastern Sacramento County along the Jackson Road highway	5,700 acres located on the former Mather Field AFB	Amended 2016
5	Cordova Hills	Southeastern Sacramento County	2,669 acres east and adjacent to Rancho Cordova	Approved 2013
6	Easton Project, including Glenborough at Easton and Easton Place	Within Cordova Community Planning Area	1,391 acres south of Highway 50 and east of Rancho Cordova	Approved 2008
7	NewBridge Specific Plan	Eastern Sacramento County along the Jackson Road highway	1,095 acres south of the Mather South Plan area, along Kiefer Boulevard	In Process
8	Jackson Township Specific Plan	Eastern Sacramento County along the Jackson Road highway	1,391 acres south of Mather Field, west of the Mather South Plan Area	In Process
9	West Jackson Highway Master Plan	Eastern Sacramento County along the Jackson Road highway	5,900 acres east of South Watt Avenue, north of Elder Creek Road, south of Kiefer Boulevard, and west of Excelsior Road	In Process
City of Rancho Cordova				
10	Arboretum	Within the Grant Line North Planning	1,349 acres bounded by Highway 16 to the south, Grant Line Road to the east,	Currently Inactive

Project Number	Project Name	Location	Description	Status
		Area	Kiefer Boulevard to the north, and Sunrise Boulevard to the west	
11	Suncreek Specific Plan	Located in southern Rancho Cordova	1,265 acres located east of the Folsom Canal and due east from the Mather South Plan Area, north of Kiefer Boulevard	Approved 2013
12	Sunridge Ranch Specific Plan	Located in southern Rancho Cordova	2,606 acres south of Douglas Road, east of Sunrise Boulevard, and north of Grantline Road	Approved 2002
13	Rio del Oro Specific Plan	Located in central Rancho Cordova	3,828 acres south of White Rock Road, east of Sunrise Boulevard, and north of Douglas Road	Approved 2010
14	Westborough Specific Plan	Located in central Rancho Cordova	1,695 acres north of White Rock Road and including Rancho Cordova Parkway	In Progress
City of Folsom				
15	Folsom South of 50 Specific Plan	Eastern Sacramento County, south of U.S. 50 and west of Folsom city limits	3,510 acres south of U.S. 50, north of White Rock Road, east of Prairie City Road, and west of Sacramento/El Dorado County Line	Approved 2011
City of Sacramento				
16	Aspen 1/New Brighton	Eastern City of Sacramento at County line	232 acres at the corner of Jackson Road and Watt Avenue	Approved 2015

CUMULATIVE ISSUE AREAS

Cumulative impacts for each technical area are discussed below. Significance criteria, unless otherwise specified, are the same for cumulative impacts as project impacts for each environmental topic area. When considered in relation to other probable future projects, cumulative impacts to some resources could be significant and more severe than those caused by the project alone.

AESTHETICS

CUMULATIVE SETTING

A discussion of the cumulative aesthetics setting defines the viewshed as the Plan Area and vicinity and includes viewing groups which are mostly composed of people traveling

along arterial roadways which traverse the viewshed, such as Sunrise Boulevard, Zinfandel Drive, and Jackson Road. Most of eastern Sacramento in the unincorporated areas exhibit relatively flat topography which is either urbanized or dominated by crop farming interspersed with rural communities and open space areas. The Plan Area and vicinity is primarily dominated by a flat, undeveloped, and rural setting. No significant cumulative visual impacts exist within the vicinity of the Plan Area.

Cumulative Impacts Evaluation

The viewshed is within the Urban Services Boundary of the existing Sacramento County General Plan, and as such, is anticipated to develop with urban uses over the coming decades. In addition to the Plan Area, the projects listed above are in the general vicinity of the Jackson Road corridor and are currently being processed by the County. Therefore, they are considered within the cumulative evaluation. The West Jackson Highway Master Plan area is located approximately one-mile southwest of the Mather South Plan Area and includes approximately 5,913 acres on both the north and south sides of Jackson Highway. The New Bridge Specific Plan area is located adjacent to the southern border of the Plan Area and includes approximately 1,095 acres north of Jackson Highway. The Jackson Township Specific Plan area is located approximately 0.50 miles southwest of the Plan area and includes approximately 1,391 acres north of Jackson Highway. In total, the four master plans (including the Mather South Project) cover approximately 9,247 acres and, based on the most recent NOPs prepared for each as of May 2018, would provide for the development of more than 27,000 new housing units of varying densities, nearly 6.8 million square feet of commercial space, employment-generating uses, mixed use land uses, 12 schools, and approximately 322 acres of developed parkland.

As discussed in Chapter 1 Aesthetics, development of the Mather South Project would not result in significant impacts related to scenic resources or light or glare. However, the project would result in significant and unavoidable impacts to visual character because of the anticipated permanent conversion of undeveloped rural land to developed uses. While the Mather South Project would represent a small portion of the overall conversion of the area, each large-scale development contributes to the permanent change in visual character in a way that induces further change, and the project would have a considerable contribution to the overall significant and unavoidable impact. There is no available mitigation to reduce the impacts related to the change in visual character, and thus the Mather South Project would result in a considerable contribution to a new **significant and unavoidable** cumulative impact.

Air Quality

Cumulative Setting

The project is within the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). The SMAQMD jurisdictional boundary is considered the cumulative project boundary. Sacramento County is currently in nonattainment for ozone, respirable particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) with respect to the California Ambient Air Quality Standards (CAAQS) and is in

nonattainment for ozone and $PM_{2.5}$ with respect to the National Ambient Air Quality Standards (NAAQS).

Ozone impacts are the result of cumulative emissions from numerous sources in the region and transport from outside the region. Ozone is formed in chemical reactions involving oxides of nitrogen (NO_X), reactive organic gases (ROG), and sunlight. All but the largest individual sources emit NO_X and ROG in amounts too small to have a measurable effect on ambient ozone concentrations by themselves. However, when all sources throughout the region are combined, they can result in severe ozone problems.

Particulate matter (PM), including PM_{10} and $PM_{2.5}$ have a similar cumulative regional emphasis when they are entrained into the atmosphere and build to unhealthful levels over time. PM also has the potential to cause significant local problems during periods of dry conditions accompanies by high winds, and during periods of heavy earth disturbing activities. PM may have cumulative local impacts if, for example, several unrelated grading or earth moving activities are underway simultaneously at nearby sites. Operation-related PM is less likely to result in local cumulative impacts as operational PM sources tend to be spread throughout the region (i.e., vehicles traveling on roads), not affecting any one receptor. However, substantial increases in traffic on roadways already experiencing high traffic volumes may result in considerable contributions to nearby existing land uses.

Although carbon monoxide (CO) can accumulate with traffic at intersections, it is recommended to be evaluated locally, and not regionally because it disperses rapidly with distance from the source under normal meteorological conditions. Therefore, CO is not significant at a regional air-basin level.

Because of the existing nonattainment status of Sacramento County (as discussed above), there is an existing adverse cumulative condition regarding air quality. Therefore, NO_X, ROG, and PM emissions from cumulative development (see Chapter 4 Air Quality Table AQ-2) are cumulatively significant in the air basin. The discussion below addresses whether the project's contribution is considerable.

Cumulative Impacts Evaluation

A cumulative impact analysis is provided for each of the air quality topics addressed in the project impact analysis follows.

Construction Emissions of Criteria Air Pollutants and Precursors

Sacramento County and the Sacramento Valley Air Basin (SVAB) are in state and federal nonattainment for ozone and PM air quality standards. Construction activities in the region would add additional ozone and PM emissions into the SVAB that may conflict with attainment efforts.

Project-related construction emissions of NO_X would exceed the applicable mass emission threshold established by SMAQMD. The project developer would be required to pay a mitigation fee for every day that NO_X emissions exceed the 85 lb/day threshold adopted by SMAQMD provided under Mitigation Measure AQ-1 in Chapter 4 Air Quality.

The mitigation fee program is designed to reduce emissions throughout the SMAQMD jurisdiction through various measures such as installing newer engines on construction equipment or installing U.S. Environmental Protection Agency (EPA)-certified woodstoves in the place of non-certified woodstoves in residential units. Incorporation of this mitigation would ensure that all additional NO_X emissions would be offset through the SMAQMD program and, therefore; project construction would not result in a considerable contribution to the regional air quality condition and would not interfere with attainment of CAAQS or NAAQS.

Regarding PM_{10} and $PM_{2.5}$, project construction would not exceed SMAQMD thresholds (see Chapter 4 Air Quality Table AQ-4). Nonetheless, Mitigation Measure AQ-1 would reduce construction-related exhaust and fugitive dust emissions by requiring dust suppression and limiting equipment idle time. Thus, considering that worst-case scenario construction-related activities would not exceed SMAQMD-adopted thresholds for PM and mitigation is in place to further reduce these emissions, construction-related PM emissions would not result in substantial concentrations at nearby receptors. Given that construction-related emissions would be mitigated to the extent feasible, construction-related emissions would not exceed SMAQMD's cumulative thresholds for criteria air pollutants and ozone precursors. Therefore, the project's short-term project-generated construction emissions **would not result in considerable contribution** to the existing significant cumulative impact.

LONG-TERM OPERATIONAL EMISSIONS OF CRITERIA AIR POLLUTANTS AND PRECURSORS

Air districts in California develop air quality attainment plans designed to reduce emissions of ozone precursors enough to attain the federal ozone standard by the earliest practicable date. Air quality attainment plans include a multitude of air pollution control strategies. When developing air quality attainment plans, air districts account for the emissions from all present and future development in the region by relying on city and county general plans. Thus, projects that are consistent with adopted general plans and the most recent air quality attainment plans would not conflict with regional air quality planning efforts and the ability of the region to meet reduction targets set by the adopted plans. In cases where projects are proposed that were not included in the adopted general plan or accounted for in regional air quality projects, SMAQMD has developed guidance and determined the level of emissions reduction that would be considered feasible, thus not conflicting with regional air quality attainment status. Although the project was included in the most current State Implementation Plan, the air quality plan for the region, it is anticipated to have significant operational air quality impacts. Thus, SMAQMD has recommended that the project achieve a 15 percent reduction in mobile-source operational emissions.

As discussed in Chapter 4 Air Quality, operation-related emissions would exceed SMAQMD thresholds for NO_X, ROG, and PM_{10}, due primarily to increased vehicle miles traveled (VMT) associated with new land use development. Projects that exceed established SMAQMD thresholds of significance would also contribute to the regional, and thus cumulative, air quality conditions. Consistent with SMAQMD guidance, an Air Quality Mitigation Plan (AQMP) has been prepared for the project, which includes various measures to reduce project operational ozone precursor emissions (i.e., NO_X

and ROG) by 15 percent. Measures would include traffic calming design features and a neighborhood electric vehicle network. Implementation of all available on-site reduction measures would reduce the project's operational emissions by 15 percent. Refer to Appendix AQ-1 for the AQMP and further details regarding incorporated emissions reduction measures.

Incorporation of all mitigation included in the AQMP would represent all available and feasible mitigation that the project could implement. However, long-term operational emissions associated with project implementation would continue to exceed applicable thresholds. Project operations may contribute to the nonattainment status of the region and may conflict with CAAQS and NAAQS. Thus, the project's contribution to cumulative operational air quality impacts is cumulatively considerable and **significant and unavoidable**.

MOBILE-SOURCE CO CONCENTRATIONS

As described in Chapter 4 Air Quality, project implementation would result in less-than-significant local mobile-source CO-related air quality impacts from construction and operation. Like intersection operations in the existing-plus-project scenario, several intersections would downgrade to level of service (LOS) E or F (e.g., Power Inn Road/Howe Avenue and Folsom Boulevard, Watt Avenue and Folsom Boulevard) in the cumulative-plus-project scenario. For a full list of intersection LOS changes from cumulative development, refer to the traffic study prepared for the project in Appendix TR-1.

CO emission factors in future years are expected to be lower than current levels because of more stringent vehicle emissions standards and improvements in vehicle emissions technology. Ambient local CO concentrations under future, cumulative conditions would continue to decline. Therefore, 1- and 8-hour CO concentrations for the future cumulative conditions would not be anticipated to exceed the significance thresholds of 20 parts per million (ppm) and 9 ppm, respectively. Consequently, the project's contribution to cumulative CO impacts would not be cumulatively considerable and would result in a **less-than-significant** cumulative impact.

EXPOSURE OF SENSITIVE RECEPTORS TO TACS

As discussed in Chapter 4, Air Quality, the project would not generate significant health risks associated with toxic air contaminants (TACs) because it would not expose any single receptor to a level of cancer risk that exceeds an incremental increase of 10 in one million, or to a noncarcinogenic hazard index of 1. The project may result in some new sources of TACs associated with commercial and educational land uses. However, TAC sources are considered local as pollutant concentrations dissipate rapidly from the source. Further, Mitigation Measure AQ-4 in Chapter 4, Air Quality, would reduce project-related TACs and protect sensitive receptors. Thus, given that the project-generated TAC emissions would not be considered substantial, mitigation would reduce project-generated TAC sources, and the localized nature of TACs, project-generated increases in TAC emissions would not result in a new significant cumulative TAC impact. The project's TAC impacts would not be cumulatively considerable and would result in a **less-than-significant** cumulative impact.

EXPOSURE OF SENSITIVE RECEPTORS TO ODORS

As discussed in Chapter 4, Air Quality, the project would generate temporary odors during construction and new odor sources associated with the commercial and educational land uses (e.g., delivery truck idling at commercial loading zones, odors associated with certain land uses such as dry cleaners). Construction-related odors would be minimal, temporary, and would cease once construction is complete. Incorporation of on-site mitigation as described in Chapter 4, Mitigation Measure AQ-5 would reduce odor exposure to new receptors. Because of the localized character of odor-related impacts, as well as the site-specific design measures in place to reduce odor exposure, the project's contribution to odor issues would not be cumulatively considerable and would not result in a considerable contribution such that a new significant cumulative impact would occur. Cumulative odor impacts would be **less than significant**.

Construction emissions from the Mather South Project would be less than significant with the application of required best management practices (BMPs) during all years on construction. Operational emissions would be less than significant after implementation of an AQMP. However, with the area already in non-attainment for ozone and particulate matter air quality standards, any additions in air pollutant levels exacerbate the significant cumulative impact and make it more difficult to bring the region into attainment. Likewise, the project would contribute to a cumulatively significant and unavoidable impact related to conflict with implementation of the State Implementation Plan due to its potential to obstruct regional ozone attainment. Therefore, although the project meets its project-specific emissions reductions requirements, any addition of air pollutants make it more difficult for the region to eventually reach attainment status, so the project would have a cumulatively considerable contribution to this significant air quality impact and, and the cumulative impact would be **significant and unavoidable**.

AIRPORT COMPATIBILITY

CUMULATIVE SETTING

The cumulative boundary for airport compatibility is generally the areas in the immediate vicinity near the jurisdictional boundary of the Airport Land Use Compatibility Plan (ALUCP) for Mather Airport. The Mather South Plan Area is located approximately one mile east of the Mather Airport, and a small portion of the Plan Area is located within the ALUCP boundary. Most of the airport operations occur north of the runway, which is centrally located within the airport boundary; however, the airport traffic control tower, as well as some hangar space and numerous installation restoration program sites are located south of the runway. The airport is 2,253 acres in size and is surrounded by a mix of residential, commercial, industrial, and open space land uses, including the Mather Preserve. Mather Airport includes two parallel runways that have a northeast/southwest orientation and receives between 230 to 280 landings per month with the majority of the landings attributed to cargo planes. Approximately 88 percent of all aircraft operations occur on the southern runway, which is the longer one of the two. Through the ALUCP, land use is regulated to ensure that potential incompatibilities from

new development do not occur. No existing airport compatibility issues are present within the project site and cumulative impacts would be less than significant.

Cumulative Impacts Evaluation

Development of the Mather South Project would result in the construction of 3,522 residential dwelling units of various densities (multi-family, detached, and attached single-family), a 28-acre environmental education campus including 200 multi-family dwelling units, a 21-acre research and development park, two elementary schools, a 6-acre community center, 21 acres of commercial-retail with up to 225,000 square feet of retail space, 44 acres of parkland including 26 acres of neighborhood parks and a 17-acre community park. The project would bring new sensitive receptors to within one mile of the airport. Development of the NewBridge, Jackson Township, and West Jackson projects would also result in new development which would bring additional new residents to the vicinity. However, the project would implement Mitigation Measures AC-1, AC-2, and AC-3 which would ensure that the project is developed in compliance with the ALUCP, and would ensure that hazards related to building heights, noise, and safety zones are reduced to a less-than-significant level. All other projects, including those listed above, would also be developed in compliance with the ALUP, and, therefore, would not result in significant impacts. The project would not result in a considerable contribution such that a new significant cumulative impact would occur. Therefore, cumulative airport compatibility impacts would be **less than significant**.

Biological Resources

Cumulative Setting

Generally, the geographic extent of cumulative impacts on biological resources consists of Sacramento County and the Central Valley region of California that supports similar biological resource values and functions to those of the Plan Area.

Past and present actions by humans have substantially altered biological resources in the Central Valley region of California, including Sacramento County, specifically, compared to historical conditions. Among the most important of these past actions have been conversion of natural vegetation and habitats to agricultural and developed land uses; fill and alteration of aquatic habitats; flood control and water supply projects; and the introduction of invasive species, which in many cases have competed with, preyed upon, and degraded habitat for native species. More recently, the large-scale conversion of agricultural habitats to urban land uses has resulted in substantial loss of habitat for species such as state-listed Swainson’s hawk that have adapted to use agricultural habitats in response to loss of their natural habitats.

Past, present, and foreseeable future urbanization in Sacramento County has contributed, and continues to contribute substantially to the loss of grassland, wetland, and agricultural habitats that are important to many species in the region, including state and federally listed species like Swainson’s hawk, vernal pool fairy shrimp, and vernal pool tadpole shrimp. The continued conversion of natural habitats would contribute to

the ongoing decline of these habitats in the region and in the state. This is a significant cumulative impact.

Because the project would have no contribution to impacts on riparian habitats, wildlife movement corridors, wildlife nursery sites, or adopted conservation plans, these issues are not discussed further.

Cumulative Impacts Evaluation

A cumulative impact analysis is provided for each of the other biological resources topics addressed in the project impact analysis follows.

Wetlands, Vernal Pool Invertebrates, and Western Spadefoot

Vernal pools are one of California's most threatened habitats. Historic losses of vernal pool habitat in combination with projected losses from existing, proposed, planned, and approved projects constitute a cumulatively substantial reduction in vernal pool habitat in the region and the state. Habitat losses of this magnitude have a substantial adverse effect on species that rely on this habitat type, including vernal pool fairy shrimp, vernal pool tadpole shrimp, and western spadefoot on a statewide and regional scale. Vernal pool fairy shrimp has a more widespread distribution than vernal pool tadpole shrimp, with occurrences in southern California, the coast ranges of California, and southern Oregon, but it is mostly found in the Central Valley. It is uncommon throughout its range and rarely abundant where it is found (USFWS 2005). The greatest concentration of vernal pool fairy shrimp occurs in the Southeastern Sacramento Vernal Pool Region, which includes eastern Sacramento County (USFWS 2005). Therefore, the occupied habitat in Sacramento County represents a substantial proportion of the statewide population of vernal pool fairy shrimp. Vernal pool tadpole shrimp is restricted to the Central Valley and San Francisco Bay and has its largest concentration in the Southeastern Sacramento Vernal Pool Region in Sacramento County (USFWS 2005). Vernal pool tadpole shrimp is uncommon throughout its range. Western spadefoot has been extirpated throughout the lowlands of southern California and from many historical locations in the Central Valley, including serious declines in the Sacramento Valley (Jennings and Hayes 1994, USFWS 2005). Loss of vernal pool habitat has resulted in substantial declines in vernal pool fairy shrimp, vernal pool tadpole shrimp, and western spadefoot statewide and in the region. Because of this habitat loss, 33 species of vernal pool-dependent plants and animals have been listed under the state or federal ESA or are candidates for listing (USFWS 2005). Loss of vernal pool wetlands has also had an adverse effect on general watershed functions in the region, such as flood attenuation and water quality improvement. This represents an existing significant cumulative impact.

As described in Chapter 6, Biological Resources, implementation of the Mather South Project would result in the loss of approximately 14.53 acres of vernal pool invertebrate habitat and western spadefoot breeding habitat, as well as approximately 691 acres of upland habitat for western spadefoot and that also supports vernal pool habitat function. Vernal pool habitats in the Plan Area are known to support vernal pool tadpole shrimp and western spadefoot, and potentially support vernal pool fairy shrimp. The *Recovery*

Plan for Vernal Pool Ecosystems of California and Southern Oregon (USFWS 2005) states that the loss of any habitat occupied by vernal pool branchiopods is counterproductive to their recovery, because the major threat to Federally listed vernal pool branchiopod species is habitat loss and fragmentation. In addition, maintaining genetic diversity of populations of these species is of concern. Take of vernal pool branchiopods can also eliminate a portion of the genetic pool available to that species, thereby eliminating the overall genetic diversity of the species. This is of concern because over time, if the genetic diversity of a species is severely reduced, the chances of the species persisting through unpredictable future environmental conditions are reduced. Implementation of the project, in combination with other existing and planned development projects in the area including New Bridge, Jackson Township, and West Jackson, would result in the loss of 17,688 acres, or 17 percent, of the 103,210 acres of vernal pool grassland habitat existing in the SSHCP Plan Area, of which 597 acres are wetland habitats suitable for vernal pool branchiopods. The project would contribute only about 2 percent to this wetland loss; however, because of the rarity of the vernal pool habitat and the special-status species associated with it, particularly the federally listed invertebrates, this contribution is considered cumulatively considerable because it contributes to the ongoing decline of these species in the region and statewide and the loss of wetland function.

Creating compensatory wetlands cannot be guaranteed to fully replace the functions and values of habitat lost and temporal losses would occur unless all impacts could be mitigated through purchase of fully functioning, established, in-kind habitats from a USFWS-approved mitigation bank. It is unclear at this time if sufficient mitigation credits would be available from an approved mitigation bank to compensate for the loss wetlands from the Plan Area. An overall loss of habitat from the Southeastern Sacramento Vernal Pool Region could reduce the potential for recovery of vernal pool fairy shrimp and vernal pool tadpole shrimp and contribute to the ongoing decline of these species in the region and statewide. This loss and degradation of habitat could also contribute to a trend toward state or federal listing for western spadefoot even after mitigation. Therefore, the project would make a considerable contribution to a significant cumulative impact.

Implementation of Mitigation Measures BR-1 through BR-5, BR-8, and BR-9 listed in Chapter 6, Biological Resources, would reduce significant direct and indirect project effects on vernal pool invertebrates and western spadefoot to a less-than-significant level. However, creation and preservation of wetlands within smaller and more fragmented areas surrounded by urban development cannot fully compensate for the whole suite of ecological services provided by larger expanses of interconnected wetland complexes surrounded by open space and there is no feasible mitigation available to reduce all potential indirect impacts to a less-than-significant level. Therefore, the project would result in **a cumulatively considerable contribution** to a significant cumulative impact and this cumulative impact would be **significant and unavoidable**.

SPECIAL-STATUS PLANTS

Special-status plants known or with potential to occur in the Plan Area are associated with vernal pools. As noted previously, vernal pools are one of California's most threatened habitats. Historic losses of vernal pool habitat in combination with projected losses from existing, proposed, planned, and approved projects constitute a cumulatively substantial reduction in vernal pool habitat in the region and the state. Habitat losses of this magnitude have a substantial adverse effect on plant species that rely on this habitat type, including Ahart's dwarf rush and legenere. Vernal pools and vernal pool plant species have been threatened by widespread conversion to agricultural uses and urban development. Loss of vernal pool habitat has resulted in substantial declines in vernal pool-dependent special-status plant species statewide and in the region. This represents an existing significant cumulative impact.

The Plan Area is known to support two vernal pool-dependent special-status plant species, Ahart's dwarf rush and legenere, and could support three additional vernal dependent special-status plant species including two federally listed vernal pool grasses. Implementing the project would result the conversion of approximately 14.53 acres of vernal pool type wetlands to developed land uses, including wetlands known to be occupied Ahart's dwarf rush and legenere. Implementation of Mitigation Measures BR-6 and BR-7 described in Chapter 6, "Biological Resources," would reduce impacts on known and potentially-occurring special-status plant species because future project applicants would be required to identify and avoid special-status plant populations to the extent feasible and provide compensation for the unavoidable loss of special-status plants through establishment of new populations, conservation easements, or other appropriate measures. Occurrences of Ahart's dwarf rush, legenere, and Bogg's Lake hedge-hyssop have been preserved in the Mather Preserve as has designated critical habitat for the federally listed vernal pool grasses (Sacramento Orcutt grass and slender Orcutt grass). Therefore, implementing the project **would not result in a considerable contribution** to a significant cumulative impact.

SWAINSON'S HAWK

The Sacramento County area supports one of the largest concentrations of breeding pairs of Swainson's hawks remaining. Therefore, the area is very important to the survival and recovery of the species. Swainson's hawks are typically found in California only during the breeding season (March through September) and winter in Mexico and South America. Historically, as many as 17,000 Swainson's hawk pairs may have nested throughout lowland California (Bloom 1980). As of 2005, there were estimated to be approximately 2,080 breeding pairs in California, approximately 1,950 of which are in the Central Valley (Estep 2009). The largest concentration of breeding pairs occurs in the counties of Sacramento, San Joaquin, Solano, and Yolo (Estep 2009a). The California population of breeding Swainson's hawks declined by approximately 90% from the 1940s to 1980, presumably because of habitat loss; however, other factors, such as mortality in wintering areas in Central America, may have also played a role (Bloom 1980). This represents an existing significant cumulative impact on the species.

Although the most important foraging habitat for Swainson's hawks lies within a 1-mile radius of each nest (City of Sacramento et. al 2003), Swainson's hawks have been recorded foraging up to 18.6 miles from nest sites (Estep 1989). Any habitat within the foraging distance may provide food at some time in the breeding season that is necessary for reproductive success. Because of the substantial decline in the number of Swainson's hawk breeding pairs in California, the contraction of its range in the state, and the past and ongoing loss of suitable habitat for Swainson's hawk due urbanization and agricultural conversion to unsuitable crop types (e.g., vineyards), adverse effects on Swainson's hawk are considered cumulatively significant.

Development of the Mather South Project would result in a permanent loss of approximately 592 acres of annual grassland that currently provides forging habitat for Swainson's hawk. This constitutes a substantial loss of habitat acreage for the local and regional population of Swainson's hawk and could result in reduced reproductive success for local pairs and permanent displacement of individuals from the area. In addition, the project would remove suitable nest trees, including one that was observed to have a nesting pair in 2014. Nesting habitat in proximity to abundant forage habitat is crucial to reproductive success of Swainson's hawks. Implementation of Mitigation Measure BR-12 described in Chapter 6, Biological Resources, in addition to the preservation of 1,272 acres of in-kind foraging in the Mather Preserve would reduce project-level impacts on Swainson's hawk foraging habitat, but not necessarily to a less-than-significant level because there is a finite amount of land available within the foraging range of the local nesting population and development of the Plan Area would result in an overall net loss of foraging habitat available to the local nesting population within at least 10 miles. This net loss would contribute to the decline of Swainson's hawk populations in the region and to the diminished value of the region as it relates to the long-term viability of this species. This would be a **cumulatively considerable contribution** to a significant cumulative impact and this cumulative impact would be **significant and unavoidable**.

SPECIAL-STATUS REPTILE, BIRD (OTHER THAN SWAINSON'S HAWK), AND MAMMAL SPECIES; AND VALLEY ELDERBERRY LONGHORN BEETLE

Past development and land conversion in Sacramento County and the Central Valley, ranging from conversion of native habitats to agricultural production more than a hundred years ago to recent expansion of urban development, has resulted in a substantial loss of native habitat to other uses, fragmentation of remaining natural habitats, and associated population declines for many native insect, reptile, bird, and mammal species. This land conversion locally and statewide has benefited a few species, such as those adapted to agricultural uses, but the overall effects on native habitats and associated wildlife have been adverse. Habitat losses of this magnitude have a substantial adverse effect on species that require native habitats and contribute to population declines. Several wildlife species native to Sacramento County have received legal or regulatory protections, in response to population declines that have occurred because of habitat loss and degradation. The widespread conversion, fragmentation, and degradation of habitats, and associated population declines, for these special-status wildlife species in Sacramento County and the broader Central Valley is an existing significant cumulative impact.

The Plan Area is bordered by agricultural lands to the west and south; however, over the past 10 to 20 years, intensive urban and suburban development have been initiated or completed near the Plan Area in the City of Rancho Cordova and the unincorporated area of Sacramento County, and many other projects are in various stages of planning and entitlement (including those projects currently being processed in the immediate vicinity, i.e., New Bridge, Jackson Township, and West Jackson). Some projects have already resulted in adverse impacts on special-status wildlife species. Although many future projects proposed near the Plan Area would be required to mitigate significant impacts on biological resources, in compliance with CEQA, ESA, CESA, and other state, local, and federal statutes, many types of habitats and species are provided no legal protection. Therefore, it can be expected that the net loss or degradation of native terrestrial and aquatic habitats for special-status wildlife, agricultural lands, and open space areas that support important biological resources in Sacramento County will continue.

Project development would result in removal of habitat known to support foraging of tricolored blackbird, loggerhead shrike, white-tailed kite, and northern harrier. All these species except tricolored blackbird may also nest in the Plan Area and project implementation would remove nesting habitat and possibly active nest sites. Other special-status species could be present in suitable habitat in the Plan Area and could be disturbed or lost through habitat removal or modification, including valley elderberry longhorn beetle, western pond turtle, short-eared owl, burrowing owl, grasshopper sparrow, and American badger. Future development and construction activities such as ground disturbance and vegetation removal, as well as overall conversion of habitat to urban and commercial uses, could result in the disturbance or loss of habitats, individuals, and reduced breeding productivity of these species.

Implementation of Mitigation Measures BR-10, BR-11, BR-13, BR-14, BR-15, BR-16, and BR-17 listed in Chapter 6, Biological Resources, would avoid the loss of individuals, nests, or other active breeding sites of special-status insect, reptile, bird, and mammal species (valley elderberry longhorn beetle, western pond turtle, burrowing owl, loggerhead shrike, white-tailed kite, northern harrier, short-eared owl, tricolored blackbird, song sparrow, grasshopper sparrow, and American badger), and compensate for any unavoidable loss of occupied burrowing owl habitat and elderberry shrubs. In addition, equivalent value foraging habitat for special-status bird species, known occupied burrowing owl habitat, potential wetland and upland habitat for western pond turtle, and denning and foraging habitat for American badger have been permanently protected in the Mather Preserve. Therefore, implementation the project would not result in a considerable contribution to a significant cumulative impact. Therefore, cumulative project impacts would be **less than significant**.

OFFSITE IMPROVEMENTS

As described in Chapter 6, the Mather South Project would result in unknown offsite impacts to biological resources as a result of implementing roadway infrastructure and energy infrastructure. However, because specific site plans for these projects are not available, it is speculative to identify the types of biological resources that could be present at the various locations. All improvements would go forward with a detailed site

plan and additional environmental review, and potential impacts would be mitigated with the same program of mitigation recommended for the project, and therefore, would not result in a considerable contribution to a cumulative impact. Therefore, cumulative project impacts would be **less than significant**.

CLIMATE CHANGE

CUMULATIVE SETTING

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Human-caused emissions of these GHGs in excess of natural ambient concentrations are found to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. Climate change is a global problem caused by global pollutants and is inherently cumulative. Therefore, the cumulative setting for climate change is global, which is experiencing an existing adverse cumulative condition.

CUMULATIVE IMPACTS EVALUATION

Sacramento County has established draft GHG thresholds for 2030. The project's build out year is 2032, for which the 2030 GHG thresholds were extrapolated in alignment with State GHG reduction targets. The 2032 GHG thresholds used in Chapter 7, "Climate Change" are 0.73 metric tons of carbon dioxide equivalent ($MTCO_2e$) per capita per year for residential energy, 4.28 $MTCO_2e$ per 1,000 square feet of nonresidential building area, and 1.47 $MTCO_2e$ per capita for transportation-related emissions. Development of the project would result in the production of GHG emissions during construction activities and throughout the operational period of the project, attributed to vehicle use, energy use, waste generation, water treatment and distribution, and other area sources. With the implementation of Mitigation Measures CC-1 and CC-2, the Mather South Project would reduce GHG emissions generated on-site. Through implementation of Mitigation Measure CC-3, the remaining GHG emissions exceeding applicable thresholds would be offset through the purchase of carbon credits.

It is important to note that the development of the Mather South in conjunction with surrounding future planned development would provide regional VMT reductions compared to the cumulative scenario with Mather South alone. The four large-scale development projects in unincorporated Sacramento County (i.e., Mather South, NewBridge Specific Plan, Jackson Township Specific Plan, and West Jackson Highway Master Plan) would provide additional community amenities (e.g., shopping, jobs, entertainment) and transportation networks that would support land uses development associated with the project, resulting in a decrease in VMT associated with Mather South. Based on the traffic study conducted for Mather South, the development of all four projects would result in a decrease in overall VMT associated with Mather South of 17 percent, in the future cumulative scenario when all projects are built out. Considering incorporated mitigation measures, future anticipated reductions in project-generated

VMT, and the continuation of GHG reducing State regulations, long-term operational GHG emissions are anticipated to be lower than those estimated in Chapter 7.

Incorporation of available mitigation measures would reduce project emissions to a less than significant level. Although an existing cumulative adverse condition exists, the project **would not result in a cumulatively considerable** contribution to an **existing adverse cumulative condition** and this impact would be **less than significant.**

CULTURAL AND TRIBAL CULTURAL RESOURCES

CUMULATIVE SETTING

The geographic scope of potential cumulative impacts related to cultural resources is the Plan Area and the immediate geographic area, including Sacramento County. Because all significant archaeological resources are unique and nonrenewable members of finite classes, all adverse effects or negative impacts erode a dwindling resource base. The loss of any one archaeological site affects all others in a region because these resources are best understood in the context of the entirety of the cultural system of which they are a part. The cultural system is represented archaeologically by the total inventory of all sites and other cultural remains in the region. Therefore, because of past and current projects, cumulative impacts to cultural resources in Sacramento County are significant.

CUMULATIVE IMPACTS EVALUATION

The Mather South Project would result in ground disturbing activities during project construction and has the potential to unearth previously unidentified cultural resources. However, Mitigation Measure CR-1 listed in Chapter 8, Cultural Resources, includes procedures to limit the effects of the project on unanticipated resource discoveries. With this mitigation the project would not result in a considerable contribution to a significant cumulative impact related to cultural resources. The project's cumulative impact would be **less than significant**.

GEOLOGY, SOILS, AND PALEONTOLOGICAL RESOURCES

CUMULATIVE SETTING

Impacts on geology and soils are generally localized and do not result in regionally cumulative impacts. Unless a project would alter the soils and rock underlying other adjacent projects or affect surrounding land due to landslides, impacts related to geology, soils, and seismic hazards would be limited to the project site. The geographic scope of cumulative impacts related to geology, soils, or seismic hazards, therefore, includes only projects immediately adjacent to the project site. No significant cumulative geology or soils impacts are present in the project area.

The geographic scope of potential cumulative impacts related to paleontological resources is the Plan Area and the immediate geographic area, including Sacramento County. Because all significant paleontological resources are unique and nonrenewable

members of finite classes, all adverse effects or negative impacts erode a dwindling resource base. The loss of any one paleontological site affects all others in a region because these resources are best understood in the context of the entirety of the system of which they are a part. The system is represented by the total inventory of all sites and other paleontological remains in the region. Therefore, because of past and current projects, cumulative impacts to paleontological resources in Sacramento County are significant.

Cumulative Impacts Evaluation

The Mather South Plan Area is not located within an active seismic fault area, nor is there topographical variation on the site that would make the Plan Area vulnerable to landslides. The Plan Area proposes land development over land containing valuable mineral resources which could be considered significant in a cumulative setting. However, the Mather Field Specific Plan allows for the continued access and use of mining resources. Additionally, the project would not result in the closure of adjacent mining resources. The Mather South Project would be constructed in accordance with the most recent version of the California Building Code, which includes construction and seismic safety requirements and recommendations contained in project- specific geotechnical reports. The project would also implement Chapter 10, Geology, Soils, and Paleontological Resources, Mitigation Measure GS-1 which would require protection for any discovered paleontological resources, thereby reducing cumulative impacts to less than significant.

It is anticipated, therefore, that any potential impacts associated with geologic, soil conditions, and paleontological resources could be mitigated within the Plan Area and other nearby project sites. The project would not result in a considerable contribution to the significant cumulative paleontological resources impact or such that a new significant cumulative geology and soils impacts would occur Therefore, project impacts would be **less than significant**.

Hazards and Hazardous Materials

Cumulative Setting

The general vicinity of Mather Airport was utilized for military operations for most of the 20th century and contains contaminated soils and groundwater from these past uses. Several studies analyzing the existing conditions at the former Mather AFB and Mather Field have been conducted since the 1980s and contaminated sites have been identified, with restrictions and measures developed, to address hazardous materials. Since 1982, approximately 89 contaminated sites have been identified within Mather Field as a result of aircraft fueling and maintenance activity, fire protection training, corrosion control, past disposal activities, and landfilling. Main contaminants include solvents, petroleum products, and various solid wastes. In addition, pesticides, herbicides, asbestos, polychlorinated biphenyls (PCBs), radon, ordnance, metals (including lead), low-level radioactive waste, landfill gases, and medical waste, which were used, stored, or generated as part of base operations have been identified as potential sources of contamination. Since Mather Field was operated as a federal

military installation, EPA, U.S. Department of Defense, U.S. Air Force, Cal EPA, and DTSC oversee hazardous substances investigations and remediation. While a majority of the contamination onsite has been identified and remediated, it is possible that pre-construction surveys could determine that new sources of contamination are present. Therefore, the existing cumulative setting is significant.

The Mather South Plan Area is located within an area where there are known regional cumulative groundwater impacts associated with offsite portions of the Mather AFB and the Aerojet facility. It is not expected that sites located within the Plan Area are responsible for contamination.

Cumulative Impacts Evaluation

The Mather South Project could exacerbate the existing soil and groundwater impacts within the Plan Area if it were to result in additional contamination on-site or increase the risk of hazardous materials exposure during the transport, use, and disposal of hazardous materials. However, the project would be required to comply with federal, state, and local hazardous materials regulations and codes monitored by the state and/or local jurisdictions and would implement Mitigation Measures HM-1, HM-2, HM-3, and HM-4 which would require the preparation of a site-specific Health and Safety Plan, conducting of soil sampling before construction activities begin, preparation of a contaminated soil contingency plan, and notification of future landowners of the potential for hazardous materials.

Similarly, other development projects considered in the cumulative analysis would each be required to implement similar regulations to mitigate project-level impacts. Therefore, the project would not result in a considerable contribution to a significant cumulative impact related to hazards. Cumulative impacts related to hazards and hazardous materials would be **less than significant**.

Hydrology, Drainage, Water Quality

Cumulative Setting

The Mather South Project is in the eastern portion of the Morrison Creek Stream Group which ultimately feeds into the Beach Stone Lakes watershed and covers approximately 123,536 acres (Plate HY-7). The Beach Stone Lakes watershed is the cumulative watershed boundary for the evaluation of cumulative effects. Modeling for the Mather South Project indicates that an increase in runoff volume from the pre- to post-development condition is a result of the overall increase in the impervious cover that results from the change in grassland to developed site (i.e., pavement, roof and hardscape areas replacing grass and open space areas). The increased volume of runoff would be conveyed downstream by the Morrison Creek systems to the Beach Stone Lakes watershed, which experiences mild flooding in the existing pre-development condition. When considered in a cumulative condition, nearby projects including the New Bridge, Jackson Township, and West Jackson projects would also exacerbate the existing flooding within the Beach Stone Lakes watershed (MacKay &

Somps, 2018) through the conveyance of addition volume of runoff. This is an existing significant cumulative impact.

Cumulative Impacts Evaluation

The Mather South Project would result in an increase in runoff volume from existing conditions by approximately 123.3 acre-feet in a 100-year/10-day design event. Modeling for the New Bridge and Mather South Project indicates that the resulting increase in downstream flooding would result in approximately ¼ inch increase during flood events (MacKay & Somps 2018). It can also be assumed that all new development in the upstream watershed would result in incremental runoff above existing conditions and would contribute to increases in flooding in the Beach Stone Lakes area, exacerbating the existing flood conditions in the area. Sacramento County has adopted a long-range plan to mitigate for the effects of additional flooding in the area. The County adopted Resolution WA-2898 to update the fees associated with development in several watersheds that are known to have flooding issues. It resulted in an increase in fees within the Morrison Creek Stream Group to mitigate cumulative downstream flooding issues within the Beach Stone Lakes Area. The County collects and manages the mitigation fees which will be used to construct appropriate drainage and retention facilities to help mitigate the current cumulative flooding condition. Mather South and other nearby cumulative projects would be required to implement Mitigation Measure HY-2 in Chapter 12, Hydrology and Water Quality (payment of the fees), which would over time reduce the severity of the impact. However, the timing of completion of flood protection projects in the Beach Stone Lakes/Point Pleasant area or implementation of regional flood volume storage solutions is unknown. Therefore, the project would result in a considerable contribution to this significant cumulative impact. Cumulative impacts would be **significant and unavoidable.**

Land Use

Cumulative Setting

The Mather South Project is in an undeveloped area within eastern Sacramento County and is surrounded by rural and undeveloped property that is currently being planned for development. The Plan Area is within a general plan designation, community plan, and zoning designation that indicates it is planned for future development (i.e., Urban Development Area, Cordova Community Plan, and Special Planning Area). The Mather South Project is consistent with the existing land use designation, community plan policies, and zoning district, and would amend the Mather Field Specific Plan to align the future land uses of the Plan Area with the specific plan.

Cumulative Impacts Evaluation

Land use policy is set at the local level and is guided by general plans and other policies and regulations. Although the project would result in changes to the zoning and use of the site that would increase development density, such changes would be generally consistent with the Mather Field Specific Plan which currently guides development on the site. Because the Plan Area is in an area designated for development (i.e.,

designated Urban Development Area), implementation of the project would not result in a significant cumulative impact related to land use. Further, the Plan Area is within an area of Sacramento County that is planned for growth but would not physically divide any existing communities. Therefore, the project would not result in a considerable contribution such that a new significant cumulative impact would occur. Cumulative project impacts are **less than significant**.

NOISE

CUMULATIVE SETTING

The geographic area considered for cumulative impacts regarding noise levels is Sacramento County, including several incorporated cities within Sacramento County that are in the vicinity. Rancho Cordova is directly east of the Plan Area, across the Folsom Canal. The City of Sacramento is approximately 6 miles west of the Plan Area. The City of Folsom is approximately 14 miles north of the Plan Area. The cumulative evaluation also includes the New Bridge, West Jackson, and Jackson Township projects. The projects and their associated traffic volume impacts were taken into consideration for the Traffic Impact Analysis conducted for this EIR and have been included in this cumulative noise analysis. Consistent with the TIA analysis, the cumulative noise analysis also takes into consideration development forecasts for the County included in SACOG's 2012 Metropolitan Transportation Plan (MTP) including anticipated development projects within incorporated cities in the County.

Based on information in the 2013 Mather Airport Master Plan, airport activity is anticipated to increase over the buildout period of the project. However, because Mather Airport serves as a commercial and cargo carrier airport, project implementation would not cumulatively contribute to future airport activity. Therefore, the primary factors analyzed in the cumulative impact analysis are cumulative traffic noise levels and potential noise and vibration impacts from cumulative construction activity.

CUMULATIVE IMPACTS EVALUATION

CONSTRUCTION NOISE AND VIBRATION

In addition to the Mather South Project, the New Bridge, Jackson Township, and West Jackson projects are being processed by the County and are, therefore, reasonably foreseeable projects to be included in this evaluation. All three master and specific plans are in close proximity to the project site; however, only the New Bridge Specific Plan is located adjacent to the project boundary and is anticipated to result in potential cumulative noise impacts from construction activity. The New Bridge Specific Plan is located directly south of the project site, along the south side of Kiefer Boulevard. Considering the long-term implementation period of both the Mather South Project and the New Bridge development, the exact timing of when land uses would be developed is unknown. It is assumed that the development of land uses related to the New Bridge project could be under development during the same time or after buildout of the Plan Area. Noise sensitive land uses (residential) are planned for areas of the Plan Area directly north of the New Bridge Specific Plan area. Given the proximity of the New

Bridge Specific Plan to the Plan Area, cumulative impacts from construction-generated noise could result if construction activities generated by both projects were to take place within close proximity and simultaneously. Implementation of MM NOI-1 would serve to reduce day and nighttime construction noise levels by ensuring proper equipment use; locating equipment away from sensitive land uses; and requiring the use of enclosures, shields, and noise curtains (noise curtains typically can reduce noise by up to 10 dB [EPA 1971]). However, as allowed under the Sacramento County Noise Ordinance, circumstances may occur when construction activity in the Plan Area would occur during nighttime hours when people are easily disturbed and would result in substantial increases in noise. Therefore, even with the mitigation measure in place, construction activity could expose people to noise levels which would cause disturbance and a significant impact would occur.

Vibration associated with construction activities is of primary concern within proximity of sensitive land uses. At increasing distances from the source, vibration levels dissipate rapidly and have less potential to cause disturbance to people or damage to structures. Vibration generated from construction is typically associated with pile-driving activities. These activities only occur during discrete phases of construction with pile-driving activities occurring for brief and intermittent periods of time. In consideration of other large development projects and plans anticipated for future development, vibration impacts would remain local and would not combine with vibration source from other construction activities even if construction activities at other future development were to occur simultaneously with project construction activities.

In consideration of the other large development projects which may occur simultaneously to development of the Mather South Project, cumulative construction activities associated with the projects could result in a substantial temporary or periodic noise increases and further contribute to the substantial increase in construction noise. The combined level of construction activity associated with the Mather South Project and other projects would add to the overall disruptive nature of construction noise over a period lasting many years, regardless of whether the noise is exempt by the Sacramento County Noise Ordinance. Although the Mather South Project would include mitigation to reduce construction noise, the anticipation of construction activity associated with the various master and specific plans near the Plan Area, would result in a cumulatively considerable contribution to a new significant cumulative impact. Additionally, because no additional mitigation is available to reduce construction activity associated with the other plans discussed above, the project's cumulative impact would be **considerable and significant and unavoidable**.

STATIONARY NOISE SOURCES

The Mather South Project would result in land uses that include stationary noise sources such as noise from HVAC units, electrical generators, parking lots, commercial loading docks. The project would also include the development of one new electrical substation within the Plan Area and associated transmission lines. The southern boundary of the Mather South Project is Kiefer Boulevard. The New Bridge Specific Plan project is located directly south of the Plan Area and is considered in this cumulative analysis because of the proximity. Land uses in the Newbridge Specific Plan

development would be developed along the south side of Kiefer Boulevard, and would include medium- to high-density residential, public/quasi-public, and commercial land uses. Although detailed site plans are not available at this time, this analysis assumes that stationary noise sources such as noise from HVAC units, electrical generators, parking lots, commercial loading docks would be included. Implementation of Chapter 14, "Noise," Mitigation Measure NO-4 would reduce impacts related to stationary noise sources through the implementation of site design and avoidance features. However, the specific location of new stationary equipment is unknown, so impacts could still exceed the County's non-transportation noise standard for outdoor noise sensitive areas. As a result, implementation of the Mather South Project in the cumulative condition could result in a cumulatively considerable contribution to a new significant cumulative impact near Kiefer Boulevard. Therefore, the Mather South Project's contribution to this new impact would be **considerable and significant and unavoidable**.

TRAFFIC NOISE

The projects listed in the Cumulative Settings section above are anticipated to contribute to cumulative traffic volume increases within Sacramento County and would result in subsequent increases in traffic noise levels along affected roadways. Specifically, the New Bridge, Jackson Township and Jackson Highway master and specific plans are anticipated to be developed near the Plan Area. Because of the buildout of these plans as well as other cumulative development in the County, vehicular traffic volumes would increase and result in a cumulative increase in traffic noise levels along affected roadways.

The cumulative development of the plans and projects, excluding the Mather South Project, would result in increases in traffic-related noise levels along roadways which experience traffic volume increases. Under the cumulative conditions, which includes the Mather South Project, traffic noise levels would be furthered increased by traffic volume increases generated by the development of the Mather South Project. Under these conditions, the traffic contributions from the Mather South Project would increase noise levels above the applicable incremental increase thresholds established in Chapter 14, "Noise."

For a scenario in which all cumulative projects aside from the Mather South Project were developed and noise sensitive land uses were built along Kiefer Boulevard between Douglas Road and Sunrise Boulevard as part of the New Bridge Specific Plan and Jackson Highway Specific Plan, development of the Mather South Project's cumulative contribution to traffic volumes would increase traffic noise levels above applicable incremental increase threshold of 1.5 dB established in Table NO-2. Thus, a cumulative impact regarding long-term traffic exists and the cumulative plus project would result in additional substantial (i.e., 1.5 dB) increases in traffic noise levels. Implementation of Chapter 4, "Air Quality," Mitigation Measure AQ-2 would result in the implementation of an air quality management plan which would incorporate traffic calming measures, resulting in less traffic noise by reducing the amount of vehicle miles traveled. Use of the neighborhood electric vehicle (NEV) network by project residents would serve shorter trips within the Plan Area, reducing traffic volumes on roadways

outside the Plan Area. The traffic calming measures would encourage alternative modes of transportation such as biking and walking for shorter trips and would also serve to reduce traffic volumes on roadways outside the Plan Area. The County would also require that each project implement the following Mitigation Measure in order to further reduce traffic noise associated with the development of the Jackson Corridor projects.

MITIGATION MEASURES

CU-NOI-1. Use rubberized hot-mix asphalt for all offsite road widening projects implemented as part of the Mather South, NewBridge, Jackson Township or West Jackson plans.

- Projects are required to pave offsite segments of roadway with rubberized hot-mix asphalt (RHMA) or equivalent surface treatment with known noise-reducing properties on top of the roadway surface. The RHMA overlay shall be designed with appropriate thickness and rubber component quantity (typically 15 percent by weight of the total blend), such that traffic noise levels are reduced by an average of 4 to 6 dB (noise levels vary depending on travel speeds, meteorological conditions, and pavement quality) as compared to noise levels generated by vehicle traffic traveling on standard asphalt. RHMA has been found to achieve this level of noise reduction in other parts of California (Sacramento County 1999). Pavement will require more frequent than normal maintenance and repair to maintain its noise attenuation effectiveness.

Given the long buildout period of the Mather South Project and other projects in the cumulative condition, the unknown traffic reductions credited to Mitigation Measure AQ-2 and the noise reductions associated with CU-NOI-1, timing of development for future development projects and specific building location and orientation of new receptors (and thus noise exposure levels), and the extent of future traffic-noise increases, the project would result in a cumulatively considerable contribution to a new significant cumulative impact. The cumulative impact would be **considerable and significant and unavoidable**.

PUBLIC SERVICES

CUMULATIVE SETTING

The Mather South Project is in eastern Sacramento County, in a largely undeveloped and rural area. Law enforcement services are provided by Sacramento County Sheriff's Department; Fire protection services are provided by Sacramento Metropolitan Fire Department; School services are provided by Elk Grove Unified School District; Parks and recreation services are provided by Cordova Recreation and Parks District; and Library services are provided by Sacramento Public Libraries. Potential impacts to public services are generally regulated by policies in the general plan, such that the cumulative contribution of the project to local demand for public services is considered. Payment of school facility mitigation fees would address impacts on the provision of adequate school facilities, and specific school facility developments would be subject to

environmental review on a project-by-project basis. Because the projects identified in Table 19-1 would be subject to standards similar to those described for the project, no cumulative adverse impact to public services is expected.

Cumulative Impacts Evaluation

The Mather South Project would construct adequate public services facilities and infrastructure consistent with anticipated demand of new residents and employees. Payment of fees for schools and construction of a fire station would mitigate any impacts to those services, while payment of property taxes would fund additional law enforcement service, and libraries as needed. The project would construct approximately 44 acres of parks and recreational uses. The project also includes an infrastructure financing plan to fund the construction of all required facilities. The Mather South Project has been reviewed by service providers and concluded to be mitigated appropriately as described in Chapter 15, Public Services. The project-level analysis concludes that the project can be adequately served, and the project does not contribute to any cumulative degradation of service. Therefore, the project's cumulative contribution would not be considerable and impacts would be **less than significant**.

Public Utilities

Cumulative Setting

The Mather South Project is in the service area of Sacramento Area Sewer District and the Sacramento Regional County Sanitation District. Wastewater is routed to the Sacramento Regional Wastewater Treatment Plant (SRWTP) before it is treated and discharged into the Sacramento River. There is currently capacity within the regional wastewater infrastructure and additional capacity will come online by 2023 with the addition of the Echowater Project, as described in Chapter 16, Public Utilities. Solid waste processing services are provided by the Sacramento County Department of Waste Management and Recycling. Kiefer Landfill would serve the solid waste disposal needs of the project residents, and the permitted landfill capacity is anticipated to serve the County's needs through 2064, including future growth. There is not an existing cumulative impact related to public utilities.

Cumulative Impacts Evaluation

The on-site and off-site sewer infrastructure described in the Mather South Community Master Plan for the project are designed to handle cumulative conditions, and the analysis concludes that capacity would be sufficient. The project would connect to the recently approved trunk extension which would provide access to the SRWTP, which has existing capacity to serve the project's wastewater needs. On a cumulative basis, there is immediately available wastewater capacity to serve the project and reasonably foreseeable development. Direct project impacts would be less than significant and the project would not result in a cumulatively considerable contribution to a new significant cumulative impact. Therefore, project-related cumulative impacts would be less than significant.

Similarly, solid waste disposal would be provided by Kiefer Landfill, and it has a remaining permitted capacity of 113 million cubic feet of landfill space. The project would generated approximately 9,855 tons per year. Therefore, the Mather South Project would not result in a considerable contribution to a new significant cumulative impact. Therefore, project-related cumulative impacts would be **less than significant** for public utilities.

TRANSPORTATION AND TRAFFIC

CUMULATIVE SETTING

This cumulative impact assessment relies on existing and future land development projections, reasonably foreseeable transportation improvements that are contained in adopted local general plans and regional transportation plans, and reasonably foreseeable development projects. Specifically, this analysis addresses the combined potential effects of the development of Mather South, New Bridge, Jackson Township, and West Jackson projects (referred to collectively as the Jackson Corridor Projects) and the portion of those impacts attributed to the Mather South Project on cumulative transportation and circulation conditions.

As was described in Chapter 17, “Traffic and Circulation,” the Jackson Corridor Projects are located adjacent to each other along the Jackson Road corridor. Because of this proximity and the relatively concurrent entitlement process, County staff and the applicants collaborated to conduct traffic analysis that would evaluate the transportation related impacts of each individual project as stand-alone projects, as well as the transportation impacts of all four projects combined. Substantial coordination with the applicants and adjacent jurisdictions, including the cities of Sacramento, Rancho Cordova, Elk Grove, and Folsom in addition to Caltrans and the Capital Southeast Connector Joint Powers Authority, led to agreement on the area to be studied for transportation impacts. The resulting study area includes 261 roadway segments and 164 intersections within an area bounded by US 50 on the north, Calvine Road on the south, Power Inn Road on the west, and Grant Line Road on the east.

Utilizing a joint analysis methodology provides a better understanding of the travel demand associated with all Jackson Corridor Projects combined and determines the number of vehicles each project contributes towards the total traffic flow as a fair share percentage on each study roadway segment and intersection. The transportation impact report (Appendix TR-1) prepared to support Chapter 17, “Traffic and Circulation,” provides additional information related to trip generation and traffic flow with implementation of the Jackson Corridor Projects.

The following describes each of the three cumulative scenarios that were evaluated.

CUMULATIVE NO PROJECT SCENARIO

This scenario analyzes conditions for a cumulative scenario in year 2035, which includes reasonably foreseeable land uses and planned transportation improvement projects near the Plan Area, without implementation of the Jackson Corridor Projects.

The horizon year of the cumulative scenario (2035) is consistent with the horizon year of the 2012 Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS), which considers population and employment forecasts, adopted land use plans (i.e., general plans), and funded transportation projects that are anticipated to occur within the stated time frame. The 2012 MTP/SCS was used for consistency among the Jackson Corridor Projects' transportation impact analysis because it was the adopted MTP/SCS at the time the Joint Traffic Study began in April 2013. The MTP/SCS is updated every four years and is currently being updated.

SACOG's 2035 development forecasts (the amount and location of housing and employment) for the adopted 2012 MTP/SCS were used to prepare travel demand forecasts for the Cumulative No Project scenario. In addition, full build out of all reasonably foreseeable development projects was assumed within the study area. Appendix TR-1 provides a comprehensive list of the major developments in the area assumed to be build-out in the Cumulative No Project scenario.

TRANSPORTATION NETWORK

Plate CU-1 illustrates the transportation network associated with the Cumulative No Project scenario. Outside of the Jackson Corridor Projects area, the transportation network for this scenario consists of the identified 2035 improvements in the adopted 2012 MTP/SCS. **Plate CU-2** illustrates the resultant traffic operating conditions associated with the Cumulative No Project scenario.

CUMULATIVE PLUS JACKSON CORRIDOR PROJECTS SCENARIO

The Cumulative plus Jackson Corridor Projects scenario is the cumulative scenario upon which the Cumulative plus Mather South Project is based. The Cumulative plus Jackson Corridor Projects scenario evaluates the travel demand of the Jackson Corridor Projects combined and added to Cumulative No Project conditions. Thus, the Cumulative plus Jackson Corridor Projects scenario identifies impacts of the Jackson Corridor Projects, for which the Mather South Project contributes. This scenario analyzes cumulative conditions (year 2035) with implementation of the Jackson Corridor Projects, which includes the Mather South Project, and includes forecasted land uses and transportation improvement projects within the overall Jackson Corridor Projects study area that would occur by year 2035. The 20-year horizon was selected in accordance with the horizon year of the 2012 MTP/SCS.

The Jackson Corridor Projects are located adjacent to each other along the Jackson Road corridor (**Plate CU-3**). Utilizing a joint traffic analysis in this case results in a common baseline for existing conditions between all four Jackson Corridor Projects, provides a better understanding of the travel demand associated with all Jackson Corridor Projects combined, and allows the County to determine the number of vehicles each project contributes towards the total traffic flow as a fair share percentage on each study roadway segment and intersection. Although a joint traffic analysis was conducted, a project-specific report was prepared for each master plan project to identify project-specific impacts and mitigation measures.

TRANSPORTATION NETWORK

Plate CU-4 illustrates the transportation network associated with the Cumulative plus Jackson Corridor Projects scenario. As described in Chapter 17, Traffic and Circulation, The Jackson Corridor Projects would construct new roadways within the individual project sites and widen many existing roadways within or on the borders of the individual project sites.

Within the Jackson Corridor Projects study area, roadway improvements beyond those in the MTP/SCS are included, which would be fully funded by the developments assumed in this scenario or by other committed funding sources. The identified roadway improvements and the number of roadway lanes for the Cumulative Plus Jackson Corridor Projects scenario was developed in coordination with Sacramento County.

The Jackson Corridor Projects include substantial amounts of higher density and mixed uses to help support transit use; however, transit service within walking distances of those uses is required to achieve a significant transit ridership. An accurate estimation of transit use requires the identification of specific transit routes and frequency of service on those routes. As described in Chapter 17, Traffic and Circulation, a separate planning effort, involving staff from Sacramento County and SacRT, was conducted to define an appropriate transit system for the transportation analysis.

Plate CU-5 shows the assumed transit routes for the Cumulative Plus Jackson Corridor Projects scenario. The assumed transit routes, service frequency, and supporting infrastructure (i.e., queue jumps) would be required at full development of the Jackson Corridor Projects. Additionally, to provide adequate transit service during the early stages of development, the transit system is required to be phased with development of the Jackson Corridor Projects.

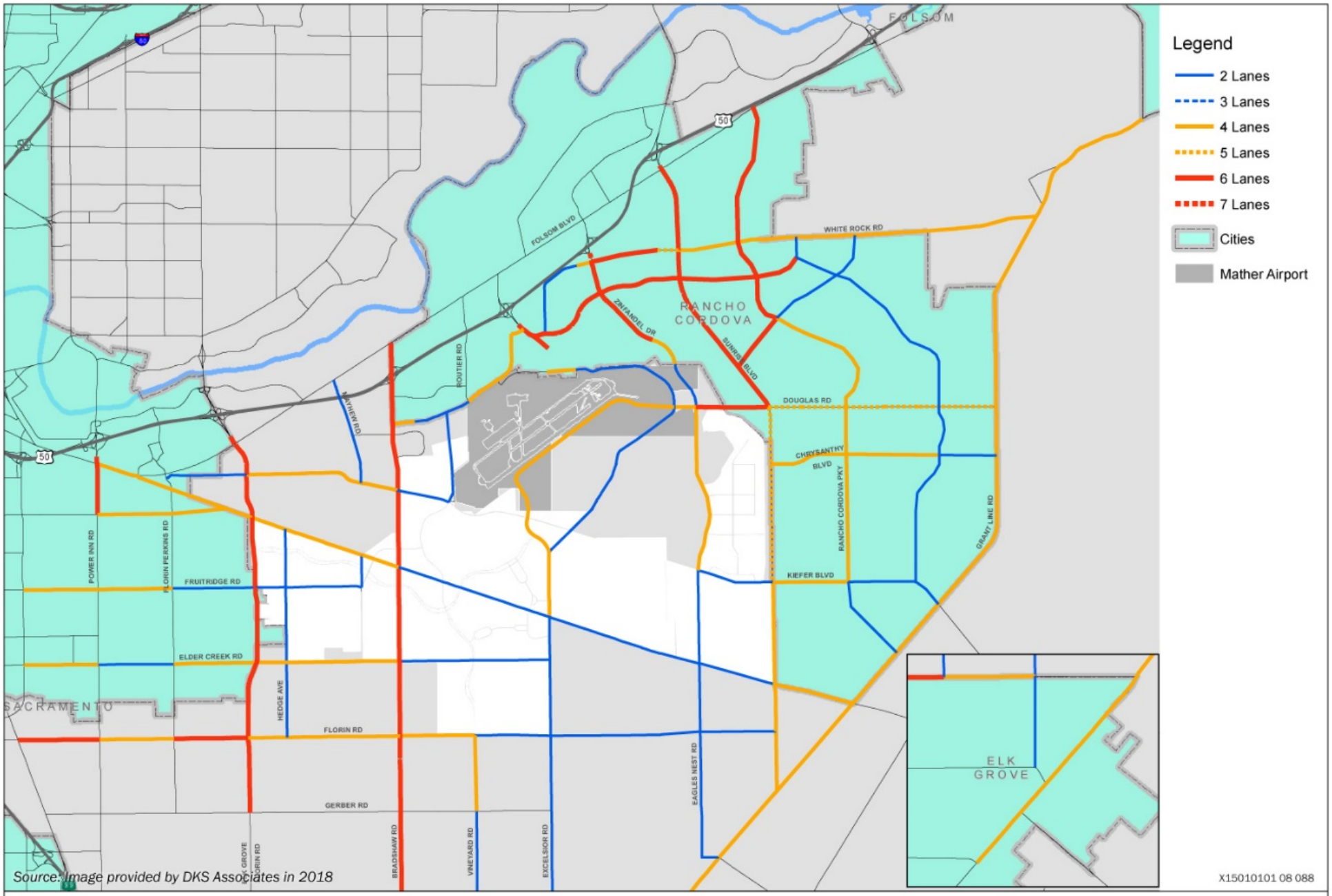


Plate CU-1: CEQA Cumulative No Project Roadway Network

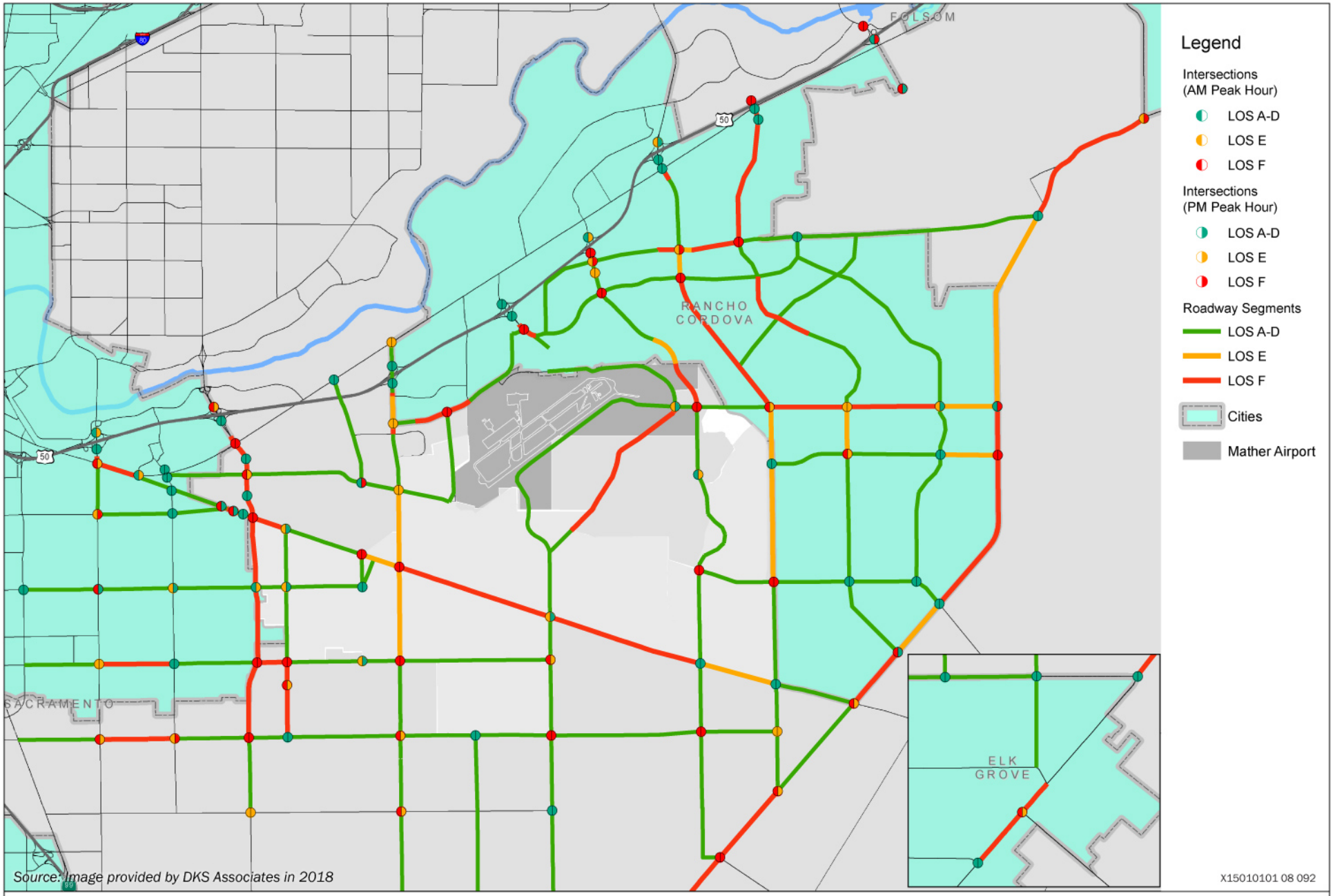
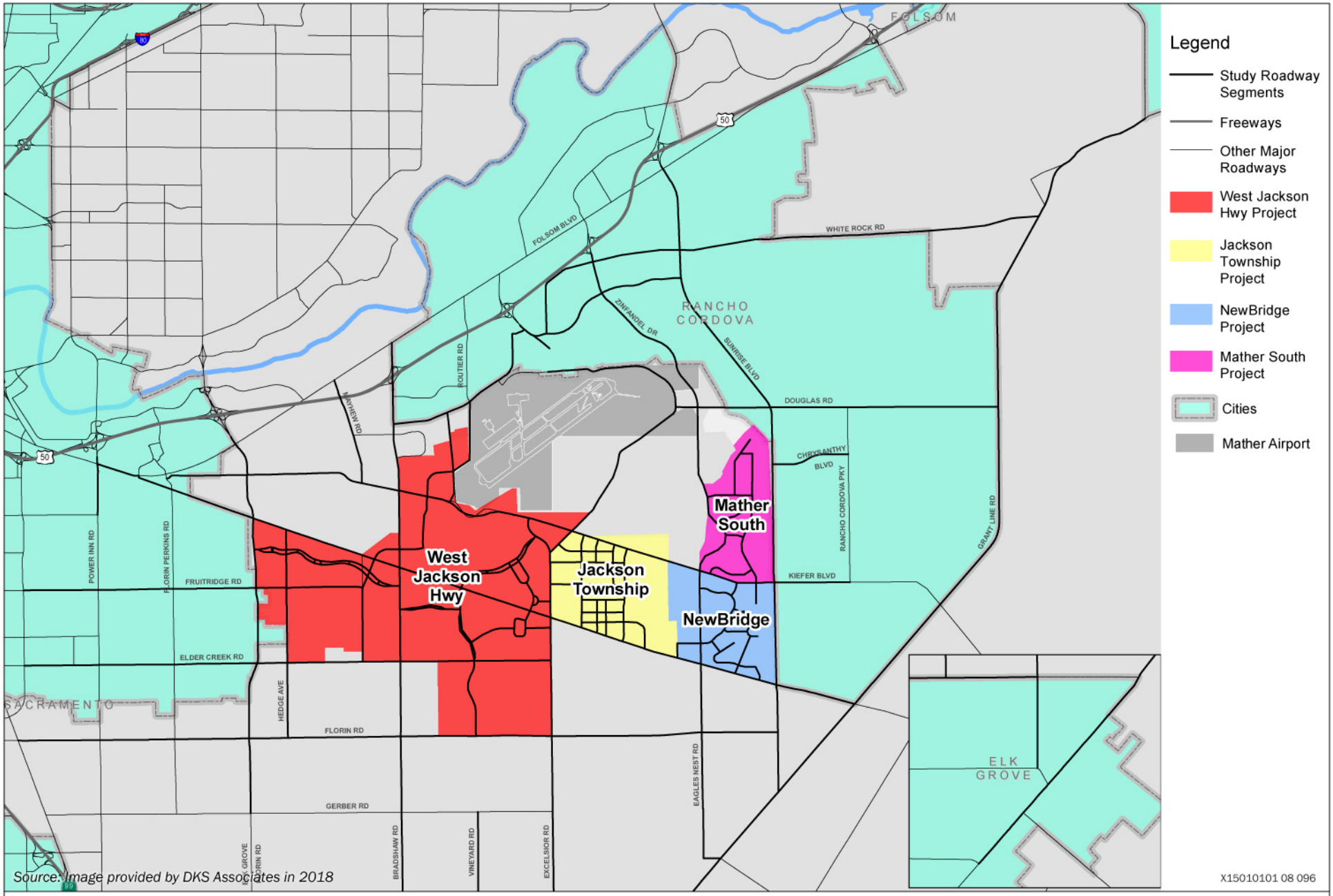


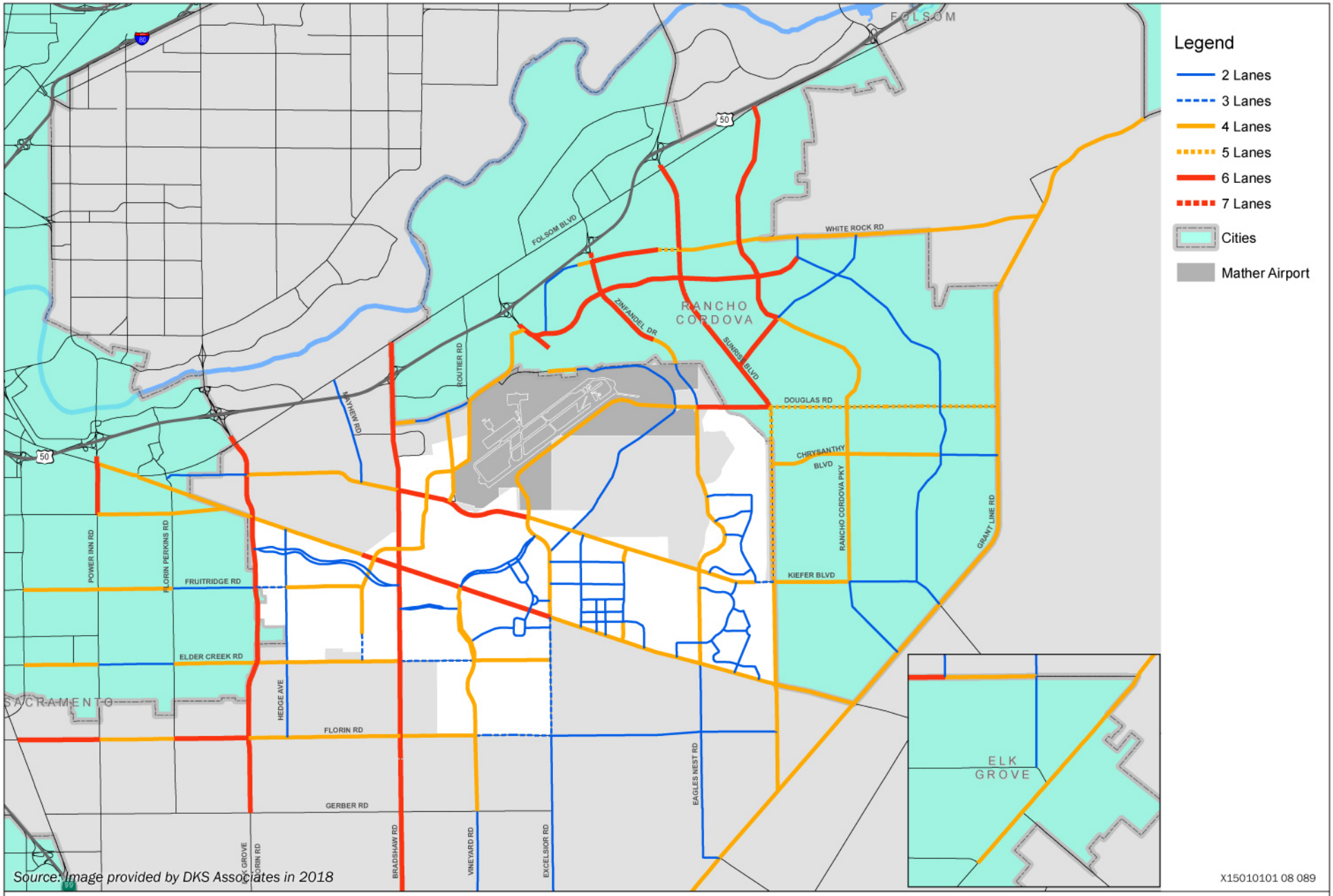
Plate CU-2: CEQA Cumulative No Project – Roadway Segment and Intersection LOS



Source: Image provided by DKS Associates in 2018

Plate CU-3: Jackson Corridor Projects Project Location

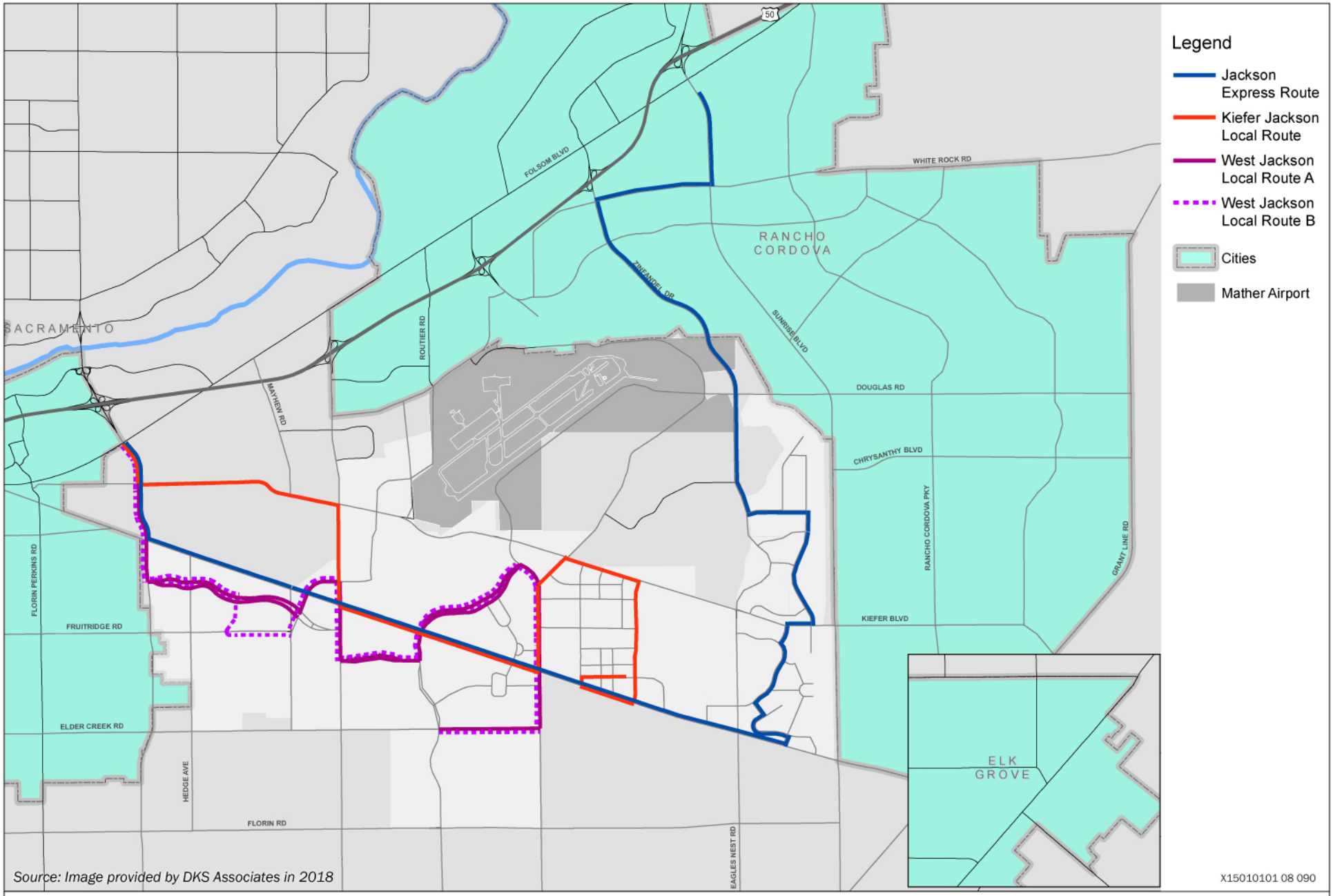
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Source: Image provided by DKS Associates in 2018

Plate CU-4: Cumulative Plus Jackson Corridor Projects Roadway Network

ASCENT ENVIRONMENTAL



Source: Image provided by DKS Associates in 2018

Plate CU-5: Cumulative Plus Jackson Corridor Projects – Project Transit Network

ASCENT ENVIRONMENTAL

TRIP GENERATION

The SACSIM model was utilized to estimate trip generation of the Jackson Corridor Projects. **Table CU-1** summarizes the person trip generation. The Jackson Corridor Projects would generate over 86,000 daily work person trip ends, and over 730,000 daily person trip ends for all trip purposes.

Table CU-1: Estimated Daily Person Trip Generation (Cumulative plus Jackson Corridor Projects Scenario)

Project	Trip Purpose	Daily Person Trip Ends
Jackson Corridor Projects	Work Trips	86,484
	Non-Work Trips	643,573
	All Trip Purposes	730,057
Source: DKS Associates 2018		

Table CU-2 summarizes the estimated mode choice for the Cumulative Plus Jackson Corridor Projects scenario. Over 90 percent of all person trips are expected to be accommodated by automobile. Transit would serve about 1.9 percent of all trips, while walk and bike modes would accommodate about 6.9 percent of all trips. The mode choice assumes full implementation of the project's pedestrian and bicycle systems.

Table CU-3 summarizes the vehicular trip generation of the Jackson Corridor Projects. The Jackson Corridor Projects are estimated to generate nearly 498,000 daily vehicle trip ends. Over 62,700 of the daily vehicle trip ends would be associated with trips with both an origin and destination within the individual projects, about 12.6 percent of the trip ends. The internal trip ends represent over 31,000 daily vehicle trips (one-half the number of internal trip ends). The Jackson Corridor Projects would generate about 435,000 external vehicle trips that have an origin or destination inside one of the Jackson Corridor Projects but the other end of the trip would occur outside of the project from which it originated. **Table CU-3** also shows the vehicle trips generated during the a.m. and p.m. peak hours.

Table CU-2: Mode Split (Cumulative plus Jackson Corridor Projects Scenario)

Project	Mode	Percentage of Person Trips by Trip Purpose		
		Work Trips	Non-Work Trips	All Trip Purposes
Jackson Corridor Projects	Auto - SOV	83.4%	48.2%	52.4%
	Auto - HOV	10.3%	42.6%	38.8%
	Transit	4.1%	1.6%	1.9%
	Walk	1.2%	6.7%	6.0%
	Bike	0.9%	0.9%	0.9%
Source: DKS Associates 2018				

Table CU-3: Estimated Daily Vehicle Trip Generation (Cumulative plus Jackson Corridor Projects Scenario)

Trip Type		A.M. Peak Hour	P.M. Peak Hour	Daily
Total Vehicle Trip Ends		42,469	68,316	497,930
Percent Internal Trip Ends[1]		15.9%	22.5%	19.2%
Vehicle trips	Internal to Project	3,384	7,673	47,725
	External to Project	35,700	52,970	402,480
	Total	39,084	60,643	450,205

[1] Both trip ends within the project.
Source: DKS Associates 2018.

TRIP DISTRIBUTION

The distribution of trips associated with development of the Jackson Corridor Projects was derived utilizing SACSIM and incorporating the proposed land use and access locations associated with the Jackson Corridor Projects. Trip distribution varies by land use and time period. **Plate CU-6** illustrates the overall trip distribution of daily Jackson Corridor Projects trips in the Cumulative Plus Jackson Corridor Projects scenario. The highest percentage of Jackson Corridor Projects traffic would travel along Jackson Road, Bradshaw Road, Kiefer Boulevard, and Vineyard Road.

CUMULATIVE PLUS MATHER SOUTH PROJECT SCENARIO

The analysis of the Cumulative Plus Mather South Project scenario assumes that the other three projects that make up the Jackson Corridor Projects would be developed and analyzes cumulative conditions (year 2035) with implementation and buildout of the Mather South Project based upon the analysis of the Cumulative Plus Jackson Corridor Projects scenario. This scenario includes a detailed transportation and traffic analysis to understand the cumulative effects directly attributed to the Mather South Project.

The SACSIM travel model was utilized to estimate the portion of the Jackson Corridor Projects traffic that is attributed to the Mather South Project. With this information, the significant impacts triggered by the Mather South Project were identified. It should be noted that, even at locations where the Mather South Project on its own would not trigger a significant impact, the Mather South Project contributes to the cumulative impacts associated with the Cumulative Plus Jackson Corridor Projects scenario.

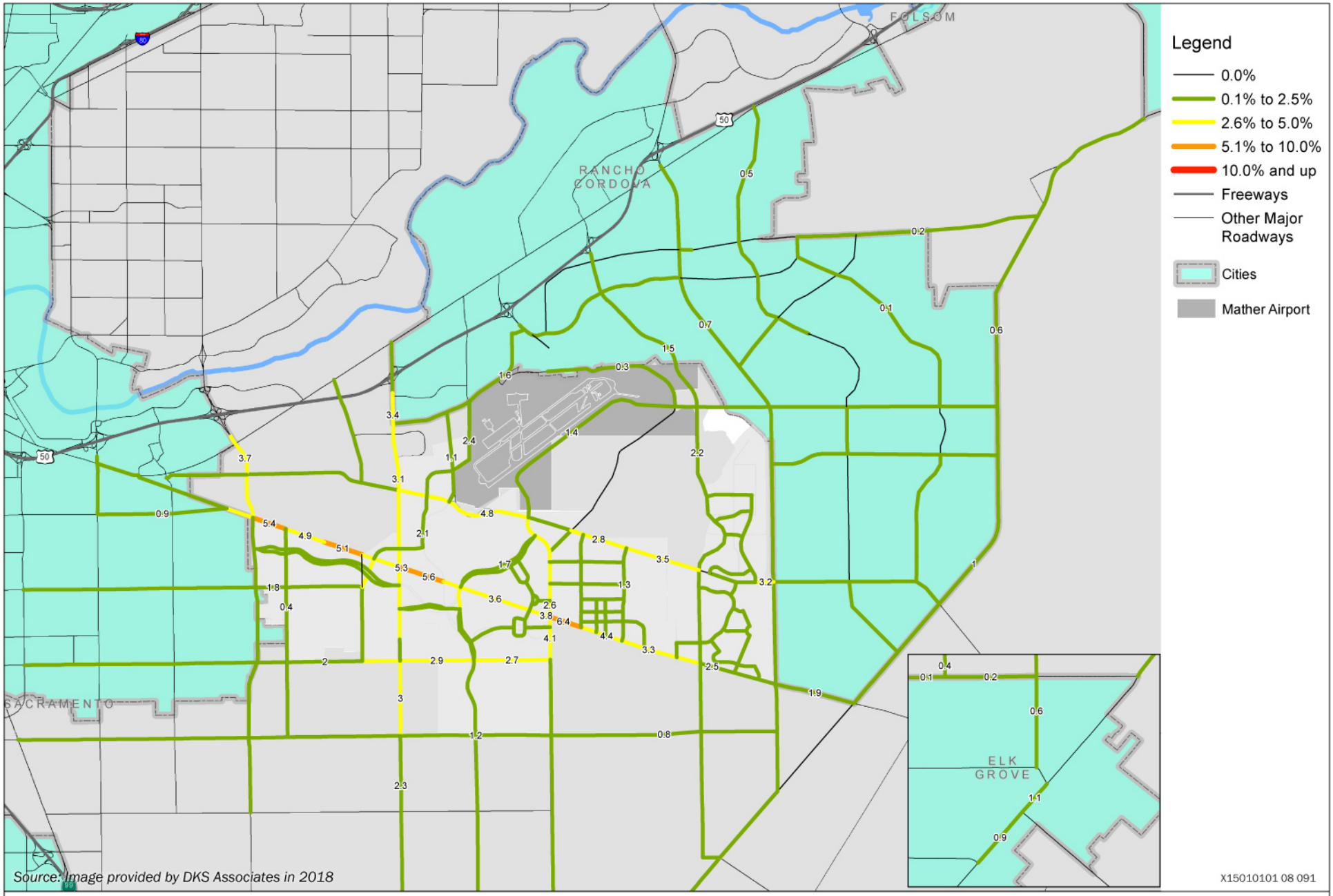


Plate CU-6: Cumulative Plus Jackson Corridor Projects - Trip Distribution

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TRIP GENERATION

The trip generation of the Mather South Project was estimated using the SACSIM model. **Table CU-4** summarizes the person trip generation. The Mather South Project would generate over 7,000 daily work person trip ends, and nearly 80,000 daily person trip ends for all trip purposes.

Table CU-4: Estimated Daily Person Trip Generation (Cumulative Plus Mather South Project Scenario)

Project	Trip Purpose	Daily Person Trip Ends
Mather South	Work Trips	7,045
	Non-Work Trips	72,934
	All Trip Purposes	79,979
Source: DKS Associates 2018		

Table CU-5 summarizes the estimated mode choice for the Mather South Project. Almost 90 percent of all person trips would be expected to be accommodated by automobile. Transit would serve about 2.0 percent of all trips, while walk and bike modes would accommodate about 8.4 percent of all trips.

Table CU-5: Mode Split (Cumulative Plus Mather South Project Scenario)

Project	Mode	Percentage of Person Trips by Trip Purpose		
		Work Trips	Non-Work Trips	All Trip Purposes
Mather South	Auto - SOV	83.7%	50.5%	53.4%
	Auto - HOV	11.3%	38.7%	36.3%
	Transit	2.7%	1.9%	2.0%
	Walk	1.5%	7.5%	7.0%
	Bike	0.9%	1.4%	1.4%
Source: DKS Associates 2018				

Table CU-6 summarizes the vehicular (auto) trip generation of the Mather South Project. The Mather South Project is estimated to generate over 54,000 daily vehicle trip ends. About 3,500 of the daily vehicle trip ends would be associated with trips with both an origin and destination within the Mather South Project, about 13 percent of the trip ends. Those internal trip ends represent about 1,750 daily vehicle trips (one-half the number of internal trip ends). The Mather South Project would generate over 47,000 external vehicle trips that have an origin or destination inside the Mather South Project but the other end of the trip is outside the Mather South Project. **Table CU-6** also shows the vehicle trips generated during the a.m. and p.m. peak hours.

Table CU-6: Estimated Daily Vehicle Trip Generation (Cumulative Plus Mather South Project Scenario)

Mather South Project Trip Type		A.M. Peak Hour	P.M. Peak Hour	Daily
Total Vehicle Trip Ends		5,225	7,170	54,222
Percent Internal Trip Ends1		14.4%	13.8%	13.0%
Vehicle trips	Internal to Project	377	497	3,524
	External to Project	4,471	6,177	47,175
	Total	4,848	6,673	50,698

[1] Both trip ends within the project.
Source: DKS Associates 2018

TRIP DISTRIBUTION

The distribution of trips associated with development on the Mather South Project site was derived utilizing SACSIM, incorporating the proposed land use and access locations associated with the Mather South Project site. Trip distribution varies by land use and time period. **Plate CU-7** illustrates the overall trip distribution of daily Mather South Project trips.

DYNAMIC IMPLEMENTATION TOOL

As described in Chapter 17, Traffic and Circulation, the County has developed and will use the Dynamic Implementation Tool to select appropriate, fair-share mitigation requirements for each project within the Jackson Corridor. Please refer to Chapter 17 for additional details.

CUMULATIVE IMPACTS EVALUATION

CUMULATIVE PLUS FOUR PROJECTS

CUMULATIVE ROADWAY SEGMENT OPERATIONS

Table CU-7 shows the operations analysis for the traffic study area roadway segments which would experience significant impacts under the Cumulative Plus Jackson Corridor Projects scenario. The table includes the new roadways and/or widened roadways, the project(s) responsible for the roadway improvements, and the roadway segments where a LOS impact occurs. **Plate CU-8** illustrates the resultant traffic operating conditions associated with the Cumulative Plus Jackson Corridor Projects scenario. Detailed roadway segment operations calculations and the full list of study area roadway segment operating conditions are included in Appendix TR-1.

As shown in Table CU-7, the addition of vehicle trips generated by the Jackson Corridor Projects would result in the exceedance of applicable LOS and V/C thresholds along 69 roadway segments in the study area. Thus, the project would have a cumulatively considerable contribution to a significant cumulative impact.

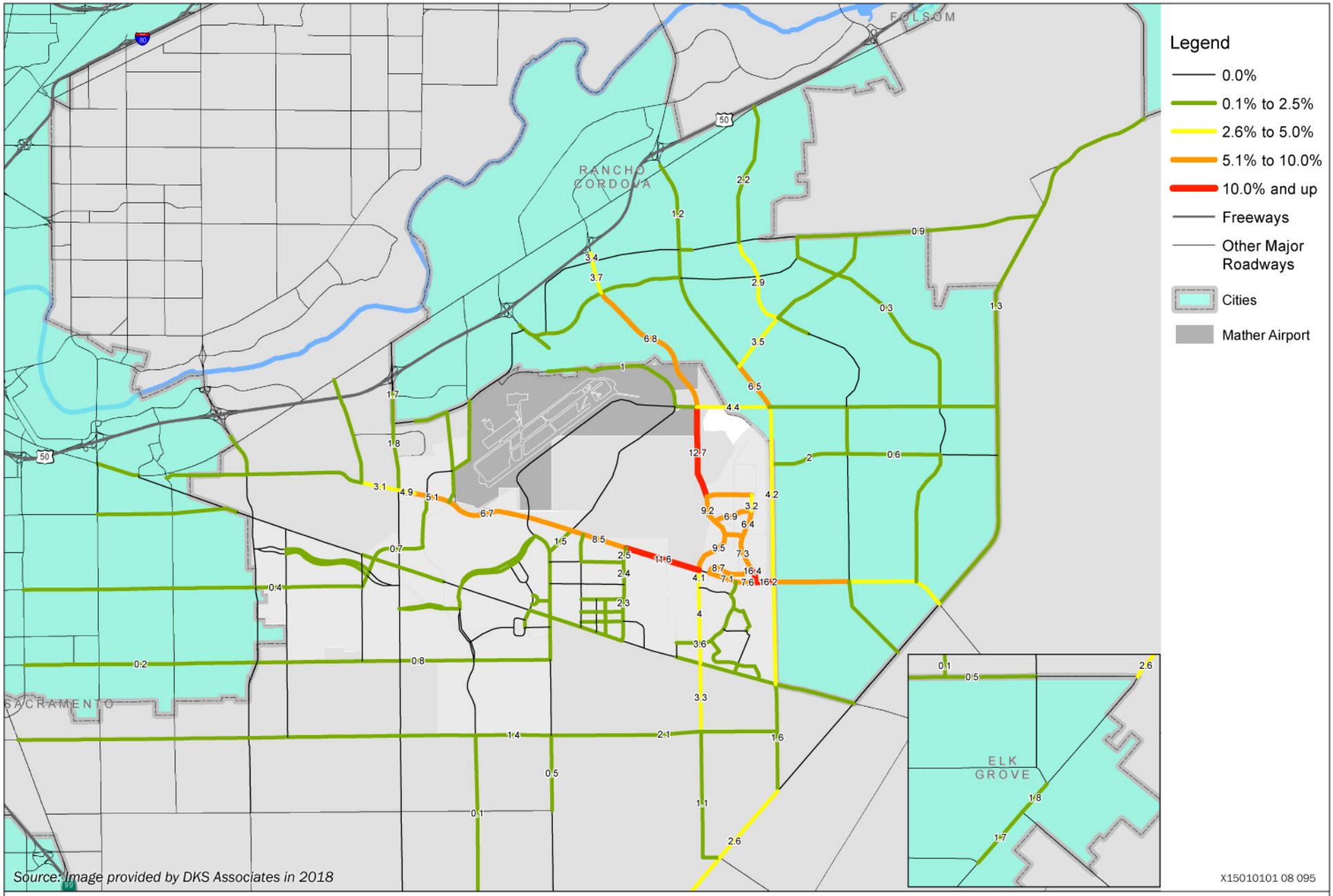


Plate CU-7: Cumulative Plus Mather South Project – Trip Distribution

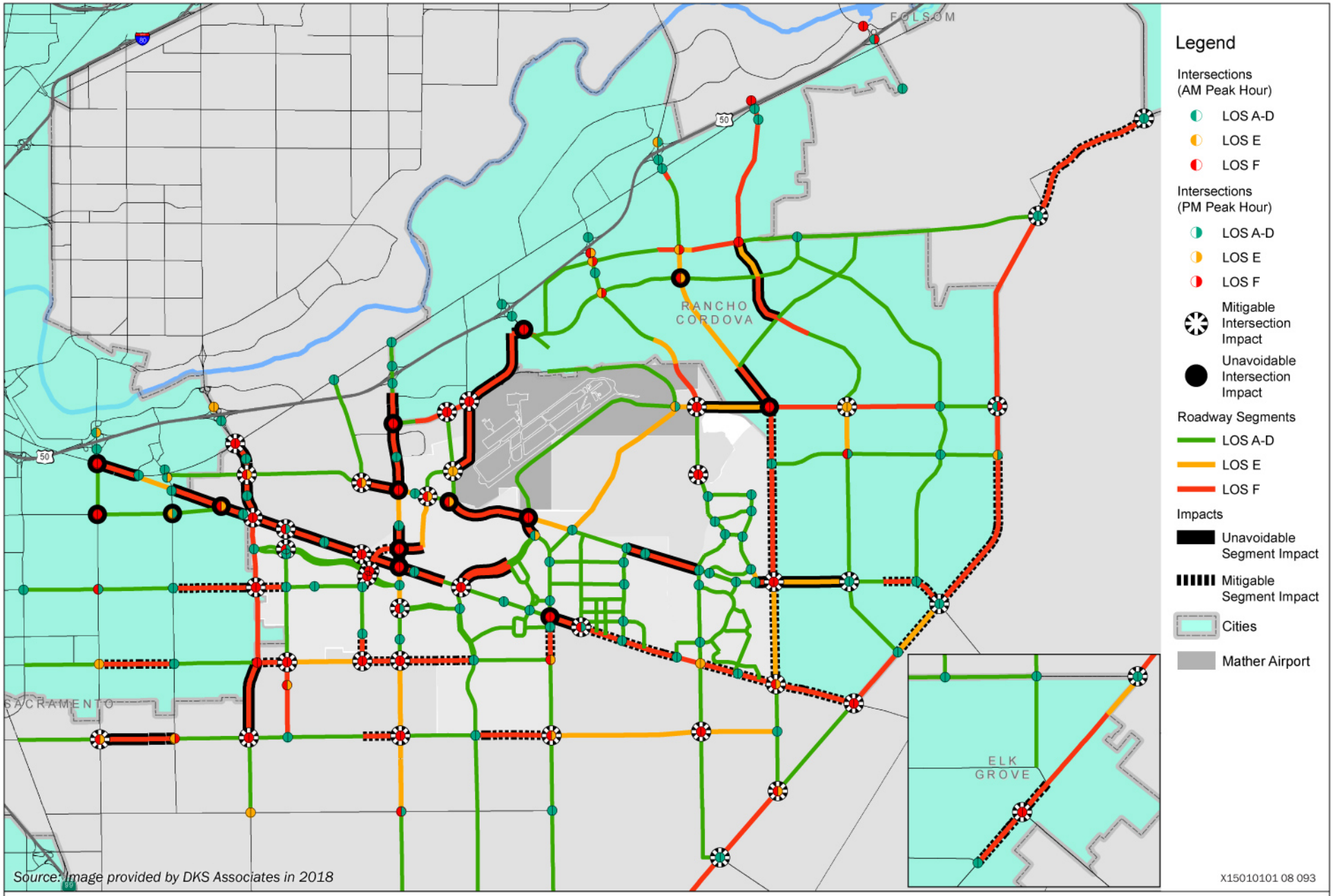


Plate CU-8: Cumulative Plus Jackson Corridor Projects –Roadway Segment and Intersection LOS and Impacts

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Table CU-7: Cumulative No Project and Cumulative Plus Jackson Corridor Projects Roadway Segment Levels of Service

ID	Roadway	Segment		Cumulative No Project					Cumulative Plus Jackson Corridor Projects					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	V/C Ratio	LOS	Travel Lanes	Facility Type[1]	Forecasted Volume	V/C Ratio	LOS	
2	Bradshaw Rd	US 50	Lincoln Village Dr	6	Arterial M	66,770	1.24	F	6	Arterial M	84,620	1.57	F	
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	6	Arterial M	52,940	0.98	E	6	Arterial M	76,770	1.42	F	
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd	6	Arterial M	62,600	1.16	F	6	Arterial M	73,340	1.36	F	
5.1	Bradshaw Rd	Goethe Rd	Collector WJ-8	6	Arterial M	47,100	0.87	D	6	Arterial M	62,160	1.15	F	
5.2	Bradshaw Rd	Collector WJ-8	Kiefer Blvd	6	Arterial M	45,320	0.84	D	6	Arterial M	58,600	1.09	F	
6.2	Bradshaw Rd	Collector WJ-9	Mayhew Rd	6	Arterial M	52,070	0.96	E	6	Arterial M	54,090	1.00	F	
6.3	Bradshaw Rd	Mayhew Rd	Jackson Rd	6	Arterial M	52,020	0.96	E	6	Arterial M	57,490	1.06	F	
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	37,550	0.70	B	6	Arterial M	50,360	0.93	E	
19.1	Eagles Nest Rd	Kiefer Blvd	N Bridgewater Dr	2	Arterial M	4,620	0.26	A	4	Arterial M	11,220	0.31	A	NewBridge
19.2	Eagles Nest Rd	N Bridgewater Dr	S Bridgewater Dr	2	Arterial M	4,620	0.26	A	4	Arterial M	11,620	0.32	A	NewBridge
19.3	Eagles Nest Rd	S Bridgewater Dr	Jackson Rd	2	Arterial M	4,710	0.26	A	4	Arterial M	13,130	0.36	A	NewBridge
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	25,170	1.40	F	2	Arterial M	28,360	1.58	F	
25	Elder Creek Rd	South Watt Ave	Hedge Ave	4	Arterial M	40,860	1.14	F	4	Arterial M	52,900	1.47	F	
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	17,980	0.50	A	4	Arterial M	40,490	1.12	F	
28.1	Elder Creek Rd	Bradshaw Rd	Vineyard Rd	2	Arterial M	9,230	0.51	A	3	Arterial M	30,740	1.71	F	West Jackson
28.2	Elder Creek Rd	Vineyard Rd	Excelsior Rd	2	Arterial M	9,430	0.52	A	4	Arterial M	25,360	0.70	C	West Jackson
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6	2	Arterial M	11,960	0.66	B	3	Arterial M	36,910	2.05	F	West Jackson
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd	2	Arterial M	11,960	0.66	B	3	Arterial M	36,220	2.01	F	West Jackson
32	Excelsior Rd	Elder Creek Rd	Florin Rd	2	Arterial M	4,670	0.26	A	3	Arterial M	12,520	0.70	B	West Jackson
37	Florin Rd	Power Inn Rd	Florin-Perkins Rd	4	Arterial M	37,240	1.03	F	4	Arterial M	43,690	1.21	F	
41	Florin Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	30,290	0.84	D	4	Arterial M	40,200	1.12	F	
42.2	Florin Rd	Vineyard Rd	Excelsior Rd	2	Arterial M	11,650	0.65	B	3	Arterial M	19,920	1.11	F	West Jackson
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	50,520	1.40	F	4	Arterial M	56,000	1.56	F	
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	13,770	0.77	C	2	Arterial M	27,770	1.54	F	
48	Fruitridge Rd	South Watt Ave	Hedge Ave	2	Arterial M	5,770	0.32	A	3	Arterial M	24,240	1.35	F	West Jackson
49.1	Fruitridge Rd	Hedge Ave	Collector WJ-12	2	Arterial M	2,140	0.12	A	4	Arterial M	24,260	0.67	B	West Jackson
49.2	Fruitridge Rd	Collector WJ-12	Mayhew Rd	2	Arterial M	2,110	0.12	A	4	Arterial M	21,800	0.61	B	West Jackson
51.2	Grant Line Rd	Chrysanthy Blvd	Kiefer Blvd	4	Arterial H	44,930	1.12	F	4	Arterial H	47,640	1.19	F	
52.1	Grant Line Rd	Kiefer Blvd	Rancho Cordova Pkwy	4	Arterial H	34,170	0.85	D	4	Arterial H	37,030	0.93	E	
56	Grant Line Rd	Sheldon Rd	Wilton Rd	4	Arterial M	40,570	1.13	F	4	Arterial M	45,430	1.26	F	
57	Grant Line Rd	Wilton Rd	Bond Rd	4	Arterial M	36,110	1.00	F	4	Arterial M	40,370	1.12	F	
58.2	Happy Lane	Routier Ext	Kiefer Boulevard	2	Arterial M	4,970	0.28	A	2	Arterial M	20,580	1.14	F	West Jackson
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	67,180	1.24	F	6	Arterial M	71,420	1.32	F	
66.1	Jackson Rd	Florin Perkins Rd	14th Ave	4	Arterial M	30,980	0.86	D	4	Arterial M	44,100	1.23	F	
66.2	Jackson Rd	14th Ave	Rock Creek Pkwy	4	Arterial M	40,320	1.12	F	4	Arterial M	61,980	1.72	F	
66.3	Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy	4	Arterial M	34,630	0.96	E	4	Arterial M	57,690	1.60	F	
66.4	Jackson Rd	Aspen 1 Dwy	South Watt Ave	4	Arterial M	32,480	0.90	E	4	Arterial M	55,370	1.54	F	
67	Jackson Rd	South Watt Ave	Hedge Ave	4	Arterial M	38,240	1.06	F	4	Arterial M	66,380	1.84	F	
68.1	Jackson Rd	Hedge Ave	Collector WJ-3	4	Arterial M	31,080	0.86	D	4	Arterial M	56,540	1.57	F	
68.2	Jackson Rd	Collector WJ-3	Mayhew Rd	4	Arterial M	31,040	0.86	D	4	Arterial M	57,880	1.61	F	
69	Jackson Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	33,920	0.94	E	6	Arterial M	56,220	1.04	F	West Jackson
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4	2	Rural Hwy	23,120	1.01	F	6	Arterial M	59,380	1.10	F	West Jackson

ID	Roadway	Segment		Cumulative No Project					Cumulative Plus Jackson Corridor Projects					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	V/C Ratio	LOS	Travel Lanes	Facility Type[1]	Forecasted Volume	V/C Ratio	LOS	
70.2	Jackson Rd	Collector WJ-4	Rock Creek Pkwy	2	Rural Hwy	23,190	1.01	F	6	Arterial M	59,660	1.10	F	West Jackson
70.3	Jackson Rd	Happy Ln	Rock Creek Pkwy	2	Rural Hwy	23,000	1.00	F	6	Arterial M	41,550	0.77	C	West Jackson
70.4	Jackson Rd	Rock Creek Pkwy	Collector WJ-5	2	Rural Hwy	23,000	1.00	F	6	Arterial M	41,200	0.76	C	West Jackson
70.5	Jackson Rd	Collector WJ-5	Collector WJ-6	2	Rural Hwy	23,010	1.00	F	6	Arterial M	38,910	0.72	C	West Jackson
70.6	Jackson Rd	Collector WJ-6	Excelsior Rd	2	Rural Hwy	23,010	1.00	F	6	Arterial M	39,330	0.73	C	West Jackson
71.1	Jackson Rd	Excelsior Rd	Collector JT-3	2	Rural Hwy	23,020	1.01	F	4	Arterial M	62,220	1.73	F	Jackson Township
71.2	Jackson Rd	Collector JT-3	Tree View Ln	2	Rural Hwy	23,020	1.01	F	4	Arterial M	46,480	1.29	F	Jackson Township
71.3	Jackson Rd	Tree View Ln	Collector JT-4	2	Rural Hwy	22,990	1.00	F	4	Arterial M	41,360	1.15	F	Jackson Township
71.4	Jackson Rd	Collector JT-4	Eagles Nest Rd	2	Rural Hwy	23,020	1.01	F	4	Arterial M	37,600	1.04	F	Jackson Township
72.1	Jackson Rd	Eagles Nest Rd	Rockbridge Dr	2	Rural Hwy	21,910	0.96	E	4	Arterial M	37,120	1.03	F	NewBridge
72.2	Jackson Rd	Rockbridge Dr	Sunrise Blvd	2	Rural Hwy	22,630	0.99	E	4	Arterial M	37,910	1.05	F	NewBridge
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	4	Arterial M	31,730	0.88	D	4	Arterial M	45,290	1.26	F	
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd	4	Arterial M	13,290	0.37	A	4	Arterial M	42,310	1.18	F	
77.1	Kiefer Blvd	Bradshaw Road	Collector WJ-14	2	Arterial M	5,940	0.33	A	6	Arterial M	50,960	0.94	E	West Jackson
77.2	Kiefer Blvd	Collector WJ-14	Routier Ext	2	Arterial M	6,100	0.34	A	6	Arterial M	47,140	0.87	D	West Jackson
77.3	Kiefer Blvd	Routier Ext	Happy Lane	2	Arterial M	6,100	0.34	A	6	Arterial M	49,820	0.92	E	West Jackson
78.1	Kiefer Blvd	Eagles Nest Rd	W Collector MS-1	2	Arterial M	10,210	0.57	A	4	Arterial M	31,900	0.89	D	NewBridge; Mather South
78.2	Kiefer Blvd	W Collector MS-1	Northbridge Dr	2	Arterial M	10,210	0.57	A	4	Arterial M	29,740	0.83	D	NewBridge; Mather South
78.3	Kiefer Blvd	Northbridge Dr	E Collector MS-1	2	Arterial M	10,210	0.57	A	4	Arterial M	31,570	0.88	D	NewBridge; Mather South
78.4	Kiefer Blvd	E Collector MS-1	Sunrise Blvd	2	Arterial M	10,150	0.56	A	3	Arterial M	39,820	2.21	F	NewBridge
79	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	20,760	0.58	A	4	Arterial M	33,580	0.93	E	
89.1	Mayhew Rd	Jackson Rd	Rock Creek Pkwy	2	Arterial L	1,930	0.13	A	4	Arterial M	47,790	1.33	F	West Jackson
89.2	Mayhew Rd	Rock Creek Pkwy	Fruitridge Rd	2	Arterial L	1,930	0.13	A	4	Arterial M	46,860	1.30	F	West Jackson
93	Old Placerville Rd	Routier Rd	Rockingham Dr	4	Arterial M	24,070	0.67	B	4	Arterial M	36,350	1.01	F	
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd	4	Arterial M	31,970	0.89	D	4	Arterial M	40,280	1.12	F	
96	South Watt Ave	Folsom Blvd	Kiefer Blvd	6	Arterial M	68,980	1.28	F	6	Arterial M	81,880	1.52	F	
97	South Watt Ave	Kiefer Blvd	Jackson Rd	6	Arterial M	67,470	1.25	F	6	Arterial M	70,930	1.31	F	
100	South Watt Ave	Elder Creek Rd	Florin Rd	6	Arterial M	55,580	1.03	F	6	Arterial M	59,670	1.11	F	
104.3	Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	6	Arterial M	54,110	1.00	F	6	Arterial M	63,690	1.18	F	
105	Sunrise Blvd	Douglas Rd	Kiefer Blvd	5	Arterial M	34,760	0.97	E	5	Arterial M	43,880	1.22	F	
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	4	Arterial M	30,000	0.83	D	4	Arterial M	33,930	0.94	E	
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	98,040	1.63	F	6	Arterial H	106,480	1.77	F	
117	White Rock Rd	Grant Line Rd	Prairie City Rd	4	Arterial H	53,780	1.34	F	4	Arterial H	56,000	1.40	F	
132	Kiefer Blvd	Americanos Blvd	Grant Line Rd	2	Arterial M	10,250	0.57	A	2	Arterial M	19,200	1.07	F	
135	Rancho Cordova Pkwy	White Rock Rd	International Dr	6	Arterial M	46,590	0.86	D	6	Arterial M	49,960	0.93	E	
136	Rancho Cordova Pkwy	International Dr	Rio Del Oro Pkwy	6	Arterial M	55,520	1.03	F	6	Arterial M	59,540	1.10	F	
200	Kiefer Blvd	Tree View Ln	Eagles Nest Rd						4	Arterial M	37,180	1.03	F	Jackson Township; NewBridge
301	Douglas Rd	Rock Creek Pkwy	Kiefer Blvd	4	Arterial M	7,380	0.21	A	4	Arterial M	36,990	1.03	F	
302	Kiefer Blvd	Happy Ln	Douglas Rd						6	Arterial M	63,170	1.17	F	West Jackson
303	Kiefer Blvd	Douglas Rd	Excelsior Rd						4	Arterial M	33,150	0.92	E	West Jackson

ID	Roadway	Segment		Cumulative No Project					Cumulative Plus Jackson Corridor Projects					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	V/C Ratio	LOS	Travel Lanes	Facility Type[1]	Forecasted Volume	V/C Ratio	LOS	
304	Mayhew Rd	Routier Ext	Bradshaw Rd						4	Arterial M	39,470	1.10	F	West Jackson
305	Mayhew Rd	Bradshaw Rd	Jackson Rd						4	Arterial M	40,970	1.14	F	West Jackson
306	Mayhew Rd	Fruitridge Rd	Collector WJ-13						4	Arterial M	30,030	0.83	D	West Jackson
307	Mayhew Rd	Collector WJ-13	Elder Creek Rd						3	Arterial M	32,580	1.81	F	West Jackson
308	Rock Creek Pkwy	South Watt Ave	Hedge Ave						2	Arterial M	7,450	0.41	A	West Jackson
309	Rock Creek Pkwy	Hedge Ave	Mayhew Rd						2	Arterial M	10,940	0.61	B	West Jackson
310	Rock Creek Pkwy	Mayhew Rd	Bradshaw Rd						2	Arterial M	4,730	0.26	A	West Jackson
311	Rock Creek Pkwy East	Excelsior Road	Collector WJ-16						2	Arterial M	13,510	0.75	C	West Jackson
312	Rock Creek Pkwy East	Collector WJ-16	Jackson Road						2	Arterial M	19,230	1.07	F	West Jackson
313	Vineyard Rd	Jackson Road	New Collector						4	Arterial M	31,060	0.86	D	West Jackson
314	Vineyard Rd	New Collector	Collector WJ-18						4	Arterial M	26,270	0.73	C	West Jackson
315	Vineyard Rd	Collector WJ-18	Elder Creek Road						4	Arterial M	25,590	0.71	C	West Jackson
316	Vineyard Rd	Elder Creek Road	Florin Road						4	Arterial M	14,340	0.40	A	West Jackson
317	Routier Ext	Old Placerville Road	Happy Lane						4	Arterial H	41,410	1.04	F	West Jackson
318	Routier Ext	Happy Lane	Kiefer Boulevard						4	Arterial H	34,670	0.87	D	West Jackson
319	Routier Ext	Kiefer Boulevard	Mayhew Road						4	Arterial H	39,110	0.98	E	West Jackson
320	Collector WJ-16	Rock Creek Pkwy	Collector WJ-6						2	Res Collector F	950	0.12	A	West Jackson
321	Collector WJ-17	Rock Creek Pkwy	Collector WJ-6						2	Res Collector F	850	0.11	A	West Jackson
322	Collector WJ-6	Collector WJ-16/WJ-17	Jackson Road						2	Res Collector F	2,730	0.34	B	West Jackson
323	Collector WJ-6	Jackson Road	Collector WJ-18						2	Res Collector F	3,640	0.46	C	West Jackson
324	Collector WJ-2	Excelsior Road	Collector WJ-6						2	Res Collector F	2,860	0.36	B	West Jackson
325	Collector WJ-18	Vineyard Rd	Collector WJ-6						2	Res Collector F	3,360	0.42	C	West Jackson
326	Collector WJ-18	Collector WJ-6	Excelsior Road						2	Res Collector F	3,270	0.41	C	West Jackson
327	Collector WJ-19	Bradshaw Road	Vineyard Road						2	Arterial M	7,820	0.43	A	West Jackson
400	Collector JT-1	Excelsior Rd	Collector JT-3						2	Res Collector F	4,570	0.57	C	Jackson Township
401	Collector JT-1	Collector JT-3	Tree View Ln						2	Res Collector F	1,550	0.19	A	Jackson Township
402	Collector JT-3	Kiefer Blvd	Collector JT-1						2	Res Collector F	1,840	0.23	B	Jackson Township
403	Collector JT-3	Collector JT-1	Collector JT-6						2	Res Collector F	1,290	0.16	A	Jackson Township
404	Collector JT-3	Collector JT-6	Collector JT-5						2	Res Collector F	2,630	0.33	B	Jackson Township
405	Collector JT-3	Collector JT-5	Jackson Rd						2	Arterial M	20,070	1.12	F	Jackson Township
406	Collector JT-4	Jackson Rd	Bridgewater Dr						2	Arterial M	4,440	0.25	A	Jackson Township
407	Collector JT-5	Collector JT-3	Tree View Ln						2	Arterial M	10,100	0.56	A	Jackson Township
408	Collector JT-6	Excelsior Rd	Collector JT-3						2	Res Collector F	4,370	0.55	C	Jackson Township
409	Collector JT-6	Collector JT-3	Tree View Ln						2	Res Collector F	850	0.11	A	Jackson Township
410	Kiefer Blvd	Excelsior Rd	Tree View Ln						4	Arterial M	31,510	0.88	D	Jackson Township
411	Tree View Ln	Kiefer Blvd	Collector JT-1						4	Arterial M	10,660	0.30	A	Jackson Township
412	Tree View Ln	Collector JT-1	Collector JT-6						2	Arterial M	10,340	0.57	A	Jackson Township
413	Tree View Ln	Collector JT-6	Collector JT-5						2	Arterial M	10,250	0.57	A	Jackson Township
414	Tree View Ln	Collector JT-5	Jackson Rd						4	Arterial M	7,370	0.20	A	Jackson Township
415	Collector JT-7	Collector JT-3	Tree View Ln						2	Arterial M	1,590	0.09	A	Jackson Township
416	Collector JT-8	Collector JT-3	Tree View Ln						2	Arterial M	1,740	0.10	A	Jackson Township
417	Collector JT-9	Jackson Rd	Collector JT-8						2	Arterial M	3,600	0.20	A	Jackson Township
418	Collector JT-10	Jackson Rd	Collector JT-8						2	Arterial M	1,570	0.09	A	Jackson Township

ID	Roadway	Segment		Cumulative No Project					Cumulative Plus Jackson Corridor Projects					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	V/C Ratio	LOS	Travel Lanes	Facility Type[1]	Forecasted Volume	V/C Ratio	LOS	
419	Collector JT-6	Tree View Ln	Jackson Rd						2	Res Collector F	1,770	0.22	B	Jackson Township
500	S Bridgewater Dr	Collector JT-4	Eagles Nest Rd						2	Res Collector F	5,220	0.65	D	NewBridge
501	S Bridgewater Dr	Eagles Nest Rd	Northbridge Dr						2	Res Collector F	4,620	0.58	C	NewBridge
502	N Bridgewater Dr	Northbridge Dr	Eagles Nest Rd						2	Res Collector F	1,240	0.16	A	NewBridge
503	Northbridge Dr	Kiefer Blvd	Bridgewater Dr						2	Arterial M	4,320	0.24	A	NewBridge
504	Street A	S Bridgewater Dr	Street B						2	Res Collector F	1,800	0.23	B	NewBridge
505	Street B	S Bridgewater Dr	Street A						2	Res Collector F	1,440	0.18	A	NewBridge
506	Rockbridge Dr	Street B	Stonebridge Dr						2	Res Collector F	1,850	0.23	B	NewBridge
507	Rockbridge Dr	Stonebridge Dr	Jackson Rd						2	Arterial M	7,640	0.42	A	NewBridge
508	Stonebridge Dr	S Bridgewater Dr	Rockbridge Dr						2	Arterial M	2,480	0.14	A	NewBridge
509	Stonebridge Dr	Rockbridge Dr	Jackson Rd						2	Res Collector F	4,440	0.56	C	NewBridge
600	Collector MS-1	Kiefer Boulevard	Collector MS-5						2	Arterial M	16,870	0.94	E	Mather South
601	Collector MS-1	Collector MS-5	Collector MS-4						2	Arterial M	7,670	0.43	A	Mather South
602	Collector MS-1	Collector MS-4	Collector MS-3						2	Res Collector F	6,350	0.79	D	Mather South
603	Collector MS-1	Collector MS-3	Collector MS-2						2	Arterial M	3,140	0.17	A	Mather South
604	Collector MS-2	Eagles Nest Road	Collector MS-5						2	Arterial M	8,910	0.50	A	Mather South
605	Collector MS-3	Eagles Nest Road	Collector MS-5						2	Arterial M	6,860	0.38	A	Mather South
606	Collector MS-4	Eagles Nest Road	Collector MS-5						2	Arterial M	7,130	0.40	A	Mather South
607	Collector MS-5	Kiefer Boulevard	Collector MS-1						2	Arterial M	8,770	0.49	A	Mather South

Notes: V/C = Volume to Capacity, LOS = Level of Service

Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide.

Bold values do not meet LOS policy. Red values with light gray shading indicate project impacts.

1. The following classifications are used to determine daily roadway capacity: Arterial L - Arterial, Low Access Control

Arterial M - Arterial, Moderate Access Control Arterial H - Arterial, High Access Control Rural Hwy - Rural 2-lane Highway

Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders Res Collector F - Residential Collector with Frontage

Res Collector NF - Residential Collector with No Frontage

Source: DKS Associate 2018

MITIGATION MEASURES

CU-TR-1. Cumulative Roadway Segment Operations.

> The project applicant shall implement Mitigation Measures TR-1 and TR-2. The project applicant shall implement the set of improvements assigned to the project by the Tool (Mitigation Measure TR-1) as identified in Table CU-8. Detailed intersection operations calculations and the full list of study area intersection operating conditions are included in Appendix TR-1. Where feasible, the number of roadway lanes was increased to mitigate the impact. However, the roadways cannot be widened such that they exceed the maximum General Plan standards and designations of the appropriate jurisdictions. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate roadways widened as part of mitigation, which would be the responsibility of the Mather South project to implement. The shaded table cells under the "Level of Service" heading indicate those locations that would continue to operate unacceptably after mitigation. The table also includes the constraint that precluded full mitigation of the LOS impact. In several locations where the improvements allowed under the general plan would not mitigate an LOS impact, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These alternative mitigation measures would either fully mitigate the impact or substantially reduce the level of impact. The shaded table cells under the "Level of Service" heading indicate those locations that would continue exceed applicable LOS standards after mitigation. The "LOS Impact with Mitigation" column shows whether a mitigation measure successfully mitigates the impact or not. A total of 45 of the 69 roadway segments would remain significant and unavoidable with implementation of mitigation.

Implementation of mitigation TR-1, TR-2, and CU-TR-1 would result in fair share payments toward improvements that would reduce the cumulative roadway segment impacts of the Mather South Project. Several segments would operate acceptably with implementation of mitigation. Mitigation would generally involve improvements within the alignment or widening of the roadway. The programmatic impacts of constructing these improvements have been evaluated within the scope of the technical sections of this Draft EIR. However, as shown in Table CU-8, because many roadway segments have reached the maximum number of lanes allowed under the General Plan, alternative mitigation was recommended. But, even with implementation of this alternative mitigation, some segments would continue to operate unacceptably.

Further, while implementation of Mitigation Measure TR-1, TR-2, and CU-TR-1 would result in fair share payment toward improvements that would reduce impacts to a less-than-significant level for some segments, it cannot be guaranteed that all of these improvements would be implemented concurrent with the phasing of development because of the dynamic and interrelated nature of mitigation improvements that would serve multiple development projects. Because the timing of implementation of all required improvements cannot be guaranteed and their implementation is not subject to the responsibility of just Mather South applicants and the County, it cannot be guaranteed that cumulative significant impacts to roadway segments would be reduced to a less-than-significant level at the time of phased development. Therefore, the project would have a substantial contribution to a significant cumulative impact. This impact would be considerable and **significant and unavoidable**.

Cumulative Intersection Operations

Table CU-9 and **Table CU-10** summarize the results of the operations analysis for the study area intersections under the Cumulative Plus Jackson Corridor Project scenario. The tables include the implementation of intersection changes associated with the Jackson Corridor Projects. **Table CU-10** illustrates the type of traffic control and number of lanes by type on each study area intersection approach. Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type would be fully funded by the project(s) shown in the last column. Shaded table cells in **Table CU-9** illustrate those locations with a LOS impact. **Plate CU-8** illustrates the resultant traffic operating conditions associated with the Cumulative Plus Jackson Corridor Projects scenario. Detailed intersection operations calculations and the full list of study area intersection operating conditions are included in Appendix TR-1.

A signal warrant analysis was conducted for all unsignalized intersections along Jackson Road, and other unsignalized intersections in close proximity to the project. Detailed signal warrant calculation sheets are included in Appendix TR-1. The following unsignalized intersections would operate at unacceptable levels and meet one or more traffic signal warrant under the Cumulative Plus Jackson Corridor Projects conditions:

- Happy Lane and Old Placerville Road
- Eagles Nest Road and Florin Road

As shown in **Table CU-9**, the addition of vehicle trips generated by Jackson Corridor Projects would result in the exceedance of applicable LOS and delay thresholds under Cumulative Plus Jackson Corridor Project conditions. Thus, the project would have a considerable contribution to a significant cumulative impact.

Table CU-8: Cumulative Plus Jackson Corridor Projects Roadway Segment Mitigations

ID	Roadway	Segment		Cumulative Plus Jackson Corridor Projects					Mitigated Cumulative Plus Jackson Corridor Projects						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	V/C Ratio	LOS	Travel Lanes	Facility Type[1]	V/C Ratio	LOS	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
2	Bradshaw Rd	US 50	Lincoln Village Dr	6	Arterial M	84,620	1.57	F	6	Arterial M	1.57	F	Yes		Maximum General Plan lanes
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	6	Arterial M	76,770	1.42	F	6	Arterial M	1.42	F	Yes		Maximum General Plan lanes
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd	6	Arterial M	73,340	1.36	F	6	Arterial M	1.36	F	Yes		Maximum General Plan lanes
5.1	Bradshaw Rd	Goethe Rd	Collector WJ-8	6	Arterial M	62,160	1.15	F	6	Arterial M	1.15	F	Yes		Maximum General Plan lanes
5.2	Bradshaw Rd	Collector WJ-8	Kiefer Blvd	6	Arterial M	58,600	1.09	F	6	Arterial M	1.09	F	Yes		Maximum General Plan lanes
6.2	Bradshaw Rd	Collector WJ-9	Mayhew Rd	6	Arterial M	54,090	1.00	F	6	Arterial M	1.00	F	Yes		Maximum General Plan lanes
6.3	Bradshaw Rd	Mayhew Rd	Jackson Rd	6	Arterial M	57,490	1.06	F	6	Arterial M	1.06	F	Yes		Maximum General Plan lanes
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	50,360	0.93	E	6	Arterial M	0.93	E	Yes		Maximum General Plan lanes
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	28,360	1.58	F	4	Arterial M	0.79	C	No		
25	Elder Creek Rd	South Watt Ave	Hedge Ave	4	Arterial M	52,900	1.47	F	6	Arterial M	0.98	**E**	No		
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	40,490	1.12	F	6	Arterial M	0.75	C	No		
28.1	Elder Creek Rd	Bradshaw Rd	Vineyard Rd	3	Arterial M	30,740	1.71	F	4	Arterial M	0.85	D	No		
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6	3	Arterial M	36,910	2.05	F	6	Arterial M	0.68	B	No		
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd	3	Arterial M	36,220	2.01	F	6	Arterial M	0.67	B	No		
37	Florin Rd	Power Inn Rd	Florin-Perkins Rd	4	Arterial M	43,690	1.21	F	4	Arterial M	1.21	F	Yes	Construct 2-lane Alta Florin Road	Maximum General Plan lanes
41	Florin Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	40,200	1.12	F	6	Arterial M	0.74	C	No		
42.2	Florin Rd	Vineyard Rd	Excelsior Rd	3	Arterial M	19,920	1.11	F	4	Arterial M	0.55	A	No		
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	56,000	1.56	F	4	Arterial M	1.56	F	Yes		Maximum General Plan lanes
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	27,770	1.54	F	4	Arterial M	0.77	C	No		
48	Fruitridge Rd	South Watt Ave	Hedge Ave	3	Arterial M	24,240	1.35	F	4	Arterial M	0.67	B	No		
51.2	Grant Line Rd	Chrysanthy Blvd	Kiefer Blvd	4	Arterial H	47,640	1.19	F	4	Arterial H	1.19	F	Yes		Maximum General Plan lanes
52.1	Grant Line Rd	Kiefer Blvd	Rancho Cordova Pkwy	4	Arterial H	37,030	0.93	E	4	Arterial H	0.93	E	Yes		Maximum General Plan lanes
56	Grant Line Rd	Sheldon Rd	Wilton Rd	4	Arterial M	45,430	1.26	F	4	Arterial M	1.26	F	Yes		Maximum General Plan lanes
57	Grant Line Rd	Wilton Rd	Bond Rd	4	Arterial M	40,370	1.12	F	4	Arterial M	1.12	F	Yes		Maximum General Plan lanes
58.2	Happy Ln	Routier Ext	Kiefer Blvd	2	Arterial M	20,580	1.14	F	2	Arterial M	1.14	F	Yes		Maximum General Plan lanes
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	71,420	1.32	F	6	Arterial M	1.32	F	Yes		Maximum General Plan lanes
66.1	Jackson Rd	Florin Perkins Rd	14th Ave	4	Arterial M	44,100	1.23	F	4	Arterial M	1.23	F	Yes		Maximum General Plan lanes
66.2	Jackson Rd	14th Ave	Rock Creek Pkwy	4	Arterial M	61,980	1.72	F	4	Arterial M	1.72	F	Yes		Maximum General Plan lanes
66.3	Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy	4	Arterial M	57,690	1.60	F	4	Arterial M	1.60	F	Yes		Maximum General Plan lanes
66.4	Jackson Rd	Aspen 1 Dwy	South Watt Ave	4	Arterial M	55,370	1.54	F	4	Arterial M	1.54	F	Yes		Maximum General Plan lanes
67	Jackson Rd	South Watt Ave	Hedge Ave	4	Arterial M	66,380	1.84	F	6	Arterial M	1.23	F	Yes		Maximum General Plan lanes

ID	Roadway	Segment		Cumulative Plus Jackson Corridor Projects					Mitigated Cumulative Plus Jackson Corridor Projects						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	V/C Ratio	LOS	Travel Lanes	Facility Type[1]	V/C Ratio	LOS	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
68.1	Jackson Rd	Hedge Ave	Collector WJ-3	4	Arterial M	56,540	1.57	F	6	Arterial M	1.05	F	Yes		Maximum General Plan lanes
68.2	Jackson Rd	Collector WJ-3	Mayhew Rd	4	Arterial M	57,880	1.61	F	6	Arterial M	1.07	F	Yes		Maximum General Plan lanes
69	Jackson Rd	Mayhew Rd	Bradshaw Rd	6	Arterial M	56,220	1.04	F	6	Arterial M	1.04	F	Yes		Maximum General Plan lanes
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4	6	Arterial M	59,380	1.10	F	6	Arterial M	1.10	F	Yes		Maximum General Plan lanes
70.2	Jackson Rd	Collector WJ-4	Happy Ln	6	Arterial M	59,660	1.10	F	6	Arterial M	1.10	F	Yes		Maximum General Plan lanes
71.1	Jackson Rd	Excelsior Rd	Collector JT-3	4	Arterial M	62,220	1.73	F	6	Arterial M	1.15	F	Yes		Maximum General Plan lanes
71.2	Jackson Rd	Collector JT-3	Tree View Ln	4	Arterial M	46,480	1.29	F	6	Arterial M	0.86	D	No		
71.3	Jackson Rd	Tree View Ln	Collector JT-4	4	Arterial M	41,360	1.15	F	6	Arterial M	0.77	C	No		
72.1	Jackson Rd	Eagles Nest Rd	Rockbridge Dr	4	Arterial M	37,120	1.03	F	6	Arterial M	0.69	B	No		
72.2	Jackson Rd	Rockbridge Dr	Sunrise Blvd	4	Arterial M	37,910	1.05	F	6	Arterial M	0.70	C	No		
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	4	Arterial M	45,290	1.26	F	6	Arterial M	0.84	D	No		
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd	4	Arterial M	42,310	1.18	F	4	Arterial M	1.18	F	Yes		Maximum General Plan lanes
78.4	Kiefer Blvd	E Collector MS-1	Sunrise Blvd	3	Arterial M	39,820	2.21	F	4	Arterial M	1.11	F	Yes		Maximum General Plan lanes
79	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	33,580	0.93	E	4	Arterial M	0.93	E	Yes		Maximum General Plan lanes
89.1	Mayhew Rd	Jackson Rd	Rock Creek Pkwy	4	Arterial M	47,790	1.33	F	6	Arterial M	0.89	D	No		
89.2	Mayhew Rd	Rock Creek Pkwy	Fruitridge Rd	4	Arterial M	46,860	1.30	F	6	Arterial M	0.87	D	No		
93	Old Placerville Rd	Routier Rd	Rockingham Dr	4	Arterial M	36,350	1.01	F	4	Arterial M	1.01	F	Yes		Maximum General Plan lanes
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd	4	Arterial M	40,280	1.12	F	4	Arterial M	1.12	F	Yes		Maximum General Plan lanes
96	South Watt Ave	Folsom Blvd	Kiefer Blvd	6	Arterial M	81,880	1.52	F	6	Arterial M	1.52	F	Yes		Maximum General Plan lanes
97	South Watt Ave	Kiefer Blvd	Jackson Rd	6	Arterial M	70,930	1.31	F	6	Arterial M	1.31	F	Yes		Maximum General Plan lanes
100	South Watt Ave	Elder Creek Rd	Florin Rd	6	Arterial M	59,670	1.11	F	6	Arterial M	1.11	F	Yes		Maximum General Plan lanes
104.3	Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	6	Arterial M	63,690	1.18	F	6	Arterial M	1.18	F	Yes		Maximum General Plan lanes
105	Sunrise Blvd	Douglas Rd	Kiefer Blvd	5	Arterial M	43,880	1.22	F	6	Arterial M	0.81	D	No		
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	4	Arterial M	33,930	0.94	E	6	Arterial M	0.63	B	No		
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	106,480	1.77	F	6	Arterial H	1.77	F	Yes		Maximum General Plan lanes
117	White Rock Rd	Grant Line Rd	Prairie City Rd	4	Arterial H	56,000	1.40	F	4	Arterial H	1.40	F	Yes		Maximum General Plan lanes
132	Kiefer Blvd	Americanos Blvd	Grant Line Rd	2	Arterial M	19,200	1.07	F	4	Arterial M	0.53	A	No		
135	Rancho Cordova Pkwy	White Rock Rd	International Dr	6	Arterial M	49,960	0.93	E	6	Arterial M	0.93	E	Yes		Maximum General Plan lanes
136	Rancho Cordova Pkwy	International Dr	Rio Del Oro Pkwy	6	Arterial M	59,540	1.10	F	6	Arterial M	1.10	F	Yes		Maximum General Plan lanes
200	Kiefer Blvd	Tree View Ln	Eagles Nest Rd	4	Arterial M	37,180	1.03	F	4	Arterial M	1.03	F	Yes		Maximum General Plan lanes
301	Douglas Rd	Rock Creek Pkwy	Kiefer Blvd	4	Arterial M	36,990	1.03	F	4	Arterial M	1.03	F	Yes		Maximum General Plan lanes
302	Kiefer Blvd	Happy Ln	Douglas Rd	6	Arterial M	63,170	1.17	F	6	Arterial M	1.17	F	Yes		Maximum General Plan lanes
304	Mayhew Rd	Routier Ext	Bradshaw Rd	4	Arterial M	39,470	1.10	F	6	Arterial M	0.73	C	No		

ID	Roadway	Segment		Cumulative Plus Jackson Corridor Projects					Mitigated Cumulative Plus Jackson Corridor Projects						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	V/C Ratio	LOS	Travel Lanes	Facility Type[1]	V/C Ratio	LOS	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
305	Mayhew Rd	Bradshaw Rd	Jackson Rd	4	Arterial M	40,970	1.14	**F**	6	Arterial M	0.76	C	No		
307	Mayhew Rd	Collector WJ-13	Elder Creek Rd	3	Arterial M	32,580	1.81	**F**	4	Arterial M	0.91	E	No		
312	Rock Creek Pkwy East	Collector WJ-16	Jackson Road	2	Arterial M	19,230	1.07	**F**	2	Arterial M	1.07	**F**	Yes		Maximum General Plan lanes
317	Routier Ext	Old Placerville Road	Happy Lane	4	Arterial H	41,410	1.04	**F**	4	Arterial H	1.04	**F**	Yes		Maximum General Plan lanes
405	Collector JT-3	Collector JT-5	Jackson Rd	2	Arterial M	20,070	1.12	**F**	4	Arterial M	0.56	A	No		

Notes: LOS = Level of Service, V/C = Volume to Capacity

Gray shading represents changes in travel lanes or facility type that the project is responsible to provide.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

1. The following classifications are used to determine daily roadway capacity:

Arterial L - Arterial, Low Access Control Arterial M - Arterial, Moderate Access Control Arterial H - Arterial, High Access Control Rural Hwy - Rural 2-lane Highway

Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders Res Collector F - Residential Collector with Frontage

Res Collector NF - Residential Collector with No Frontage

2. Alternative mitigations represent proposed mitigations beyond the General Plan, as proposed by the County of Sacramento.

Source: DKS Associates 2018

Table CU-9: Cumulative Plus Jackson Corridor Projects Intersection Levels of Service

	Intersection	A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Corridor Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Corridor Projects			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
1	Howe Avenue & College Town Drive/US 50 WB Ramps	Signal	D	45.6	Signal	D	34.3	No	Signal	E	77.0	Signal	E	73.6	No
2	Howe Avenue & US 50 EB Ramps	Signal	C	34.6	Signal	D	50.5	No	Signal	B	16.5	Signal	C	23.6	No
3	Power Inn Road/Howe Avenue & Folsom Blvd	Signal	**F**	**88.0**	Signal	**F**	**108.2**	Yes	Signal	E	66.5	Signal	**F**	**88.4**	Yes
4	Power Inn Road & 14th Avenue	Signal	**E**	**61.0**	Signal	**F**	**166.0**	Yes	Signal	**E**	**72.6**	Signal	**F**	**123.7**	Yes
5	Power Inn Road & Fruitridge Road	Signal	**F**	**114.5**	Signal	**F**	**112.7**	No	Signal	D	47.4	Signal	D	48.7	No
6	Jackson Road/Notre Dame Dr. & Folsom Blvd.	Signal	C	27.7	Signal	C	27.8	No	Signal	C	24.1	Signal	D	38.6	No
7	Florin Perkins Road/Julliard Dr. & Folsom Boulevard	Signal	C	20.8	Signal	C	29.6	No	Signal	D	41.2	Signal	C	31.2	No
8	Florin Perkins Road & Kiefer Blvd.	Two-way stop			Two-way stop			No	Two-way stop			Two-way stop			No
	Westbound Left Turn		*C*	*16.4*		*C*	*21.3*			*C*	*20.7*		*E*	*35.1*	
	Westbound Right Turn		*C*	*10.9*		*B*	*12.2*			*B*	*11.2*		*B*	*13.6*	
	Southbound Left Turn		*A*	*9.3*		*B*	*10.1*			*B*	*10.4*		*B*	*13.4*	
9	Florin Perkins Road & Jackson Road	Signal	C	25.1	Signal	D	46.3	No	Signal	D	38.5	Signal	D	49.0	No
10	Florin Perkins Road & Fruitridge Road	Signal	C	26.7	Signal	D	40.4	No	Signal	D	50.3	Signal	D	41.7	No
11	Florin Perkins Road & Elder Creek Road	Signal	C	31.7	Signal	C	29.4	No	Signal	C	30.0	Signal	C	33.4	No
12	Watt Avenue & Folsom Blvd.	Signal	**F**	**169.1**	Signal	**F**	**182.3**	Yes	Signal	**F**	**140.0**	Signal	**F**	**199.9**	Yes
13	S. Watt Ave. & Reith Ct/Manlove Road	Signal	B	15.7	Signal	B	13.5	No	Signal	A	9.8	Signal	B	10.9	No
14	S. Watt Avenue & Kiefer Blvd.	Signal	E	62.2	Signal	**F**	**91.8**	Yes	Signal	D	41.7	Signal	E	73.3	No
15	S. Watt Avenue & Canberra Dr.	Signal	B	13.4	Signal	B	13.6	No	Signal	A	9.1	Signal	A	9.2	No
16	S. Watt Avenue & Jackson Road	Signal	**F**	**135.9**	Signal	**F**	**237.3**	Yes	Signal	**F**	**98.2**	Signal	**F**	**185.0**	Yes
17	S. Watt Avenue & Fruitridge Road	Signal	D	44.4	Signal	**F**	**93.1**	Yes	Signal	**E**	**79.3**	Signal	**F**	**114.3**	Yes
18	S. Watt Avenue & Elder Creek Road	Signal	**F**	**222.9**	Signal	**F**	**160.8**	No	Signal	**F**	**177.7**	Signal	**F**	**116.5**	No
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	**F**	**199.7**	Signal	**F**	**>300**	Yes	Signal	**F**	**137.1**	Signal	**F**	**238.2**	Yes
21	Elk Grove Florin Road & Gerber Road	Signal	E	56.7	Signal	E	59.3	No	Signal	E	74.9	Signal	E	78.2	No
23	Hedge Avenue & Jackson Road	Signal	C	34.7	Signal	**F**	**123.1**	Yes	Signal	B	16.3	Signal	D	41.8	No
24	Hedge Avenue & Fruitridge Road	All-way stop	E	44.2	All-way stop	C	34.3	No	All-way stop	D	30.7	All-way stop	D	36.5	No
25	Hedge Avenue & Elder Creek Road	Signal	**F**	**103.7**	Signal	**F**	**138.8**	Yes	Signal	**F**	**103.2**	Signal	**F**	**135.0**	Yes
26	Hedge Avenue & Tokay Lane	Two-way stop			Two-way stop			No	Two-way stop			Two-way stop			No
	Northbound Left Turn		*A*	*0.0*		*A*	*0.0*			*A*	*0.0*		*A*	*0.0*	
	Southbound Left Turn		*B*	*10.9*		*B*	*10.9*			*A*	*9.3*		*A*	*9.3*	
	Eastbound		***F***	***99.5***		***F***	***102.1***			*E*	*47.3*		*E*	*49.9*	

	Intersection	A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Corridor Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Corridor Projects			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
	Westbound		***F***	***52.9***		***F***	***52.9***			*E*	*38.3*		*E*	*38.0*	
27	Hedge Avenue & Florin Road	All-way stop	B	15.8	Signal	A	9.9	No	All-way stop	B	12.6	Signal	A	6.1	No
28	Mayhew Road & Kiefer Boulevard	Signal	C	27.7	Signal	**F**	**91.2**	Yes	Signal	D	44.9	Signal	E	74.2	No
29	Mayhew Road & Jackson Road	Two-way stop			Signal	**F**	**117.9**	Yes	Two-way stop			Signal	**F**	**107.2**	Yes
	Northbound Through - Left Turn		***F***	***114.1***						***F***	***>300***				
	Northbound Right Turn		*C*	*16.1*						*C*	*18.5*				
	Southbound		***F***	***99.2***						***F***	***>300***				
	Eastbound Left Turn		*B*	*13.5*						*B*	*11.0*				
	Westbound Left Turn		*B*	*11.2*						*C*	*17.6*				
30	Mayhew Road & Fruitridge Road	Two-way stop			Signal	B	18.5	No	Two-way stop			Signal	B	18.8	No
	Northbound Left Turn		*A*	*0.0*						*A*	*7.5*				
	Eastbound		*A*	*9.8*						*A*	*9.3*				
31	Mayhew Road & Elder Creek Road	Signal	A	7.0	Signal	**F**	**>300**	Yes	Signal	A	6.0	Signal	**F**	**<300**	Yes
32	Woodring Drive & Zinfandel Drive	Two-way stop			Two-way stop			Yes	Two-way stop			Two-way stop			Yes
	Eastbound		*C*	*20.1*		***F***	***85.0***			*A*	*9.0*		***F***	***223.4***	
	Northbound Left Turn		*A*	*8.0*		*B*	*10.6*			*A*	*0.0*		*B*	*12.4*	
33	Bradshaw Road & Folsom Blvd.	Signal	C	31.9	Signal	C	25.5	No	Signal	C	25.3	Signal	C	22.4	No
34	Bradshaw Road & US 50 WB Ramps	Signal	A	7.8	Signal	B	11.1	No	Signal	A	8.9	Signal	B	12.2	No
35	Bradshaw Road & US 50 EB Ramps	Signal	C	24.5	Signal	D	54.7	No	Signal	B	15.1	Signal	D	39.5	No
36	Bradshaw Road & Old Placerville Road	Signal	**F**	**81.9**	Signal	**F**	**101.6**	Yes	Signal	**E**	**68.1**	Signal	**F**	**82.4**	Yes
37	Bradshaw Road & Kiefer Boulevard	Signal	C	27.6	Signal	**F**	**144.2**	Yes	Signal	D	54.1	Signal	**F**	**137.6**	Yes
38	Bradshaw Road & Jackson Road	Signal	**F**	**186.0**	Signal	**F**	**172.2**	No	Signal	**F**	**118.2**	Signal	**F**	**161.0**	Yes
39	Bradshaw Road & Elder Creek Road	Signal	**F**	**122.6**	Signal	**F**	**173.1**	Yes	Signal	**F**	**98.8**	Signal	**F**	**201.7**	Yes
40	Bradshaw Road & Florin Road	Signal	**F**	**129.5**	Signal	**F**	**125.3**	No	Signal	E	59.7	Signal	**F**	**89.9**	Yes
41	Bradshaw Road & Gerber Road	Signal	**F**	**83.1**	Signal	**F**	**80.6**	No	Signal	D	43.0	Signal	D	49.7	No
42	Happy Lane & Old Placerville Road	Two-way stop			Two-way stop			Yes	Two-way stop			Two-way stop			Yes
	Northbound Left Turn		***F***	***>300***		***F***	***>300***			*F*	*294.1*		***F***	***>300***	
	Northbound Right Turn		***E***	***40.9***		***F***	***236.0***			*C*	*16.9*		*C*	*19.2*	
	Westbound Left Turn		*C*	*16.0*		*C*	*23.4*			*C*	*15.3*		***F***	***53.3***	
43	Happy Lane & Kiefer Boulevard	Free Turn			Signal	**F**	**139.2**	Yes	Free Turn			Signal	E	67.8	No
44	Excelsior Road & Kiefer Boulevard	Two-way stop	A	0.0	Signal	A	9.9	No	Two-way stop	A	0.0	Signal	B	14.0	No

	Intersection	A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Corridor Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Corridor Projects			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
45	Excelsior Road & Jackson Road	Signal	E	59.9	Signal	**F**	**330.8**	Yes	Signal	D	39.0	Signal	**F**	**269.1**	Yes
46	Excelsior Road & Elder Creek Road	Two-way stop			Signal	**F**	**81.2**	No	Two-way stop			Signal	E	58.8	No
	Northbound Left Turn		*A*	*7.9*						*A*	*7.9*				
	Eastbound		***F***	***>300***						*D*	*30.0*				
47	Excelsior Road & Florin Road	All-way stop	**F**	**62.4**	Signal	**F**	**111.2**	Yes	All-way stop	**F**	**67.3**	Signal	E	74.2	No
48	Excelsior Road & Gerber Road/Birch Ranch Drive	All-way stop	B	13.6	Signal	B	11.7	No	All-way stop	B	14.3	Signal	B	11.7	No
49	Mather Field Road & US 50 WB Ramps	Signal	B	14.4	Signal	B	18.1	No	Signal	A	8.6	Signal	B	10.1	No
50	Mather Field Road & US 50 EB Ramps	Signal	B	19.2	Signal	B	17.9	No	Signal	C	21.1	Signal	B	14.6	No
51	Mather Field Road & Rockingham Drive	Signal	**F**	**156.5**	Signal	**F**	**>300**	Yes	Signal	**F**	**119.4**	Signal	**F**	**170.3**	Yes
52	Mather Boulevard & Douglas Road	All-way stop	E	55.6	Signal	E	55.8	No	All-way stop	C	27.2	Signal	D	36.5	No
53	Zinfandel Drive & US 50 WB Ramps	Signal	C	20.9	Signal	B	10.6	No	Signal	**E**	**65.0**	Signal	D	49.1	No
54	Zinfandel Drive & US 50 EB Ramps/Gold Center Drive	Signal	**F**	**120.8**	Signal	**F**	**116.8**	No	Signal	**F**	**95.0**	Signal	**E**	**79.3**	No
55	Zinfandel Drive & White Rock Road	Signal	**E**	**76.3**	Signal	**E**	**68.2**	No	Signal	**F**	**117.3**	Signal	**F**	**111.6**	No
56	Zinfandel Drive & Data Drive	Signal	B	18.9	Signal	B	19.1	No	Signal	C	25.6	Signal	C	26.7	No
57	Zinfandel Drive & International Dr	Signal	**E**	**77.2**	Signal	**E**	**77.5**	No	Signal	**F**	**97.3**	Signal	**F**	**81.8**	No
58	Zinfandel Drive & Douglas Road	Signal	**F**	**156.8**	Signal	**F**	**216.8**	Yes	Signal	E	73.1	Signal	**F**	**220.1**	Yes
59	Eagles Nest Road/Zinfandel Drive & Kiefer Boulevard	Two-way stop			Signal	D	42.5	No	Two-way stop			Signal	D	39.2	No
	Southbound Left Turn		*A*	*8.1*						*A*	*9.2*				
	Westbound		***F***	***85.8***						***F***	***208.0***				
60	Eagles Nest Road & Jackson Road	Signal	C	23.0	Signal	E	69.6	No	Signal	C	23.3	Signal	E	63.7	No
61	Eagles Nest Road & Florin Road	Two-way stop			Two-way stop			Yes	Two-way stop			Two-way stop			Yes
	Northbound		***F***	***>300***		***F***	***>300***			***F***	***>300***		***F***	***>300***	
	Southbound		***F***	***>300***		***F***	***>300***			***F***	***>300***		***F***	***>300***	
	Eastbound Left Turn		*B*	*10.2*		*B*	*11.3*			*A*	*8.5*		*A*	*9.3*	
	Westbound Left Turn		*A*	*0.0*		*A*	*0.0*			*A*	*9.4*		*A*	*8.7*	
62	Sunrise Boulevard & US 50 WB Ramps	Signal	**E**	**68.1**	Signal	**E**	**71.2**	No	Signal	C	22.7	Signal	C	21.5	No
63	Sunrise Boulevard & US 50 EB Ramps	Signal	B	10.2	Signal	B	10.1	No	Signal	B	12.7	Signal	B	13.2	No
64	Sunrise Boulevard & Folsom Boulevard	Signal	D	43.5	Signal	D	47.3	No	Signal	D	40.5	Signal	D	43.1	No
65	Sunrise Boulevard & White Rock Road	Signal	**E**	**69.3**	Signal	**E**	**69.5**	No	Signal	**F**	**127.3**	Signal	**F**	**126.9**	No
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	**F**	**109.1**	Signal	**F**	**118.6**	Yes	Signal	**F**	**81.3**	Signal	**E**	**76.7**	No
67	Sunrise Boulevard & Douglas Road	Signal	**F**	**140.5**	Signal	**F**	**190.0**	Yes	Signal	**E**	**73.5**	Signal	**F**	**105.4**	Yes

Intersection		A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Corridor Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Corridor Projects			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
68	Sunrise Boulevard & Chrysanthy Boulevard	Signal	C	21.4	Signal	B	18.8	No	Signal	A	9.4	Signal	B	10.2	No
69	Sunrise Boulevard & Kiefer Boulevard	Signal	**F**	**151.0**	Signal	**F**	**>300**	Yes	Signal	**F**	**138.0**	Signal	**F**	**261.4**	Yes
70	Sunrise Boulevard & Jackson Road	Signal	D	39.6	Signal	**F**	**90.0**	Yes	Signal	D	45.4	Signal	**E**	**79.3**	Yes
71	Sunrise Boulevard & Florin Road	Signal	D	50.3	Signal	C	22.9	No	Signal	E	57.4	Signal	D	45.9	No
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	**F**	**91.2**	Signal	**F**	**120.4**	Yes	Signal	C	33.1	Signal	**E**	**71.0**	Yes
73	Hazel Avenue & Tributary Point Drive/US 50 WB Off-ramp	Signal	**F**	**148.3**	Signal	**F**	**149.4**	No	Signal	**F**	**103.3**	Signal	**F**	**105.3**	No
74	Hazel Avenue & US 50 EB Ramps	Signal	B	16.4	Signal	B	17.6	No	Signal	**F**	**83.6**	Signal	**F**	**81.4**	No
76	Prairie City Road & White Rock Road	Signal	C	32.8	Signal	**D**	**37.6**	No	Signal	**D**	**35.2**	Signal	**D**	**36.1**	No
77	Grant Line Road & White Rock Road	Signal	C	26.1	Signal	B	16.2	No	Signal	C	29.8	Signal	C	33.4	No
78	Grant Line Road & Douglas Road	Signal	**D**	**44.8**	Signal	**D**	**39.0**	No	Signal	**F**	**107.9**	Signal	**F**	**92.2**	No
79	Grant Line Road & Kiefer Boulevard	Signal	B	12.5	Signal	B	14.7	No	Signal	B	10.6	Signal	B	16.8	No
80	Grant Line Road & Jackson Road	Signal	**F**	**88.9**	Signal	**F**	**119.0**	Yes	Signal	**E**	**67.4**	Signal	**F**	**101.1**	Yes
81	Watt Avenue & US-50 EB Ramps	Signal	C	23.3	Signal	C	33.1	No	Signal	B	15.6	Signal	B	18.8	No
82	Watt Avenue & US-50 WB Ramps	Signal	**F**	**82.8**	Signal	**E**	**67.2**	No	Signal	**E**	**57.1**	Signal	**E**	**61.2**	No
83	Mayhew Rd & Folsom Blvd.	Signal	B	12.8	Signal	B	19.8	No	Signal	B	15.8	Signal	C	20.4	No
84	65th Street Expy & Fruitridge Road	Signal	D	44.3	Signal	D	46.0	No	Signal	D	41.1	Signal	D	46.2	No
85	Power Inn Road & Elder Creek Road	Signal	E	67.3	Signal	E	79.0	No	Signal	D	45.0	Signal	E	61.6	No
86	Power Inn Road & Florin Rd	Signal	**F**	**97.4**	Signal	**F**	**119.3**	Yes	Signal	E	65.8	Signal	E	73.9	No
87	Florin Perkins Road & Florin Rd	Signal	D	44.2	Signal	E	60.6	No	Signal	**F**	**107.4**	Signal	**F**	**111.6**	No
88	Bradshaw Rd & Calvine Rd	Signal	C	26.4	Signal	D	37.0	No	Signal	C	20.9	Signal	C	25.0	No
89	Vineyard Rd & Calvine Rd	Signal	B	18.5	Signal	B	18.6	No	Signal	B	17.6	Signal	B	19.5	No
90	Excelsior Road & Calvine Rd	All-way stop	B	12.8	All-way stop	C	21.0	No	All-way stop	B	12.9	All-way stop	B	17.9	No
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	Signal	C	34.4	Signal	**D**	**43.2**	Yes	Signal	**D**	**44.8**	Signal	**D**	**52.0**	Yes
92	Grant Line Rd & Calvine Rd	Signal	C	32.4	Signal	**D**	**36.5**	Yes	Signal	C	33.3	Signal	C	30.9	No
93	Grant Line Rd & Dwy/Wilton Rd	Signal	**E**	**78.8**	Signal	**F**	**83.4**	Yes	Signal	**E**	**69.8**	Signal	**F**	**95.2**	Yes
94	Grant Line Rd & Bond Rd/Wrangler Dr	Signal	B	14.8	Signal	B	17.6	No	Signal	B	15.5	Signal	B	17.3	No
95	Florin Perkins Road & 14th Avenue	Signal	D	44.1	Signal	**E**	**67.8**	Yes	Signal	C	30.9	Signal	D	46.9	No
96	Jackson Road & 14th Avenue	Signal	**F**	**91.0**	Signal	**F**	**119.3**	Yes	Signal	B	15.3	Signal	**E**	**57.0**	Yes
98	Aspen 1 Access Road & Jackson Road	Signal	A	0.0	Signal	A	0.0	No	Signal	A	6.6	Signal	A	0.0	No
99	Rancho Cordova Pkwy & US-50 WB Ramps	Signal	**F**	**147.0**	Signal	**F**	**147.6**	No	Signal	**F**	**117.9**	Signal	**F**	**104.1**	No
100	Rancho Cordova Pkwy & US-50 EB Ramps	Signal	C	24.0	Signal	B	16.9	No	Signal	C	28.3	Signal	C	30.1	No

Intersection		A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Corridor Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Corridor Projects			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
101	Rancho Cordova Pkwy & Easton Valley Pkwy	Signal	C	24.2	Signal	C	24.7	No	Signal	B	11.2	Signal	B	14.5	No
102	Rancho Cordova Pkwy & White Rock Road	Signal	**F**	**221.3**	Signal	**F**	**200.8**	No	Signal	**F**	**135.5**	Signal	**F**	**128.0**	No
103	Rancho Cordova Pkwy & Douglas Road	Signal	**E**	**67.2**	Signal	**E**	**57.2**	No	Signal	**E**	**58.0**	Signal	**E**	**76.1**	Yes
104	Rancho Cordova Pkwy & Chrysanthy Boulevard/ Chrysanthy Blvd	Signal	**F**	**105.7**	Signal	**F**	**93.5**	No	Signal	D	54.9	Signal	D	54.9	No
105	Rancho Cordova Pkwy & Kiefer Blvd	Signal	B	17.9	Signal	C	20.9	No	Signal	B	16.1	Signal	B	19.4	No
106	Rancho Cordova Pkwy & Grant Line Road	Signal	**E**	**78.8**	Signal	**D**	**38.4**	No	Signal	C	28.8	Signal	B	14.8	No
107	Americanos Blvd & White Rock Road	Signal	A	9.5	Signal	A	8.9	No	Signal	A	9.5	Signal	A	8.4	No
108	Americanos Blvd & Douglas Road	Signal	C	34.9	Signal	D	47.0	No	Signal	C	22.4	Signal	C	23.5	No
109	Americanos Blvd & Chrysanthy Blvd	Signal	C	24.7	Signal	C	22.2	No	Signal	C	22.2	Signal	C	25.4	No
110	Americanos Blvd & Kiefer Blvd	Signal	A	7.6	Signal	A	8.7	No	Signal	A	7.3	Signal	A	9.8	No
111	Grant Line Road & Chrysanthy Blvd	Signal	**E**	**72.0**	Signal	**E**	**71.1**	No	Signal	**E**	**57.5**	Signal	D	54.9	No
112	Hazel Avenue & Easton Valley Pkwy	Signal	B	10.3	Signal	B	10.2	No	Signal	A	6.0	Signal	A	6.1	No
200	Excelsior Road & Collector WJ-1/Collector JT-1	West Jackson/Jackson Township Project Int.			Signal	C	22.4	No	West Jackson/Jackson Township Project Int.			Signal	B	19.6	No
201	Excelsior Road & Collector WJ-2/Collector JT-2	West Jackson/Jackson Township Project Int.			Signal	B	15.2	No	West Jackson/Jackson Township Project Int.			Signal	B	19.8	No
202	W Collector MS-1 & Kiefer Boulevard	Mather South Project Int.			Signal	B	17.3	No	Mather South Project Int.			Signal	B	12.6	No
203	Northbridge Dr & Kiefer Boulevard	NewBridge Project Int.			Signal	A	7.3	No	NewBridge Project Int.			Signal	A	6.8	No
204	E Collector MS-5 & Kiefer Boulevard	Mather South Project Int.			Signal	B	19.1	No	Mather South Project Int.			Signal	C	29.9	No
300	Collector WJ-3 & Jackson Road	West Jackson Project Int.			Signal	B	13.7	No	West Jackson Project Int.			Signal	A	9.2	No
301	Collector WJ-4 & Jackson Road	West Jackson Project Int.			Signal	C	23.3	No	West Jackson Project Int.			Signal	C	22.5	No
303	Rock Creek Pkwy & Jackson Road	West Jackson Project Int.			Signal	**F**	**128.3**	Yes	West Jackson Project Int.			Signal	**F**	**96.4**	Yes
304	Collector WJ-5 & Jackson Road	West Jackson Project Int.			Signal	B	13.6	No	West Jackson Project Int.			Signal	B	14.7	No
305	Collector WJ-6 & Jackson Road	West Jackson Project Int.			Signal	B	17.7	No	West Jackson Project Int.			Signal	B	15.7	No
306	Excelsior Road & Collector WJ-6	West Jackson Project Int.			Signal	D	38.3	No	West Jackson Project Int.			Signal	B	14.5	No
307	S. Watt Avenue & Rock Creek Pkwy	West Jackson Project Int.			Signal	B	18.2	No	West Jackson Project Int.			Signal	B	18.4	No
308	Hedge Avenue & Rock Creek Pkwy Westbound	West Jackson Project Int.			Round	**F**	**60.5**	Yes	West Jackson Project Int.			Round	B	11.2	No
309	Hedge Avenue & Rock Creek Pkwy Eastbound	West Jackson Project Int.			Round	C	24.0	No	West Jackson Project Int.			Round	B	11.2	No
310	Mayhew Road & Rock Creek Pkwy Westbound	West Jackson Project Int.			Round	**F**	**181.2**	Yes	West Jackson Project Int.			Round	**F**	**106.4**	Yes
311	Mayhew Road & Rock Creek Pkwy Eastbound	West Jackson Project Int.			Round	**F**	**126.7**	Yes	West Jackson Project Int.			Round	**F**	**126.5**	Yes
312	Bradshaw Road & Rock Creek Pkwy	West Jackson Project Int.			Signal	B	11.0	No	West Jackson Project Int.			Signal	D	47.7	No

Intersection		A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Corridor Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Corridor Projects			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
314	Vineyard Road & Rock Creek Pkwy	West Jackson Project Int.			Signal	B	10.7	No	West Jackson Project Int.			Signal	C	21.9	No
315	Douglas Road & Rock Creek Pkwy	West Jackson Project Int.			Signal	C	32.1	No	West Jackson Project Int.			Signal	E	61.9	No
316	Bradshaw Road & Collector WJ-8	West Jackson Project Int.			Signal	B	12.2	No	West Jackson Project Int.			Signal	A	6.6	No
317	Bradshaw Road & Collector WJ-9	West Jackson Project Int.			Signal	A	9.3	No	West Jackson Project Int.			Signal	A	5.8	No
318	Bradshaw Road & Mayhew Road	West Jackson Project Int.			Signal	**F**	**142.3**	Yes	West Jackson Project Int.			Signal	**F**	**118.1**	Yes
319	Bradshaw Road & Collector WJ-10	West Jackson Project Int.			Signal	**F**	**182.7**	Yes	West Jackson Project Int.			Signal	C	26.9	No
320	Bradshaw Road & Collector WJ-11	West Jackson Project Int.			Signal	A	7.6	No	West Jackson Project Int.			Signal	B	15.0	No
321	Collector WJ-12 & Fruitridge Road	West Jackson Project Int.			Signal	B	17.9	No	West Jackson Project Int.			Signal	B	15.6	No
322	Mayhew Road & Collector WJ-13	West Jackson Project Int.			Signal	C	22.3	No	West Jackson Project Int.			Signal	C	20.9	No
323	Collector WJ-14 & Kiefer Boulevard	West Jackson Project Int.			Signal	C	30.0	No	West Jackson Project Int.			Signal	C	24.7	No
325	Douglas Road & Kiefer Boulevard	West Jackson Project Int.			Signal	**F**	**237.5**	Yes	West Jackson Project Int.			Signal	**F**	**191.3**	Yes
327	Vineyard Road & Elder Creek Road	West Jackson Project Int.			Signal	C	34.6	No	West Jackson Project Int.			Signal	C	28.1	No
328	Vineyard Road & Florin Road	West Jackson Project Int.			Signal	C	29.1	No	West Jackson Project Int.			Signal	C	29.6	No
329	Routier Ext & Kiefer Boulevard	West Jackson Project Int.			Signal	**F**	**87.8**	Yes	West Jackson Project Int.			Signal	E	71.6	No
330	Happy Ln/Happy Lane & Routier Ext	West Jackson Project Int.			Signal	E	79.6	No	West Jackson Project Int.			Signal	E	79.3	No
331	Routier Ext/Routier Rd & Old Placerville Road	West Jackson Project Int.			Signal	**F**	**164.0**	Yes	West Jackson Project Int.			Signal	**F**	**117.3**	Yes
400	Collector JT-3 & Jackson Road	Jackson Township Project Int.			Signal	**F**	**81.2**	Yes	Jackson Township Project Int.			Signal	D	47.0	No
401	Tree View Lane & Jackson Road	Jackson Township Project Int.			Signal	D	37.7	No	Jackson Township Project Int.			Signal	B	12.5	No
402	Collector JT-4 & Jackson Road	Jackson Township Project Int.			Signal	C	23.5	No	Jackson Township Project Int.			Signal	B	10.2	No
403	Tree View Lane & Collector JT-5	Jackson Township Project Int.			Signal	B	12.7	No	Jackson Township Project Int.			Signal	B	13.1	No
404	Tree View Lane & Collector JT-6	Jackson Township Project Int.			Signal	A	7.9	No	Jackson Township Project Int.			Signal	A	7.0	No
405	Tree View Lane & Collector JT-1	Jackson Township Project Int.			Signal	B	14.4	No	Jackson Township Project Int.			Signal	B	14.4	No
406	Tree View Lane & Kiefer Boulevard	Jackson Township Project Int.			Signal	B	10.8	No	Jackson Township Project Int.			Signal	B	13.2	No
407	HS/MS Dwy & Kiefer Boulevard	Jackson Township Project Int.			Signal	A	5.3	No	Jackson Township Project Int.			Signal	A	7.7	No
500	Rockbridge Dr & Jackson Road	NewBridge Project Int.			Signal	C	34.2	No	NewBridge Project Int.			Signal	B	19.7	No
501	Eagles Nest Road & N Bridgewater Dr	NewBridge Project Int.			Signal	A	3.4	No	NewBridge Project Int.			Signal	A	3.1	No
502	Eagles Nest Road & S Bridgewater Dr	NewBridge Project Int.			Signal	B	15.7	No	NewBridge Project Int.			Signal	B	13.6	No
600	Zinfandel Drive & Collector MS-2	Mather South Project Int.			Round	B	10.9	No	Mather South Project Int.			Round	B	11.6	No
601	Zinfandel Drive & Collector MS-3	Mather South Project Int.			Round	A	8.3	No	Mather South Project Int.			Round	A	9.1	No
602	Zinfandel Drive & Collector MS-4	Mather South Project Int.			Round	A	9.1	No	Mather South Project Int.			Round	A	9.1	No
603	Collector MS-5 & Collector MS-2	Mather South Project Int.			Two-way stop			No	Mather South Project Int.			Two-way stop			No

	Intersection	A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Corridor Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Corridor Projects			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
	Northbound Left Turn					*A*	*7.8*						*A*	*7.5*	
	Eastbound Left Turn					*B*	*10.2*						*B*	*10.8*	
604	Collector MS-5 & Collector MS-3	Mather South Project Int.			Two-way stop			No	Mather South Project Int.			Two-way stop			No
	Northbound Left Turn					*A*	*7.8*						*A*	*7.5*	
	Eastbound					*A*	*9.9*						*A*	*9.7*	
605	Collector MS-5 & Collector MS-4	Mather South Project Int.			Two-way stop			No	Mather South Project Int.			Two-way stop			No
	Northbound Left Turn					*A*	*8.4*						*A*	*8.2*	
	Eastbound					*C*	*17.7*						*D*	*33.0*	
606	Collector MS-5 & W Collector MS-1/E Collector MS-1	Mather South Project Int.			Two-way stop			No	Mather South Project Int.			Two-way stop			No
	Northbound Left Turn					*A*	*7.6*						*A*	*7.7*	
	Eastbound Left Turn					*B*	*11.7*						*B*	*12.3*	
	Eastbound					*A*	*9.3*						*A*	*9.3*	

Note: Gray shading represents changes in traffic control that the project is responsible to provide.
Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.
Source: DKS Associate 2018

Table CU-10: Cumulative No Project and Cumulative Plus Jackson Corridor Projects Intersection Geometrics

Intersection		Traffic Control		Cumulative No Project Lane Geometrics				Cumulative Plus Jackson Corridor Projects Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus Jackson Corridor Projects	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
1	Howe Avenue & College Town Drive/US 50 Westbound Ramps	Signal	Signal									
2	Howe Avenue & US 50 Eastbound Ramps/US 50 Eastbound Entrance	Signal	Signal									
3	Power Inn Road/Howe Avenue & Folsom Blvd.	Signal	Signal									
4	Power Inn Road & 14th Avenue	Signal	Signal									
5	Power Inn Road & Fruitridge Road	Signal	Signal									
6	Jackson Road/Notre Dame Dr. & Folsom Blvd.	Signal	Signal									
7	Florin Perkins Road/Julliard Dr. & Folsom Boulevard	Signal	Signal									
8	Florin Perkins Road & Kiefer Blvd.	Two-way stop	Two-way stop									
9	Florin Perkins Road & Jackson Road	Signal	Signal									
10	Florin Perkins Road & Fruitridge Road	Signal	Signal									
11	Florin Perkins Road & Elder Creek Road	Signal	Signal									
12	S. Watt Ave./Watt Avenue & Folsom Blvd.	Signal	Signal									
13	S. Watt Ave. & Reith Ct/Manlove Road	Signal	Signal									
14	S. Watt Avenue & Kiefer Blvd.	Signal	Signal									
15	S. Watt Avenue & Canberra Dr.	Signal	Signal									
16	S. Watt Avenue & Jackson Road	Signal	Signal									West Jackson
17	S. Watt Avenue & Fruitridge Road	Signal	Signal									West Jackson
18	S. Watt Avenue & Elder Creek Road	Signal	Signal									
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	Signal									
21	Elk Grove Florin Road & Gerber Rd./Gerber Road	Signal	Signal									
23	Hedge Avenue & Jackson Road	Signal	Signal									West Jackson
24	Hedge Avenue & Fruitridge Road	All-way stop	Signal									West Jackson
25	Hedge Avenue & Elder Creek Road	All-way stop	Signal									West Jackson
26	Hedge Avenue & Tokay Lane	Two-way stop	Two-way stop									
27	Hedge Avenue & Florin Road	All-way stop	All-way stop									
28	Mayhew Road & Kiefer Boulevard	Signal	Signal									
29	Mayhew Road & Jackson Road	Two-way stop	Signal									West Jackson
30	Mayhew Road & Fruitridge Road	Two-way stop	Signal									West Jackson
31	Mayhew Road & Elder Creek Road	Two-way stop	Signal									West Jackson

	Intersection	Traffic Control		Cumulative No Project Lane Geometrics				Cumulative Plus Jackson Corridor Projects Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus Jackson Corridor Projects	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
32	Zinfandel Drive & Woodring Drive	Two-way stop	Two-way stop									Mather South
33	Bradshaw Road & Folsom Blvd.	Signal	Signal									
34	Bradshaw Road & US 50 Westbound Ramps	Signal	Signal									
35	Bradshaw Road & US 50 Eastbound Ramps	Signal	Signal									
36	Bradshaw Road & Old Placerville Road	Signal	Signal									
37	Bradshaw Road & Kiefer Boulevard	Signal	Signal									West Jackson
38	Jackson Road & Bradshaw Road	Signal	Signal									West Jackson
39	Bradshaw Road & Elder Creek Road	Signal	Signal									West Jackson
40	Bradshaw Road & Florin Road	Signal	Signal									
41	Bradshaw Road & Gerber Road	Signal	Signal									
42	Happy Lane & Old Placerville Road	Two-way stop	Signal									
43	Kiefer Boulevard & Happy Ln		Signal									West Jackson
44	Excelsior Road & Kiefer Boulevard	Two-way stop	Signal									West Jackson, Jackson Township
45	Excelsior Road & Jackson Road	Signal	Signal									West Jackson, Jackson Township
46	Excelsior Road & Elder Creek Road	Two-way stop	Signal									West Jackson
47	Excelsior Road & Florin Road	All-way stop	Signal									West Jackson
48	Excelsior Road & Gerber Road/Birch Ranch Drive	All-way stop	All-way stop									
49	Mather Field Road & US 50 Westbound Ramps	Signal	Signal									
50	Mather Field Road & US 50 Eastbound Ramps	Signal	Signal									
51	Mather Field Road & Rockingham Drive	Signal	Signal									
52	Mather Boulevard & Douglas Road	All-way stop	All-way stop									
53	Zinfandel Drive & US 50 Westbound	Signal	Signal									
54	Zinfandel Drive & US 50 Eastbound Ramps/Gold Center Drive	Signal	Signal									
55	Zinfandel Drive & White Rock Road	Signal	Signal									
56	Zinfandel Drive & Data Drive	Signal	Signal									
57	Zinfandel Dr & International Dr	Signal	Signal									
58	Zinfandel Drive & Douglas Road	Signal	Signal									
59	Eagles Nest Road/Zinfandel Drive & Kiefer Boulevard		Signal									NewBridge, Mather South
60	Eagles Nest Road & Jackson Road	Two-way stop	Signal									NewBridge

Intersection		Traffic Control		Cumulative No Project Lane Geometrics				Cumulative Plus Jackson Corridor Projects Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus Jackson Corridor Projects	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Two-way stop	Signal									
62	Sunrise Boulevard & US 50 Westbound Ramps	Signal	Signal									
63	Sunrise Boulevard & US 50 Eastbound Ramps	Signal	Signal									
64	Sunrise Boulevard & Folsom Boulevard	Signal	Signal									
65	Sunrise Boulevard & White Rock Road	Signal	Signal									
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	Signal									
67	Sunrise Boulevard & Douglas Road	Signal	Signal									
68	Sunrise Boulevard & Chrysanthy Boulevard	Signal	Signal									
69	Sunrise Boulevard & Kiefer Boulevard	Signal	Signal									NewBridge; Mather South
70	Sunrise Boulevard & Jackson Road	Signal	Signal									
71	Sunrise Boulevard & Florin Road	Signal	Signal									
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	Signal									
73	Hazel Avenue & Tributary Point Drive/US 50 Westbound Off-ramp	Signal	Signal									
74	Hazel Avenue/Hazel Avenue & US 50 Eastbound Ramps	Signal	Signal									
76	White Rock Road & Prairie City Road	Signal	Signal									
77	Grant Line Road & White Rock Road	Signal	Signal									
78	Grant Line Road & Douglas Road	All-way stop	All-way stop									
79	Grant Line Road & Kiefer Boulevard	All-way stop	All-way stop									
80	Grant Line Road & Jackson Road	Signal	Signal									
81	Watt Avenue & US-50 EB Ramps	Signal	Signal									
82	Watt Avenue & US-50 WB Ramps	Signal	Signal									
83	Mayhew Rd & Folsom Blvd.	Signal	Signal									
84	65th Street Expy & Fruitridge Road	Signal	Signal									
85	Power Inn Road & Elder Creek Road	Signal	Signal									
86	Power Inn Road & Florin Rd	Signal	Signal									
87	Florin Perkins Road & Florin Rd	Signal	Signal									
88	Bradshaw Rd & Calvine Rd	Signal	Signal									
89	Vineyard Rd & Calvine Rd	Signal	Signal									

Intersection		Traffic Control		Cumulative No Project Lane Geometrics				Cumulative Plus Jackson Corridor Projects Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus Jackson Corridor Projects	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
90	Excelsior Road & Calvine Rd	All-way stop	Signal									
91	Grant Line Road & Eagles Nest Rd/Sloughhouse Rd	Signal	Signal									
92	Grant Line Road & Calvine Rd	Signal	Signal									
93	Grant Line Road & Driveway/Wilton Rd	Signal	Signal									
94	Bond Rd/Wrangler Dr & Grant Line Road	Signal	Signal									
95	Florin Perkins Road & 14th Avenue		Signal									
96	14th Avenue & Jackson Road		Signal									
97	Rock Creek Pkwy & Jackson Road		Signal									
98	Aspen 1 Access Road & Jackson Road		Signal									
99	Rancho Cordova Pkwy & US-50 WB Ramps		Signal									
100	Rancho Cordova Pkwy & US-50 EB Ramps		Signal									
101	Rancho Cordova Pkwy & Easton Valley Pkwy		Signal									
102	Rancho Cordova Pkwy & White Rock Road		Signal									
103	Rancho Cordova Pkwy & Douglas Road		Signal									
104	Rancho Cordova Pkwy & Chrysanthy Blvd		Signal									
105	Rancho Cordova Pkwy & Kiefer Blvd		Signal									
106	Grant Line Road & Rancho Cordova Pkwy		Signal									
107	Americanos Blvd & White Rock Road		Signal									
108	Americanos Blvd & Douglas Road		Signal									
109	Americanos Blvd & Chrysanthy Blvd		Signal									
110	Kiefer Blvd & Americanos Blvd		Signal									
111	Grant Line Road & Chrysanthy Blvd		Signal									
112	Easton Valley Pkwy & Hazel Avenue		Signal									
200	Excelsior Road & Collector WJ-1/Collector JT-1		Signal									West Jackson; Jackson Township
201	Excelsior Road & Collector WJ-2/Collector JT-2		Signal									West Jackson; Jackson Township
202	Kiefer Boulevard & W Collector MS-1		Signal									Mather South
203	Northbridge Dr & Kiefer Boulevard		Signal									NewBridge
204	Kiefer Boulevard & E Collector MS-5		Signal									Mather South
300	Collector WJ-3 & Jackson Road		Signal									West Jackson
301	Collector WJ-4 & Jackson Road		Signal									West Jackson

Intersection		Traffic Control		Cumulative No Project Lane Geometrics				Cumulative Plus Jackson Corridor Projects Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus Jackson Corridor Projects	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
303	Vineyard Road & Jackson Road		Signal									West Jackson
304	Collector WJ-5 & Jackson Road		Signal									West Jackson
305	Collector WJ-6 & Jackson Road		Signal									West Jackson
306	Excelsior Road & Collector WJ-6		Signal									West Jackson
307	S. Watt Avenue & Rock Creek Pkwy		Signal									West Jackson
308	Hedge Avenue & Rock Creek Pkwy Westbound		Roundabout									West Jackson
309	Hedge Avenue & Rock Creek Pkwy Eastbound		Roundabout									West Jackson
310	Mayhew Road & Rock Creek Pkwy Westbound		Roundabout									West Jackson
311	Mayhew Road & Rock Creek Pkwy Eastbound		Roundabout									West Jackson
312	Bradshaw Road & Rock Creek Pkwy		Signal									West Jackson
314	Vineyard Road & Rock Creek Pkwy		Signal									West Jackson
315	Douglas Road & Rock Creek Pkwy		Signal									West Jackson
316	Bradshaw Road & Collector WJ-8		Signal									West Jackson
317	Bradshaw Road & Collector WJ-9		Signal									West Jackson
318	Bradshaw Road & Mayhew Road		Signal									West Jackson
319	Bradshaw Road & Collector WJ-10		Signal									West Jackson
320	Bradshaw Road & Collector WJ-11		Signal									West Jackson
321	Collector WJ-12 & Fruitridge Road		Signal									West Jackson
322	Mayhew Road & Collector WJ-13		Signal									West Jackson
323	Collector WJ-14 & Kiefer Boulevard		Signal									West Jackson
325	Douglas Road Extension & Kiefer Boulevard		Signal									West Jackson
327	Vineyard Road & Elder Creek Road		Signal									West Jackson
328	Vineyard Road & Florin Road	Signal	Signal									West Jackson
329	Routier Ext & Kiefer Boulevard		Signal									West Jackson
330	Happy Lane & Routier Ext		Signal									West Jackson
331	Routier Ext/Routier Rd & Old Placerville Road		Signal									West Jackson
400	Jackson Road & Collector JT-3		Signal									Jackson Township
401	Jackson Road & Tree View Lane		Signal									Jackson Township
402	Jackson Road & Collector JT-4		Signal									Jackson Township
403	Tree View Lane & Collector JT-5		Signal									Jackson Township
404	Tree View Lane & Collector JT-6		Signal									Jackson Township
405	Tree View Lane & Collector JT-1		Signal									Jackson Township

Intersection		Traffic Control		Cumulative No Project Lane Geometrics				Cumulative Plus Jackson Corridor Projects Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus Jackson Corridor Projects	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
406	Tree View Lane & Kiefer Boulevard		Signal									Jackson Township
407	HS/MS Dwy & Kiefer Boulevard		Signal									Jackson Township
500	Jackson Road & Rockbridge Dr		Signal									NewBridge
501	Eagles Nest Road & N Bridgewater Dr		Signal									NewBridge
502	Eagles Nest Road & S Bridgewater Dr		Signal									NewBridge
600	Zinfandel Drive & Collector MS-2		Roundabout									Mather South
601	Zinfandel Drive & Collector MS-3		Roundabout									Mather South
602	Zinfandel Drive & Collector MS-4		Roundabout									Mather South
603	Collector MS-5 & Collector MS-2		Two-way stop									Mather South
604	Collector MS-5 & Collector MS-3		Two-way stop									Mather South
605	Collector MS-5 & Collector MS-4		Two-way stop									Mather South
606	E Collector MS-1/Collector MS-5 & W Collector MS-1		Two-way stop									Mather South

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.
Source: DKS Associate 2018

MITIGATION MEASURES

CU-TR-2. Cumulative Intersection Operations.

> The project applicant shall implement Mitigation Measures TR-1 and TR-2. The project applicant shall implement the set of improvements assigned to the project by the Tool (Mitigation Measure TR-1) as identified in **Table CU-11a** and **Table CU-12a**. **Table CU-11a** and **Table CU-12a** summarize recommended mitigation and the results of the operations analysis for the traffic study area intersections with mitigation, which does not exceed the County's standard number of approach lanes, under the Cumulative Plus Jackson Corridor Projects scenario. **Table CU-11b** and **Table CU-12b** summarize recommended mitigation and the results of the operations analysis for the traffic study area intersections with ultimate mitigation, which may exceed the County's standard number of approach lanes, under the Cumulative Plus Jackson Corridor Projects scenario.
>
> Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type have been made to mitigate impacts, which would be the responsibility of the Jackson Corridor Projects to fund. **Table CU-12a** and **Table CU-12b** also identify those intersections that would continue operate at unacceptable levels after mitigation, along with the constraint that precluded full mitigation. In locations where the LOS impact could not be mitigated by implementing the County's standard number of approach lanes, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These generally include providing additional turn lanes, carrying an additional through lane past the intersection, or designating the intersection as a High Capacity Intersection. These alternative mitigation measures would either fully mitigate the impact or substantially reduce the level of impact. Detailed intersection operations calculations and the full list of study area intersection operating conditions are included in Appendix TR-1. Additionally, detailed descriptions of the three "High Capacity Intersections" identified in **Table CU-12b** are provided in Appendix TR-1.

Implementation of mitigation TR-1, TR-2, and CU-TR-2 would result in fair share payments toward improvements that would reduce the cumulative intersection impacts of the Mather South Project. Several intersections would operate acceptably with implementation of mitigation. Mitigation would generally involve improvements within the alignment or widening of the roadway. The programmatic impacts of constructing these improvements have been evaluated within the scope of the technical sections of this Draft EIR. However, as shown in **Table CU-12a** and **Table CU-12b**, because many intersections have reached the maximum number of lanes allowed under the General Plan, alternative mitigation was recommended. But, even with implementation of this alternative mitigation, some intersections would continue to operate unacceptably.

Table CU-11a: Cumulative Plus Jackson Corridor Projects Impacted Intersections and County Standard Intersection Geometry

Intersection		A.M. Peak Hour							P.M. Peak Hour						
		Cumulative Plus Jackson Corridor Projects			County Standard Geometry Cumulative Plus Jackson Corridor Projects			Alternative Mitigation	Cumulative Plus Jackson Corridor Projects			County Standard Geometry Cumulative Plus Jackson Corridor Projects			Alternative Mitigation
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
3	Power Inn Road/Howe Avenue & Folsom Blvd	Signal	F	108.2	-	-	-	Yes	Signal	F	88.4	-	-	-	Yes
4	Power Inn Road & 14th Avenue	Signal	F	166.0	Signal	F	126.4	Yes	Signal	F	123.7	Signal	F	109.2	Yes
12	Watt Avenue & Folsom Blvd.	Signal	F	182.3	Signal	F	185.2	Yes	Signal	F	199.9	Signal	E	57.6	No
14	S. Watt Avenue & Kiefer Blvd.	Signal	F	91.8	Signal	F	83.2	Yes	Signal	E	73.3	Signal	E	66.2	No
16	S. Watt Avenue & Jackson Road	Signal	F	237.3	Signal	F	153.4	Yes	Signal	F	185.0	Signal	F	121.0	Yes
17	S. Watt Avenue & Fruitridge Road	Signal	F	93.1	Signal	D	44.0	No	Signal	F	114.3	Signal	D	49.6	No
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	F	>300	Signal	F	157.3	No	Signal	F	238.2	Signal	F	164.5	Yes
23	Hedge Avenue & Jackson Road	Signal	F	123.1	Signal	D	53.3	No	Signal	D	41.8	Signal	C	24.1	No
25	Hedge Avenue & Elder Creek Road	Signal	F	138.8	-	-	-	Yes	Signal	F	135.0	-	-	-	Yes
28	Mayhew Road & Kiefer Boulevard	Signal	F	91.2	Signal	E	68.2	No	Signal	E	74.2	Signal	E	62.4	No
29	Mayhew Road & Jackson Road	Signal	F	117.9	Signal	E	64.5	No	Signal	F	107.2	Signal	E	61.7	No

Intersection		A.M. Peak Hour							P.M. Peak Hour						
		Cumulative Plus Jackson Corridor Projects			County Standard Geometry Cumulative Plus Jackson Corridor Projects			Alternative Mitigation	Cumulative Plus Jackson Corridor Projects			County Standard Geometry Cumulative Plus Jackson Corridor Projects			Alternative Mitigation
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
31	Mayhew Road & Elder Creek Road	Signal	**F**	**>300**	Signal	E	68.5	No	Signal	**F**	**<300**	Signal	D	43.3	No
32	Woodring Drive & Zinfandel Drive	Two-way stop			Round	A	8.7	No	Two-way stop			Round	B	10.4	No
	Eastbound		***F***	***85.0***						***F***	***223.4***				
	Northbound Left Turn		*B*	*10.6*						*B*	*12.4*				
36	Bradshaw Road & Old Placerville Road	Signal	**F**	**101.6**	Signal	**F**	**98.6**	Yes	Signal	**F**	**82.4**	Signal	E	76.4	No
37	Bradshaw Road & Kiefer Boulevard	Signal	**F**	**144.2**	Signal	**F**	**117.3**	Yes	Signal	**F**	**137.6**	Signal	**F**	**113.1**	Yes
38	Bradshaw Road & Jackson Road	Signal	**F**	**172.2**	**-**	**-**	**-**	No	Signal	**F**	**161.0**	**-**	**-**	**-**	Yes
39	Bradshaw Road & Elder Creek Road	Signal	**F**	**173.1**	Signal	E	66.1	No	Signal	**F**	**201.7**	Signal	D	49.4	No
40	Bradshaw Road & Florin Road	Signal	**F**	**125.3**	Signal	**F**	**85.3**	No	Signal	**F**	**89.9**	Signal	E	72.8	No
42	Happy Lane & Old Placerville Road	Two-way stop			Modify access control to allow only right-in and right-out on Happy Lane. Median will allow Westbound left-turns to Happy Lane. Construct 4-lane Routier extension.			Yes	Two-way stop			Modify access control to allow only right-in and right-out on Happy Lane. Median will allow Westbound left-turns to Happy Lane. Construct 4-lane Routier extension.			Yes
	Northbound Left Turn		***F***	***>300***						***F***	***>300***				
	Northbound Right Turn		***F***	***236.0***						***C***	***19.2***				
	Westbound Left Turn		*C*	*23.4*						***F***	***53.3***				

Intersection		A.M. Peak Hour							P.M. Peak Hour						
		Cumulative Plus Jackson Corridor Projects			County Standard Geometry Cumulative Plus Jackson Corridor Projects			Alternative Mitigation	Cumulative Plus Jackson Corridor Projects			County Standard Geometry Cumulative Plus Jackson Corridor Projects			Alternative Mitigation
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
43	Happy Lane & Kiefer Boulevard	Signal	**F**	**139.2**	**-**	**-**	**-**	Yes	Signal	E	67.8	-	-	-	No
45	Excelsior Road & Jackson Road	Signal	**F**	**330.8**	Signal	**F**	**106.9**	Yes	Signal	**F**	**269.1**	Signal	**F**	**144.6**	Yes
47	Excelsior Road & Florin Road	Signal	**F**	**111.2**	Signal	D	48.4	No	Signal	E	74.2	Signal	E	73.1	No
51	Mather Field Road & Rockingham Drive	Signal	**F**	**>300**	**-**	**-**	**-**	Yes	Signal	**F**	**170.3**	**-**	**-**	**-**	Yes
58	Zinfandel Drive & Douglas Road	Signal	**F**	**216.8**	Signal	E	62.1	No	Signal	**F**	**220.1**	Signal	E	66.9	No
61	Eagles Nest Road & Florin Road	Two-way stop			Signal	**F**	**121.3**	Yes	Two-way stop			Signal	**F**	**138.5**	Yes
	Northbound		***F***	***>300***						***F***	***>300***				
	Southbound		***F***	***>300***						***F***	***>300***				
	Eastbound Left Turn		*B*	*11*						*A*	*9.3*				
	Westbound Left Turn		*A*	*0*						*A*	*8.7*				
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	**F**	**118.6**	**-**	**-**	**-**	Yes	Signal	**E**	**76.7**	**-**	**-**	**-**	No
67	Sunrise Boulevard & Douglas Road	Signal	**F**	**190.0**	Signal	**F**	**189.8**	Yes	Signal	**F**	**105.4**	Signal	**F**	**90.9**	Yes
69	Sunrise Boulevard & Kiefer Boulevard	Signal	**F**	**>300**	Signal	**F**	**113.3**	No	Signal	**F**	**261.4**	Signal	**E**	**70.7**	No

Intersection		A.M. Peak Hour							P.M. Peak Hour						
		Cumulative Plus Jackson Corridor Projects			County Standard Geometry Cumulative Plus Jackson Corridor Projects			Alternative Mitigation	Cumulative Plus Jackson Corridor Projects			County Standard Geometry Cumulative Plus Jackson Corridor Projects			Alternative Mitigation
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
70	Sunrise Boulevard & Jackson Road	Signal	**F**	**90.0**	Signal	D	53.7	No	Signal	**E**	**79.3**	Signal	D	52.9	No
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	**F**	**120.4**	Signal	**D**	**36.4**	No	Signal	**E**	**71.0**	Signal	**E**	**70.1**	Yes
80	Grant Line Road & Jackson Road	Signal	**F**	**119.0**	Signal	**F**	**119.0**	Yes	Signal	**F**	**101.1**	Signal	**F**	**101.1**	Yes
86	Power Inn Road & Florin Rd	Signal	**F**	**119.3**	Signal	E	57.1	No	Signal	E	73.9	Signal	D	47.1	No
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	Signal	**D**	**43.2**	Signal	**D**	**39.1**	No	Signal	**D**	**52.0**	Signal	**D**	**38.4**	No
92	Grant Line Rd & Calvine Rd	Signal	**D**	**36.5**	Signal	B	11.6	No	Signal	C	30.9	Signal	A	9.5	No
93	Grant Line Rd & Dwy/Wilton Rd	Signal	**F**	**83.4**	Signal	**E**	**59.8**	No	Signal	**F**	**95.2**	Signal	**F**	**82.1**	Yes
95	Florin Perkins Road & 14th Avenue	Signal	**E**	**67.8**	**-**	**-**	**-**	Yes	Signal	D	46.9	**-**	**-**	**-**	No
96	Jackson Road & 14th Avenue	Signal	**F**	**119.3**	**-**	**-**	**-**	Yes	Signal	**E**	**57.0**	**-**	**-**	**-**	Yes
103	Rancho Cordova Pkwy & Douglas Road	Signal	**E**	**57.9**	Signal	**E**	**57.2**	No	Signal	**E**	**76.1**	Signal	**E**	**76.1**	Yes
303	Vineyard Road & Jackson Road	Signal	**F**	**128.3**	Signal	E	77.4	No	Signal	**F**	**96.4**	Signal	D	54.7	No
308	Hedge Avenue & Rock	Round	**F**	**60.5**	Round	C	15.5	No	Round	B	11.2	Round	B	10.2	No

Intersection		A.M. Peak Hour							P.M. Peak Hour						
		Cumulative Plus Jackson Corridor Projects			County Standard Geometry Cumulative Plus Jackson Corridor Projects			Alternative Mitigation	Cumulative Plus Jackson Corridor Projects			County Standard Geometry Cumulative Plus Jackson Corridor Projects			Alternative Mitigation
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
	Creek Pkwy WB														
310	Mayhew Road & Rock Creek Pkwy WB	Round	**F**	**181.2**	-	-	-	Yes	Round	**F**	**106.4**	-	-	-	Yes
311	Mayhew Road & Rock Creek Pkwy EB	Round	**F**	**126.7**	Round	**F**	**171.2**	Yes	Round	**F**	**126.5**	Round	**F**	**215.2**	Yes
318	Bradshaw Road & Mayhew Road	Signal	**F**	**142.3**	Signal	**F**	**115.8**	Yes	Signal	**F**	**118.1**	Signal	**F**	**95.2**	Yes
319	Bradshaw Road & Collector WJ-10	Signal	**F**	**182.7**	Signal	**F**	**146.9**	Yes	Signal	C	26.9	Signal	C	22.5	No
325	Douglas Road & Kiefer Boulevard	Signal	**F**	**237.5**	Signal	**F**	**128.4**	Yes	Signal	**F**	**191.3**	Signal	**F**	**103.7**	Yes
329	Routier Ext & Kiefer Boulevard	Signal	**F**	**87.8**	-	-	-	Yes	Signal	E	71.6	-	-	-	No
331	Routier Ext/Routier Rd & Old Placerville Road	Signal	**F**	**164.0**	Signal	**F**	**127.4**	Yes	Signal	**F**	**117.3**	Signal	**F**	**108.8**	Yes
400	Collector JT-3 & Jackson Road	Signal	**F**	**81.2**	Signal	D	47.2	No	Signal	D	47.0	Signal	B	18.9	No

Note: Gray shading represents changes in traffic control that the project is responsible to provide.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

(-): No changes to intersection geometry or operation.

Source: DKS Associates 2018

Table CU-11b: Cumulative Plus Jackson Corridor Projects County Standard and Ultimate Mitigations

Intersection		A.M. Peak Hour						P.M. Peak Hour					
		County Standard Mitigated Cumulative Plus Jackson Corridor Projects			Ultimate Mitigated Cumulative Plus Jackson Corridor Projects			County Standard Mitigated Cumulative Plus Jackson Corridor Projects			Ultimate Mitigated Cumulative Plus Jackson Corridor Projects		
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
3	Power Inn Road/Howe Avenue & Folsom Blvd	Signal	F	108.2	-	-	-	Signal	F	88.4	-	-	-
4	Power Inn Road & 14th Avenue	Signal	F	126.4	-	-	-	Signal	F	109.2	-	-	-
12	Watt Avenue & Folsom Blvd.	Signal	F	185.2	Signal	D	*39.4*	Signal	E	57.6	Signal	D	41.7
14	S. Watt Avenue & Kiefer Blvd.	Signal	F	83.2	Signal	SB Ramps A NB Ramps A	SB Ramps 6.5 NB Ramps 4.8	Signal	E	66.2	Signal	SB Ramps B NB Ramps B	SB Ramps 15.9 NB Ramps 12.7
16	S. Watt Avenue & Jackson Road	Signal	F	153.4	Signal	F	130.1	Signal	F	121.0	Signal	F	102.6
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	F	157.3	Signal	F	103.5	Signal	F	164.5	Signal	F	101.9
25	Hedge Avenue & Elder Creek Road	Signal	F	138.8	Signal	E	76.1	A	F	145.8	Signal	E	79.5
36	Bradshaw Road & Old Placerville Road	Signal	F	98.6	-	-	-	Signal	E	76.4	-	-	-
37	Bradshaw Road & Kiefer Boulevard	Signal	F	117.3	-	-	-	Signal	F	113.1	-	-	-
38	Bradshaw Road & Jackson Road	Signal	F	139.2	Gra	de Separate		Signal	F	67.8	Gra	de Separate	
42	Happy Lane & Old Placerville Road	Modify access control to allow only right-in and right-out on Happy Lane. Median will allow Westbound left-turns to Happy Lane. Alternative mitigation is to construct the 4-lane Route extension from Old Placerville Rd to Kiefer Blvd.											
43	Happy Lane & Kiefer Boulevard	Signal	F	106.9	-	-	-	Signal	E	67.8	-	-	-
45	Excelsior Road & Jackson Road	Signal	F	106.9	-	-	-	Signal	F	144.6	-	-	-
51	Mather Field Road & Rockingham Drive	Signal	F	>300	-	-	-	Signal	F	170.3	-	-	-
61	Eagles Nest Road & Florin Road	Signal	F	121.3	Signal	E	69.6	Signal	F	138.5	Signal	D	49.1
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	F	118.6	-	-	-	Signal	E	76.7	-	-	-
67	Sunrise Boulevard & Douglas Road	Signal	F	189.8	-	-	-	Signal	F	90.9	-	-	-
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	D	36.4	Signal	D	35.1	Signal	E	70.1	Signal	C	27.5
80	Grant Line Road & Jackson Road	Signal	F	119.0	Signal	F	87.6	Signal	F	101.1	Signal	D	52.7
93	Grant Line Rd & Dwy/Wilton Rd	Signal	E	59.8	Signal	D	52.6	Signal	F	82.1	Signal	C	27.9
95	Florin Perkins Road & 14th Avenue	Signal	E	67.8	-	-	-	Signal	D	46.9	-	-	-
96	Jackson Road & 14th Avenue	Signal	F	119.3	-	-	-	Signal	E	57.0	-	-	-
103	Rancho Cordova Pkwy & Douglas Road	Signal	E	57.2	Signal	D	39.5	Signal	E	76.1	Signal	E	68.7
310	Mayhew Road & Rock Creek Pkwy WB	Round	F	181.2	Signal	E	78.6	Round	F	106.4	Signal	E	73.7
311	Mayhew Road & Rock Creek Pkwy EB	Round	F	171.2				Round	F	215.2			
318	Bradshaw Road & Mayhew Road	Signal	F	115.8	Signal	F	85.0	Signal	F	95.2	Signal	F	80.4
319	Bradshaw Road & Collector WJ-10	Signal	F	146.9	Signal	D	40.7	Signal	C	22.5	Signal	B	17.0
325	Douglas Road & Kiefer Boulevard	Signal	F	128.4	-	-	-	Signal	F	103.7	-	-	-
329	Routier Ext & Kiefer Boulevard	Signal	F	87.8	Signal	D	48.4	Signal	E	71.6	Signal	E	63.2
331	Routier Ext/Routier Rd & Old Placerville Road	Signal	F	127.4	Signal	D	47.2	Signal	F	108.8	Signal	C	32.3

Note: Gray shading represents changes in traffic control that the project is responsible to provide.
Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.
(-): No changes to intersection geometry or operation.
Source: DKS Associates 2018

Table CU-12a: Cumulative Plus Jackson Corridor Projects Intersection Impacts and Mitigations

Intersection		Traffic Control		Cumulative Plus Jackson Corridor Projects Lane Geometrics				County Standard Mitigated Super Cumulative Plus Jackson Corridor Projects Lane Geometrics				LOS Impact with Mitigation?
		Cumulative Plus Jackson Corridor Projects	Mitigated Cumulative Plus Jackson Corridor Projects	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
3	Power Inn Road/Howe Avenue & Folsom Blvd.	Signal	Signal									Yes
4	Power Inn Road & 14th Avenue	Signal	Signal									Yes
12	S. Watt Ave./Watt Avenue & Folsom Blvd.	Signal	Signal									Yes
14	S. Watt Avenue & Kiefer Blvd.	Signal	Signal									Yes
16	S. Watt Avenue & Jackson Road	Signal	Signal									Yes
17	S. Watt Avenue & Fruitridge Road	Signal	Signal									No
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	Signal									Yes
23	Hedge Avenue & Jackson Road	Signal	Signal									No
25	Hedge Avenue & Elder Creek Road	Signal	Signal									Yes
28	Mayhew Road & Kiefer Boulevard	Signal	Signal									No
29	Mayhew Road & Jackson Road	Signal	Signal									No
31	Waterman Road/Mayhew Road & Elder Creek Road	Signal	Signal									No
32	Woodring Drive & Zinfandel Drive	Two-way stop	Roundabout									No
36	Bradshaw Road & Old Placerville Road	Signal	Signal									Yes
37	Bradshaw Road & Kiefer Boulevard	Signal	Signal									Yes
38	Jackson Road & Bradshaw Road	Signal	Signal									Yes
39	Bradshaw Road & Elder Creek Road	Signal	Signal									No
40	Bradshaw Road & Florin Road	Signal	Signal									No
42	Happy Lane & Old Placerville Road	Two-way stop	Access Control					Happy Lane to become right-in and right-out only. Median will allow westbound left turns.				Yes
43	Kiefer Boulevard & Happy Ln	Signal	Signal									Yes
45	Excelsior Road & Jackson Road	Signal	Signal									Yes
47	Excelsior Road & Florin Road	Signal	Signal									No
51	Mather Field Road & Rockingham Drive	Signal	Signal									Yes
58	Zinfandel Drive & Douglas Road	Signal	Signal									No
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Two-way stop	Signal									Yes
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	Signal									Yes
67	Sunrise Boulevard & Douglas Road	Signal	Signal									Yes
69	Sunrise Boulevard & Kiefer Boulevard	Signal	Signal									No

Intersection		Traffic Control		Cumulative Plus Jackson Corridor Projects Lane Geometrics				County Standard Mitigated Super Cumulative Plus Jackson Corridor Projects Lane Geometrics				LOS Impact with Mitigation?
		Cumulative Plus Jackson Corridor Projects	Mitigated Cumulative Plus Jackson Corridor Projects	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
70	Jackson Road & Sunrise Boulevard	Signal	Signal									No
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Rd/Grant	Signal	Signal									Yes
80	Grant Line Road & Jackson Road	Signal	Signal									Yes
86	Power Inn Road & Florin Rd	Signal	Signal									No
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	Signal	Signal									No
92	Grant Line Rd & Calvine Rd	Signal	Signal									No
93	Grant Line Rd & Driveway/Wilton Rd	Signal	Signal									Yes
95	Florin Perkins Road & 14th Avenue	Signal	Signal									Yes
96	14th Avenue & Jackson Road	Signal	Signal									Yes
103	Rancho Cordova Pkwy & Douglas Road	Signal	Signal									Yes
303	Vineyard Road & Jackson Road	Signal	Signal									No
308	Hedge Avenue & Rock Creek Pkwy Westbound	Roundabout	Roundabout									No
310	Mayhew Road & Rock Creek Pkwy Westbound	Roundabout	Signal									Yes
311	Mayhew Road & Rock Creek Pkwy Eastbound	Roundabout										Yes
318	Bradshaw Road & Mayhew Road	Signal	Signal									Yes
319	Bradshaw Road & Collector WJ-10	Signal	Signal									No
325	Douglas Road Extension & Kiefer Boulevard	Signal	Signal									Yes
329	Routier Ext & Kiefer Boulevard	Signal	Signal									Yes
331	Routier Ext/Routier Rd & Old Placerville Road	Signal	Signal									Yes
400	Collector JT-3 & Jackson Road	Signal	Signal									No

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.

1. High capacity intersections are defined in the Sacramento County General Plan and may include grade separations, additional turn lanes, and/or other features as deemed appropriate by the County.
2. Alternative mitigations represent proposed mitigations beyond the General Plan or standard intersection geometry, excluding high capacity intersections, as proposed by the County of Sacramento.

Source: DKS Associates 2018

Table CU-12b: Cumulative Plus Jackson Corridor Projects Intersection Impacts and Mitigations

Intersection		Traffic Control		County Standard Mitigated Cumulative Plus Jackson Corridor Projects Lane Geometrics				Ultimate Mitigated Cumulative Plus Jackson Corridor Projects Lane Geometrics				LOS Impact with Mitigation?	High Capacity Intersection?[1]	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
		County Standard Cumulative Plus Jackson Corridor Projects	Ultimate Mitigated Cumulative Plus Jackson Corridor Projects	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach				
3	Power Inn Road/Howe Avenue & Folsom Blvd.	Signal	Signal									Yes	No		Existing development
4	Power Inn Road & 14th Avenue	Signal	Signal									Yes	No		Existing development
12	S. Watt Ave./Watt Avenue & Folsom Blvd.	Signal	Signal									No	Yes	Grade separated NBT and SBT	
14	S. Watt Avenue & Kiefer Blvd.	Signal	Signal									No	Yes	Tight Diamond Interchange (SB Watt Ramps/Kiefer intersection shown)	
			Signal											Tight Diamond Interchange (NB Watt Ramps/Kiefer intersection shown)	
16	S. Watt Avenue & Jackson Road	Signal	Signal								*Free right	No	Yes	Triple SBL, Free WBR	
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	Signal									No	No	Dual SBR, Triple EBL	
25	Hedge Avenue & Elder Creek Road	Signal	Signal									No	No	Dual NBL, Dual SBL	
36	Bradshaw Road & Old Placerville Road	Signal	Signal									Yes	No		Existing development
37	Bradshaw Road & Kiefer Boulevard	Signal	Signal									Yes	No	Carry 3 EBT and 3 WBT lanes through intersection	Maximum General Plan Lanes
38	Jackson Road & Bradshaw Road	Signal	Signal					Grade Separate				No	No	HCI, high NBT and peak EBT/WBT movements, Cumulative Fair Share	
42	Happy Lane & Old Placerville Road	Access Control	Access Control	Happy Lane to become right-in and right-out only. Median will allow westbound left turns.								Yes	No	Construct 4-lane Routier extension from Old Placerville Rd to Kiefer Blvd	Maximum General Plan Lanes
43	Kiefer Boulevard & Happy Ln	Signal	Signal									Yes	No		Maximum lanes

Intersection		Traffic Control		County Standard Mitigated Cumulative Plus Jackson Corridor Projects Lane Geometrics				Ultimate Mitigated Cumulative Plus Jackson Corridor Projects Lane Geometrics				LOS Impact with Mitigation?	High Capacity Intersection?[1]	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
		County Standard Cumulative Plus Jackson Corridor Projects	Ultimate Mitigated Cumulative Plus Jackson Corridor Projects	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach				
45	Excelsior Road & Jackson Road	Signal	Signal									Yes	No	NBR overlap	Maximum General Plan Lanes
51	Mather Field Road & Rockingham Drive	Signal	Signal									Yes	No		Existing development
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Signal	Signal									No	No		
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	Signal									Yes	No		Maximum General Plan Lanes
67	Sunrise Boulevard & Douglas Road	Signal	Signal									Yes	No		Maximum General Plan Lanes
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Rd/Grant	Signal	Signal									No	No	Dual SBL	
80	Grant Line Road & Jackson Road	Signal	Signal									No	No	Dual SBR	
93	Grant Line Rd & Driveway/Wilton Rd	Signal	Signal									No	No		
95	Florin Perkins Road & 14th Avenue	Signal	Signal									Yes	No		Maximum lanes
96	14th Avenue & Jackson Road	Signal	Signal									Yes	No		Maximum lanes
103	Rancho Cordova Pkwy & Douglas Road	Signal	Signal									Yes	No	WBR Overlap	
310	Mayhew Road & Rock Creek Pkwy Westbound	Roundabout	Signal									No	No		
311	Mayhew Road & Rock Creek Pkwy Eastbound	Roundabout										No	No		

	Intersection	Traffic Control		County Standard Mitigated Cumulative Plus Jackson Corridor Projects Lane Geometrics				Ultimate Mitigated Cumulative Plus Jackson Corridor Projects Lane Geometrics				LOS Impact with Mitigation?	High Capacity Intersection?[1]	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
		County Standard Cumulative Plus Jackson Corridor Projects	Ultimate Mitigated Cumulative Plus Jackson Corridor Projects	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach				
318	Bradshaw Road & Mayhew Road	Signal	Signal									Yes	No	HCI, Triple EBL and dual SBR, Cumulative Fair Share	Maximum General Plan lanes
319	Bradshaw Road & Collector WJ-10	Signal	Signal									No	No	Dual SBL and Dual WBL	
325	Douglas Road Extension & Kiefer Boulevard	Signal	Signal									Yes	No		Maximum lanes
329	Routier Ext & Kiefer Boulevard	Signal	Signal									No	No		
331	Routier Ext/Routier Rd & Old Placerville Road	Signal	Signal									No	No	NBR overlap	

Notes: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.
[1] High capacity intersections are defined in the Sacramento County General Plan and may include grade separations, additional turn lanes, and/or other features as deemed appropriate by the County.
[2] Alternative mitigations represent proposed mitigations beyond the General Plan or standard intersection geometry, excluding high capacity intersections, as proposed by the County of Sacramento.
Source: DKS Associates 2018

Further, while implementation of Mitigation Measure TR-1, TR-2, and CU-TR-2 would result in fair share payment toward improvements that would reduce impacts to a less-than-significant level for some intersection, it cannot be guaranteed that all of these improvements would be implemented concurrent with the phasing of development because of the dynamic and interrelated nature of mitigation improvements that would serve multiple development projects. Because the timing of implementation of all required improvements cannot be guaranteed and their implementation is not subject to the responsibility of just Mather South applicants and the County, it cannot be guaranteed that cumulative significant impacts to intersections would be reduced to a less-than-significant level at the time of phased development. Therefore, the project would have a substantial contribution to a significant cumulative impact. This impact would be considerable and **significant and unavoidable**.

Table CU-13: Cumulative Plus Jackson Corridor Projects Summary of Affected Intersections

Intersection		Alternative Mitigation
Level of Service Impact Fully Mitigated by General Plan Lanes		
17	S. Watt Avenue & Fruitridge Road	
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	**
23	Hedge Avenue & Jackson Road	
28	Mayhew Road & Kiefer Boulevard	
29	Mayhew Road & Jackson Road	
31	Mayhew Road & Elder Creek Road	
32	Woodring Drive & Zinfandel Drive	
39	Bradshaw Road & Elder Creek Road	
40	Bradshaw Road & Florin Road	
47	Excelsior Road & Florin Road	
58	Zinfandel Drive & Douglas Road	
69	Sunrise Boulevard & Kiefer Boulevard	
70	Sunrise Boulevard & Jackson Road	
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	**
86	Power Inn Road & Florin Rd	
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	
92	Grant Line Rd & Calvine Rd	
303	Happy Lane & Jackson Road	
308	Hedge Avenue & Rock Creek Pkwy WB	
400	Collector JT-3 & Jackson Road	
Level of Service Impact Not Fully Mitigated by General Plan Lanes But Designated High		

Intersection		Alternative Mitigation
Capacity Intersection		
12	Watt Avenue & Folsom Blvd.	**
14	S. Watt Avenue & Kiefer Blvd.	**
16	S. Watt Avenue & Jackson Road	**
Level of Service Impact Not Fully Mitigated by General Plan Lanes		
3	Power Inn Road/Howe Avenue & Folsom Blvd	
4	Power Inn Road & 14th Avenue	
25	Hedge Avenue & Elder Creek Road	**
36	Bradshaw Road & Old Placerville Road	
37	Bradshaw Road & Kiefer Boulevard	*
38	Bradshaw Road & Jackson Road	**
42	Happy Lane & Old Placerville Road	
43	Happy Lane & Kiefer Boulevard	**
45	Excelsior Road & Jackson Road	*
51	Mather Field Road & Rockingham Drive	
61	Eagles Nest Road & Florin Road	**
66	Sunrise Boulevard & International Drive/Monier Circle	
67	Sunrise Boulevard & Douglas Road	
80	Grant Line Road & Jackson Road	**
93	Grant Line Rd & Dwy/Wilton Rd	**
95	Florin Perkins Road & 14th Avenue	
96	Jackson Road & 14th Avenue	
103	Rancho Cordova Pkwy & Douglas Road	**
310	Mayhew Road & Rock Creek Pkwy WB	**
311	Mayhew Road & Rock Creek Pkwy EB	**
318	Bradshaw Road & Mayhew Road	*
319	Bradshaw Road & Collector WJ-10	**
325	Douglas Road & Kiefer Boulevard	
329	Routier Ext & Kiefer Boulevard	*
331	Routier Ext/Routier Rd & Old Placerville Road	**

1. Alternative mitigations represent proposed mitigations beyond the General Plan, excluding designated high capacity intersections, as proposed by the County of Sacramento.

* denotes alternative mitigations that improve operations but do not fully mitigate the impact.

** denotes alternative mitigations that fully mitigate the impact.

Source: DKS Associates 2018

CUMULATIVE FREEWAY FACILITY IMPACTS

CUMULATIVE FREEWAY SEGMENTS

Table CU-14 summarizes a.m. and p.m. peak hour US 50 freeway mainline operations under the Cumulative Plus Jackson Corridor Project scenario. Detailed freeway mainline operations calculations are included in Appendix TR-1. The following freeway mainline location would experience unacceptable operating conditions with the addition of traffic generated by the Jackson Corridor Projects:

- Eastbound
- Stockton Boulevard to 59th Street - a.m. peak hour

CUMULATIVE FREEWAY RAMP INTERSECTION QUEUING

Table CU-15 and **Table CU-16** summarize a.m. and p.m. peak hour freeway ramp intersection queuing under the Cumulative No Project and Cumulative Plus Jackson Corridor Projects scenario. As shown in **Table CU-16**, implementation of the Jackson Corridor Projects would result in freeway ramp intersections experiencing vehicle queues that would extend into the ramp's deceleration area, onto the freeway, or queues greater than the available storage capacity.

Due to the addition of traffic to freeway ramp intersections in the study area generated by the Jackson Corridor Projects, the following locations would experience queues that exceed the available storage capacity:

- Eastbound
- Exit ramp to Howe Avenue - right turn queue length exceeds available storage – a.m. peak hour
- Exit ramp to Zinfandel Drive-right turn and through queue length exceeds available storage – a.m. peak hour
- Westbound
- Exit ramp to Rancho Cordova Parkway - left turn queue length exceeds available storage – a.m. and p.m. peak hours

Table CU-14: CEQA Cumulative Plus Four Projects Peak Hour Freeway Basic Segment Level of Service

Direction	Location	CEQA Cumulative				Cumulative Plus Jackson Corridor Projects			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Volume	LOS	Volume	LOS	Volume	LOS	Volume	LOS
East-bound US 50	SR 99 / SR 51 to Stockton Boulevard	8,751	D	8,638	D	9,295	D	8,855	D
	Stockton Boulevard to 59th Street	8,168	**F**	7,819	**F**	8,642	**F**	8,051	**F**
	59th Street to 65th Street	7,637	D	7,343	D	8,099	E	7,521	D
	65th Street to Howe Avenue	8,019	D	7,667	D	8,272	D	7,812	D
	Howe Avenue to Watt Avenue	7,213	C	6,672	C	7,366	C	6,679	C
	Watt Avenue to Bradshaw Road	9,633	**F**	8,982	E	9,825	**F**	9,056	E
	Bradshaw Rd to Mather Field Rd	9,467	**F**	9,052	C	9,483	**F**	9,015	C
	Mather Field Rd to Zinfandel Drive	9,072	D	8,767	D	9,211	D	8,916	D
	Zinfandel Drive to Sunrise Blvd	6,313	C	6,370	**F**	6,400	C	6,551	**F**
	Sunrise Bl to Rancho Cordova Pkwy	5,835	C	5,878	**F**	5,892	C	6,121	**F**
	Rancho Cordova Pkwy to Hazel Ave	7,170	D	6,636	**F**	7,249	D	6,929	**F**
West-bound US 50	Hazel Ave to Rancho Cordova Pkwy	5,376	B	5,162	C	5,643	B	5,218	C
	Rancho Cordova Pkwy to Sunrise Bl	6,906	C	4,366	B	7,103	C	4,461	B
	Sunrise Blvd to Zinfandel Drive	8,587	D	5,233	B	8,801	D	5,378	B
	Zinfandel Drive to Mather Field Rd	9,480	D	7,406	C	9,493	D	7,454	C
	Mather Field Rd to Bradshaw Road	9,560	**F**	8,720	D	9,406	**F**	8,544	D
	Bradshaw Road to Watt Avenue	9,001	**F**	7,882	D	8,854	**F**	8,099	E
	Watt Avenue to Howe Avenue	7,880	**F**	5,892	**F**	7,679	**F**	6,132	**F**
	Howe Avenue to 65th Street	8,761	**F**	8,070	**F**	8,972	**F**	8,384	**F**
	65th Street to 59th Street	8,809	**F**	7,978	**F**	9,012	**F**	8,296	**F**
	59th Street to Stockton Boulevard	9,692	D	8,294	**F**	9,890	D	8,656	**F**
	Stockton Boulevard to SR 99 / SR 51	10,187	E	9,674	**F**	10,300	E	9,916	**F**

Bold values denote level of service "F" conditions.
Red shaded values indicate project impacts.
Source: DKS Associate 2018

Table CU-15: Cumulative No Project Peak Hour Freeway Ramp Termini Queuing

Direction	US 50 Exit Ramp	Available Storage Length (feet/lane)			Maximum Queue Length (feet / lane)					
					A.M. Peak Hour			P.M. Peak Hour		
		L	T	R	L	T	R	L	T	R
Eastbound US-50	Howe Avenue	765	-	765	136	-	797	137	-	346
	Watt Avenue	1,500	-	1,500	210	-	403	244	-	242
	Bradshaw Road	1,250	-	1,250	149	-	566	159	-	317
	Mather Field Road	1,385	-	1,385	132	-	383	241	-	453
	Zinfandel Drive	1,025	1,025	1,025	163	**1,416**	**1,306**	396	368	930
	Sunrise Boulevard	1,695	-	1,695	106	-	199	196	-	114
	Rancho Cordova Pkwy.	-	-	1,850	-	-	394	-	-	528
	Hazel Avenue	1,310	-	1,310	305	-	23	711	-	18
Westbound US-50	Hazel Avenue	1,995		1,995	302		855	300		669
	Rancho Cordova Pkwy	1,065	-	-	**1,651**	-	-	**1,746**	-	-
	Sunrise Boulevard	1,540	-	1,540	52	-	198	23	-	442
	Zinfandel Drive	1,065	-	1,065	245	-	70	143	-	197
	Mather Field Road	1,335	-	1,335	362	-	331	176	-	183
	Bradshaw Road	1,330	-	1,330	177	-	122	265	-	47
	Watt Avenue	1,480	-	1,480	230	-	778	164	-	567
	Howe Avenue	1,355	1,355	1,355	85	412	804	199	412	684

Bold values exceed storage capacity.

L = left turn movement, T = through movement, R = right turn movement

Source: DKS Associates 2018

Table CU-16: Cumulative Plus Jackson Corridor Projects Peak Hour Freeway Ramp Termini Queuing

Direction	US 50 Exit Ramp	Available Storage Length (feet/lane)			Maximum Queue Length (feet / lane)					
					A.M. Peak Hour			P.M. Peak Hour		
		L	T	R	L	T	R	L	T	R
Eastbound US-50	Howe Avenue	765	-	765	143	-	**1,025**	161	-	514
	Watt Avenue	1,500	-	1,500	274	-	605	226	-	328
	Bradshaw Road	1,250	-	1,250	191	-	1,147	119	-	734
	Mather Field Road	1,385	-	1,385	168	-	386	311	-	289
	Zinfandel Drive	1,025	1,025	1,025	152	**1,398**	**1,359**	439	369	662
	Sunrise Boulevard	1,695	-	1,695	111	-	188	220	-	98
	Rancho Cordova Pkwy.	-	-	1,850	-	-	365	-	-	555
	Hazel Avenue	1,310	-	1,310	311	-	27	760	-	16
Westbound US-50	Hazel Avenue	1,995		1,995	317		796	319		656
	Rancho Cordova Pkwy	1,065	-	-	**1,705**	-	-	**1,682**	-	-
	Sunrise Boulevard	1,540	-	1,540	57	-	185	38	-	410
	Zinfandel Drive	1,065	-	1,065	253	-	69	183	-	192
	Mather Field Road	1,335	-	1,335	489	-	456	248	-	221
	Bradshaw Road	1,330	-	1,330	232	-	118	291	-	53
	Watt Avenue	1,480	-	1,480	268	-	682	174	-	607
	Howe Avenue	1,355	1,355	1,355	47	412	754	170	412	785

Red shaded values indicate project impacts.

L = left turn movement, T = through movement, R = right turn movement

Source: DKS Associates 2018

CUMULATIVE FREEWAY MERGE / DIVERGE / WEAVE SEGMENTS

Table CU-17 summarizes a.m. and p.m. peak hour freeway operations at ramp junctions and weaving areas under the Cumulative Plus Jackson Corridor Project scenario. Detailed freeway ramp junction and weaving area operations calculations are included in Appendix TR-1.

As shown in **Table CU-17**, with implementation of the Jackson Corridor Projects, the following merge/diverge/weave segment would experience merge / diverge LOS worse than the freeway's LOS:

- Westbound
- Hazel Avenue to Rancho Cordova Parkway weave - a.m. peak hour

In summary, because the addition of traffic generated by the Jackson Corridor Projects would result in unacceptable operating conditions along freeway facilities within the study area, the project would have a considerable contribution to a significant cumulative.

MITIGATION MEASURES

CU-TR-3: Cumulative Freeway ~~Capacity~~ Improvements.

According to Caltrans' US-50 Transportation Concept Report (TCR) and Corridor System Management Plan (CSMP), all mainline freeway lanes of the 8-lane ultimate facility (4 lanes in each direction) have already been built, with the exception of the segment between Zinfandel Drive and Sunrise Boulevard (where 6 of the 8 ultimate lanes exist today). With the exception of this segment, capacity improvements to widen the freeway mainline are precluded by the ultimate configuration in the TCR/CSMP. The TCR/CSMP does conceptualize other projects that will benefit the US-50 corridor without adding additional mainline travel lanes.

- **To alleviate the impacts of the Jackson Corridor Developments, the Sacramento County Department of Transportation has consulted with Caltrans and they have identified the following improvements. The applicant shall provide a fair share contribution toward Caltrans' freeway facilities to the satisfaction of the Sacramento County Department of Transportation and Caltrans:**
    - **Pay fair share toward the future conversion of HOV lanes to Toll Lanes or a Reversible Lane along U.S. Highway 50 from I-5 to Watt Avenue.**
    - **Pay fair share toward the U.S. Highway 50 Integrated Corridor Management for the deployment of various Intelligent Transportation System improvements along U.S. Highway 50 and the City of Rancho Cordova, and regionally significant corridors in Sacramento County and the City of Folsom for incident management (non-capacity increasing) [Caltrans ID SAC25113].**

Table CU-17: Cumulative Plus Jackson Corridor Projects Peak Hour Freeway Merge/Diverge/Weave Segment Level of Service

Direction	Location	Junction Type	Cumulative No Project				Cumulative Plus Jackson Corridor Projects			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
East-bound US 50	Northbound 65th Street Slip Entrance	Weave	945	**F**	777	**F**	918	**F**	724	**F**
	Howe Avenue / Hornet Drive Exit		2,088		2,140		2,120		2,267	
	Southbound Howe Avenue Loop Entrance	One-Lane Merge	729	D	1,342	D	750	D	1,332	D
	Northbound Howe Avenue Slip Entrance	One-Lane Merge	609	D	532	D	528	D	524	D
	Watt Avenue Exit	Two-Lane Diverge	1,538	B	1,705	B	1,532	B	1,604	A
	Southbound Watt Avenue Loop Entrance	One-Lane Merge	1,615	D	1,368	C	1,551	D	1,213	C
	Northbound Watt Avenue Slip Entrance	One-Lane Merge	682	D	588	C	608	D	597	C
	Bradshaw Road Exit	Two-Lane Diverge	2,068	**F**	1,631	B	2,264	**F**	1,835	C
	Southbound Bradshaw Road Loop Entrance	One-Lane Merge	268	D	422	D	274	D	505	D
	Northbound Bradshaw Road Slip Entrance	One-Lane Merge	1,486	D	1,029	C	1,511	D	1,102	C
	Mather Field Road Exit	Two-Lane Diverge	1,490	B	1,530	B	1,481	B	1,489	B
	Southbound Mather Field Road Loop Entrance	One-Lane Merge	252	C	222	C	252	C	169	C
	Northbound Mather Field Road Slip Entrance	Weave	431	**F**	894	**F**	571	**F**	1,123	**F**
	Zinfandel Drive Exit		3,083		1,861		3,082		1,797	
	Southbound Zinfandel Drive Loop Entrance	One-Lane Merge	183	C	173	C	185	C	151	C

Direction	Location	Junction Type	Cumulative No Project				Cumulative Plus Jackson Corridor Projects			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
	Northbound Zinfandel Drive Slip Entrance	Lane Addition	665	A	714	B	656	B	784	B
	Sunrise Boulevard Exit	Major Diverge	1,878	C	2,308	C	1,899	C	2,364	C
	Sunrise Boulevard Entrance	Lane Addition / Weave	1,233	D	1,122	C	1,174	B	1,162	C
	Rancho Cordova Parkway Exit	Major Diverge / Weave	374		763		327	C	816	
	Rancho Cordova Parkway Entrance	Weave	1,787	**F**	1,748	**F**	1,748	**F**	1,823	**F**
	Hazel Avenue Exit		1,904		2,611		1,950		2,718	
	Hazel Avenue Entrance	Weave	1,174	E	2,148	**F**	1,072	D	2,091	D
	Aerojet Road Exit		584		203		613		171	
West-bound US 50	Hazel Avenue Exit	Two-Lane Diverge	1,098	B	1,031	C	1,057	B	1,032	C
	Northbound Hazel Avenue Loop Entrance	One-Lane Merge	69	B	434	C	93	B	434	C
	Southbound Hazel Avenue Slip Entrance	Weave	2,306	**F**	2,263	**F**	2,369	**F**	2,302	**F**
	Rancho Cordova Parkway Exit		1,800		2,225		1,867		2,173	
	Rancho Cordova Parkway Entrance	Lane Addition / Weave	1,428	C	1,165	B	1,389	C	1,138	B
	Sunrise Boulevard Exit	Major Diverge / Weave	729		751	C	760		729	C
	Northbound Sunrise Boulevard Loop Entrance	Lane Addition	169	A	259	A	170	A	234	A
	Southbound Sunrise Boulevard Slip Entrance	Lane Addition	2,323	**F**	1,524	C	2,354	**F**	1,613	C
	Zinfandel Drive Exit	One-Lane Diverge	1,384	E	1,183	D	1,393	E	1,200	D
	Northbound Zinfandel Drive Loop Entrance	Lane Addition	909	C	1,443	D	803	C	1,295	C
	Southbound Zinfandel Drive Slip	One-Lane Merge	1,544	D	663	B	1,349	D	663	B

Direction	Location	Junction Type	Cumulative No Project				Cumulative Plus Jackson Corridor Projects			
			A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS	Ramp Volume	LOS
	Entrance									
	Mather Field Road Exit	One-Lane Drop	1,350	D	826	C	1,581	D	1,025	C
	Northbound Mather Field Road Loop Entrance	One-Lane Merge	626	C	1,192	C	499	C	1,193	C
	Southbound Mather Field Road Slip Entrance	One-Lane Merge	303	C	504	C	427	C	428	B
	Bradshaw Road Exit	Two-Lane Diverge	1,533	C	1,756	B	1,692	C	1,809	B
	Northbound Bradshaw Road Loop Entrance	One-Lane Merge	999	**F**	927	D	1,318	**F**	1,593	D
	Southbound Bradshaw Road Slip Entrance	One-Lane Merge	385	**F**	851	D	391	**F**	816	D
	Watt Avenue Exit	Major Diverge	1,568	E	1,112	D	1,364	E	991	D
	Northbound Watt Avenue Loop Entrance	One-Lane Merge	774	D	1,125	D	726	D	1,100	D
	Southbound Watt Avenue Slip Entrance	Lane Addition	1,134	D	1,062	C	919	D	1,006	D
	Howe Avenue Exit	Major Diverge	1,879	E	1,687	D	1,709	E	1,695	D
	Northbound Howe Avenue Loop Entrance	One-Lane Merge	613	D	572	D	607	D	563	D
	Southbound Howe Avenue Slip Entrance	One-Lane Merge	668	**F**	699	C	807	**F**	646	C

Bold values denote level of service "F" conditions.

Red shaded values indicate project impacts.

Source: DKS Associates 2018

~~To minimize the impact that the Jackson Corridor Projects would have on the US-50 mainline between Stockton Boulevard and 59th Street, at the time of issuance of building permits SacDOT and the County Special Districts group shall coordinate with Caltrans to identify the appropriate fair share contribution that the project applicants shall pay toward the construction of the following alternative improvement:~~

- ~~Ramp meter improvements (Caltrans ITS/OPS Project List)~~

~~To minimize the impact that the Jackson Corridor Projects would have on the westbound US-50 weave between Hazel Avenue and Rancho Cordova Parkway, at the time of issuance of building permits SacDOT and the County Special Districts group shall coordinate with Caltrans to identify the appropriate fair share contribution that the project applicants shall pay toward the construction of the following alternative improvement:~~

- ~~Multi-modal corridor improvements and interchange improvements at Hazel Avenue (2035 SACOG MTP)~~
- ~~Auxiliary lanes between Hazel Avenue and Rancho Cordova Parkway (2035 SACOG MTP)~~

Implementation of CU-TR-3 would result in fair share payment toward improvements that would reduce the impacts of the Jackson Corridor Projects on freeway facilities. However, the amount by which these improvements would improve operating conditions at the facilities detailed above are unknown at this time; thus, if implemented it cannot be assured that CU-TR-3 would improve operating conditions to acceptable levels at all affected freeway facilities. Additionally, because implementation of the improvements does not fall within Sacramento County's jurisdictional control, and while the appropriate jurisdictions can and should implement feasible mitigation to reduce impacts, it cannot be guaranteed that these improvements would be implemented or implemented concurrent with, or prior to project development. Therefore, this impact would remain significant. The project would have a **considerable contribution** to a **significant and unavoidable** cumulative freeway impact.

Cumulative Roadway Functionality Impacts

Table CU-18 summarizes the results of the rural roadway segment functionality analysis under the Cumulative Plus Jackson Corridor Projects scenario. This table includes the number of lanes assumed with the implementation of the Jackson Corridor Projects, which in many cases is greater than the number of lanes in the existing condition. The shaded table cells under the "Travel Lanes" heading illustrates new roadways and widened roadways that are assumed part of the Jackson Corridor Projects. The "Substandard" heading indicates whether a roadway meets the County standards of providing 12-foot travel lanes with 6-foot shoulders. If any of the Jackson Corridor Projects make improvements to a roadway segment such as widening, reconstruction of the entire substandard roadway segment to County standards would be required. The shaded table cells under the "Functionality Impact" heading indicate

those locations with a functionality impact. **Plate CU-9** depicts the location of the segments along which functionality impacts would occur.

As stated above, the Joint TIS and in Chapter 17, "Traffic and Circulation," assumed that the Jackson Corridor Projects would construct several travel lanes on roadway segments that are internal to, or on the boundary of the Jackson Corridor Projects, and the entire roadway segment would be reconstructed to County standards. The timing of implementation of these additional traffic lanes on these internal or boundary roadway segments would affect whether or not impacts would occur as some point before full build out of the Mather South Project. As shown in **Table CU-18,** implementation of the Jackson Corridor Projects would result in functionality impacts along 32 roadway segments within the project study area. Therefore, the project would have a **cumulatively considerable** contribution to a significant cumulative impact.

MITIGATION MEASURES

CU-TR-4. Cumulative Roadway Functionality Improvements

> The project applicant shall implement Mitigation Measures TR-1 and TR-2. This program would require that before the issuance of tentative maps, the County shall identify the appropriate fair share contribution that the project applicants shall pay toward the construction of the improvements summarized in **Table CU-19**.
>
> Proposed improvements include widening the deficient rural roadway segments shown in **Table CU-19** to County standards. **Table CU-19** summarizes the proposed improvements of widening the deficient rural roadway segments to County standards, and the resultant functionality analysis for these roadway segments with these improvements implemented.

Implementation of Mitigation Measures TR-1, TR-2, and CU-TR-4 would result in fair share payment toward improvements that would reduce the cumulative roadway functionality impacts of the Jackson Corridor Projects as shown in **Table CU-19**. However, it cannot be guaranteed that all of these improvements would be implemented concurrent with the phasing of development proposed for the Mather South Project because of the dynamic and interrelated nature of mitigation improvements that would serve multiple development projects. If all improvements were implemented in a timely way, all impacts would be reduced to a less-than-significant level. However, because the timing of implementation of all required improvements cannot be guaranteed and is not subject to the sole responsibility of just Mather South applicants and the County, it cannot be guaranteed that significant impacts to roadway segments would be reduced to a less-than-significant at the time of development. Therefore, the project would have a **considerable contribution** to **significant and unavoidable** cumulative roadway functionality impact.

Table CU-18: Cumulative Plus Jackson Corridor Projects Roadway Functionality Impacts

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				Cumulative Plus Jackson Corridor Projects			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]
15	Douglas Rd	Mather Blvd	Zinfandel Dr	County	2	23	Yes	6,635	4	Arterial M	33,390	Yes[3]
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	Rancho Cordova/County	2	23	Yes	8,369	6	Arterial M	50,360	Yes[3]
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	County	2	20	Yes	740	4	Arterial M	13,130	Yes[3]
20	Eagles Nest Rd	Jackson Rd	Florin Rd	County	2	<21	Yes	517	2	Arterial M	9,110	Yes
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	County	2	<21	Yes	189	2	Arterial M	4,530	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	County	2	23	Yes	5,576	4	Arterial M	52,900	Yes[3]
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	County	2	23	Yes	5,797	4	Arterial M	43,330	Yes[3]
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	County	2	23	Yes	5,355	4	Arterial M	27,860	Yes[3]
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	County	2	23	Yes	2,158	3	Arterial M	30,740	Yes[3]
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	County	2	22	Yes	3,716	2	Arterial M	26,970	Yes
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	County	2	<21	Yes	5,075	3	Arterial M	36,220	Yes[3]
32	Excelsior Rd	Elder Creek Rd	Florin Rd	County	2	<21	Yes	4,203	3	Arterial M	12,520	Yes[3]
33	Excelsior Rd	Florin Rd	Gerber Rd	County	2	<21	Yes	5,423	2	Arterial M	13,080	Yes
34	Excelsior Rd	Gerber Rd	Calvine Rd	County	2	<21	Yes	4,229	2	Arterial M	8,360	Yes
39	Florin Rd	South Watt Ave	Hedge Ave	County	2	22	Yes	7,718	4	Arterial M	12,010	Yes[3]
40	Florin Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	6,312	4	Arterial M	13,280	Yes[3]
41	Florin Rd	Mayhew Rd	Bradshaw Rd	County	2	22	Yes	6,317	4	Arterial M	40,200	Yes[3]
42	Florin Rd	Bradshaw Rd	Excelsior Rd	County	2	22	Yes	3,478	4	Arterial M	26,070	Yes[3]
43	Florin Rd	Excelsior Rd	Sunrise Blvd	County	2	22	Yes	3,835	2	Arterial M	17,090	Yes
48	Fruitridge Rd	South Watt Ave	Hedge Ave	City of Sacramento/ County	2	22	Yes	2,890	3	Arterial M	24,240	Yes[3]
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	1,790	4	Arterial M	21,800	Yes[3]
50	Grant Line Rd	White Rock Rd	Douglas Rd	Rancho Cordova/County	2	22	Yes	7,189	4	Arterial M	41,130	Yes[3]
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	County	2	22	Yes	4,635	4	Arterial M	17,440	Yes[3]
59	Hedge Ave	Jackson Rd	Fruitridge Rd	County	2	22	Yes	3,061	2	Arterial M	11,760	Yes
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	City of Sacramento/County	2	22	Yes	3,737	2	Arterial M	10,010	Yes
61	Hedge Ave	Elder Creek Rd	Florin Rd	County	2	22	Yes	2,722	2	Arterial M	22,460	Yes
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	County	2	26	Yes	13,030	6	Arterial M	59,380	Yes[3]
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	County	2	26	Yes	10,478	4	Arterial M	62,220	Yes[3]
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	City of Sacramento/County	2	22	Yes	4,616	2	Arterial M	4,830	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	County	2	22	Yes	4,618	6	Arterial M	50,960	Yes[3]
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	County	2	22	Yes	656	3	Arterial M	39,820	Yes[3]
83	Mather Blvd-Excelsior Rd[4]	Douglas Rd	Kiefer Blvd	County	2	22	Yes	6,751	2	Res Collector F	6,410	No
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	County	2	22	Yes	1,616	4	Arterial M	47,790	Yes[3]
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	Rancho Cordova/County	2	20	Yes	2,490	4	Arterial M	55,810	Yes[3]
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	County	2	<21	Yes	2,848	4	Arterial M	22,250	Yes[3]

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.
Red text with light gray shading indicate project impacts.

1. Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.
2. Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.
3. The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.
4. Excluding the roadway segment that is within the developed community of Independence at Mather.
5. The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Source: DKS Associates 2018

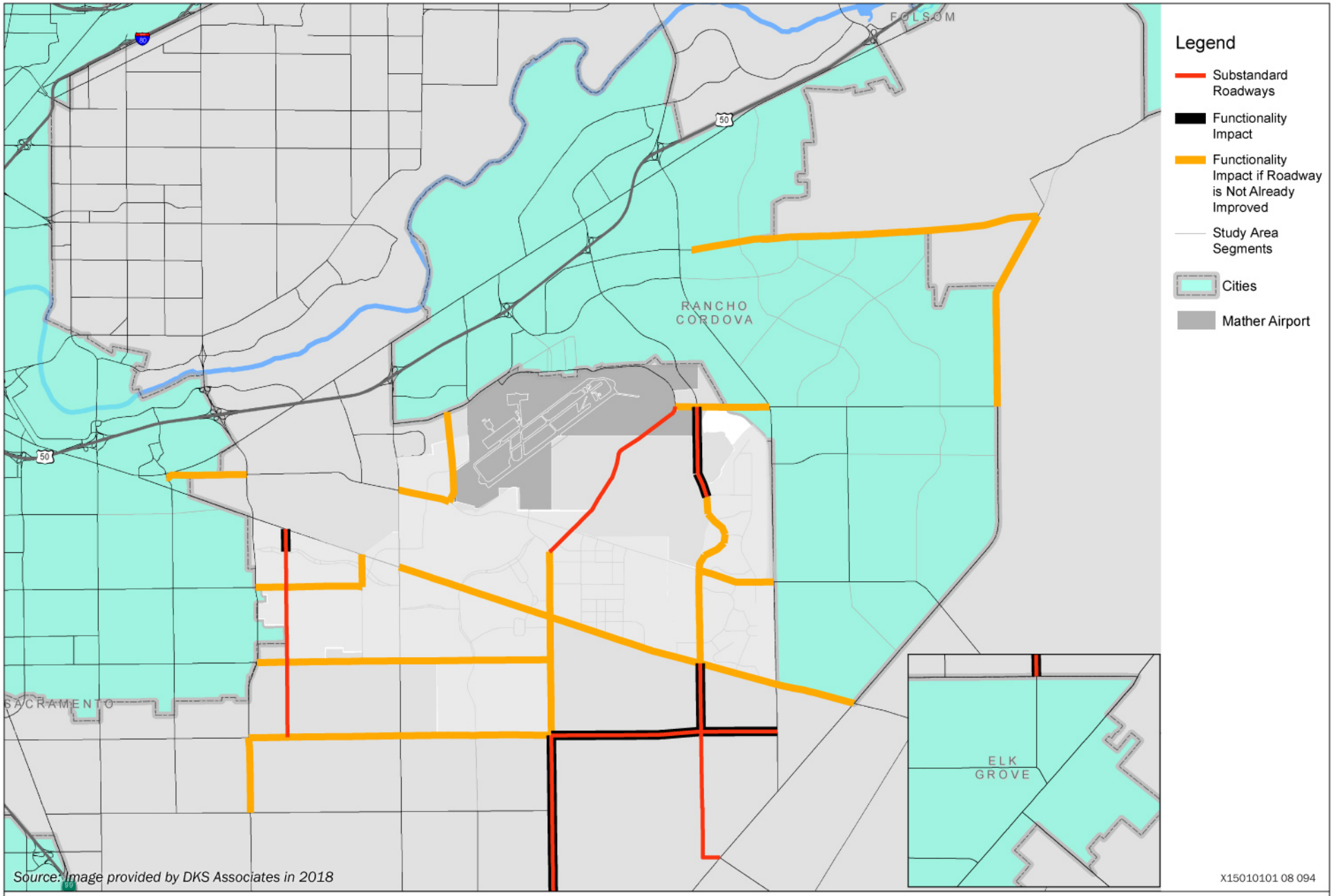


Plate CU-9: Cumulative Plus Jackson Corridor Projects – Functionality Impacts

ASCENT ENVIRONMENTAL

Table CU-19: Cumulative Plus Jackson Corridor Projects Functionality Mitigations

ID	Roadway	Segment		Cumulative Plus Jackson Corridor Projects				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]		
		Mather Blvd	Zinfandel Dr	4	Arterial M	33,390	**Yes[3]**	Widen to County standards [5]	No
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	50,360	**Yes[3]**	Widen to County standards [5]	No
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	4	Arterial M	13,130	**Yes[3]**	Widen to County standards [5]	No
20	Eagles Nest Rd	Jackson Rd	Florin Rd	2	Arterial M	9,110	**Yes**	Widen to County standards [5]	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	4	Arterial M	52,900	**Yes[3]**	Widen to County standards [5]	No
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	4	Arterial M	43,330	**Yes[3]**	Widen to County standards [5]	No
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	27,860	**Yes[3]**	Widen to County standards [5]	No
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	3	Arterial M	30,740	**Yes[3]**	Widen to County standards [5]	No
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	2	Arterial M	26,970	**Yes**	Widen to County standards [5]	No
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	3	Arterial M	36,220	**Yes[3]**	Widen to County standards [5]	No
32	Excelsior Rd	Elder Creek Rd	Florin Rd	3	Arterial M	12,520	**Yes[3]**	Widen to County standards [5]	No
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Arterial M	13,080	**Yes**	Widen to County standards [5]	No
34	Excelsior Rd	Gerber Rd	Calvine Rd	2	Arterial M	8,360	**Yes**	Widen to County standards [5]	No
39	Florin Rd	South Watt Ave	Hedge Ave	4	Arterial M	12,010	**Yes[3]**	Widen to County	No

ID	Roadway	Segment		Cumulative Plus Jackson Corridor Projects				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]		
								standards [5]	
40	Florin Rd	Hedge Ave	Mayhew Rd	4	Arterial M	13,280	Yes[3]	Widen to County standards [5]	No
41	Florin Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	40,200	Yes[3]	Widen to County standards [5]	No
42	Florin Rd	Bradshaw Rd	Excelsior Rd	4	Arterial M	26,070	Yes[3]	Widen to County standards [5]	No
43	Florin Rd	Excelsior Rd	Sunrise Blvd	2	Arterial M	17,090	Yes	Widen to County standards [5]	No
48	Fruitridge Rd	South Watt Ave	Hedge Ave	3	Arterial M	24,240	Yes[3]	Widen to County standards [5]	No
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	4	Arterial M	21,800	Yes[3]	Widen to County standards [5]	No
50	Grant Line Rd	White Rock Rd	Douglas Rd	4	Arterial M	41,130	Yes[3]	Widen to County standards [5]	No
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	4	Arterial M	17,440	Yes[3]	Widen to County standards [5]	No
59	Hedge Ave	Jackson Rd	Fruitridge Rd	2	Arterial M	11,760	Yes	Widen to County standards [5]	No
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	2	Arterial M	10,010	Yes	Widen to County standards [5]	No
61	Hedge Ave	Elder Creek Rd	Florin Rd	2	Arterial M	22,460	Yes	Widen to County standards [5]	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	6	Arterial M	59,380	Yes[3]	Widen to County standards [5]	No
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	4	Arterial M	62,220	Yes[3]	Widen to County standards [5]	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	6	Arterial M	50,960	Yes[3]	Widen to County	No

ID	Roadway	Segment		Cumulative Plus Jackson Corridor Projects				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]		
								standards [5]	
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	3	Arterial M	39,820	**Yes[3]**	Widen to County standards [5]	No
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	4	Arterial M	47,790	**Yes[3]**	Widen to County standards [5]	No
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	4	Arterial M	55,810	**Yes[3]**	Widen to County standards [5]	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	4	Arterial M	22,250	**Yes[3]**	Widen to County standards [5]	No

Notes: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

Red text with light gray shading indicate project impacts.

1. Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.
2. Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.
3. The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.
4. Excluding the roadway segment that is within the developed community of Independence at Mather.
5. The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Source: DKS Associates 2018

CUMULATIVE PLUS MATHER SOUTH PROJECT

CUMULATIVE ROADWAY SEGMENT OPERATIONS CUMULATIVE PLUS MATHER SOUTH PROJECT

Table CU-20 summarizes the results of the operations analysis for the traffic study area roadway segments under the Cumulative No Project and Cumulative Plus Jackson Corridor Projects conditions. The table includes the new roadways or widened roadways, the roadway improvements that would be the responsibility of the project, and the roadway segments where a LOS impact occurs. Detailed roadway segment operations calculations and the full list of study area roadway segment operating conditions are included in Appendix TR-1.

As shown in **Table CU-20**, the addition of vehicle trips generated by the Mather South Project would result in the exceedance of applicable LOS and V/C thresholds along four roadway segments in the study area. Thus, this impact would be **cumulatively considerable.**

Table CU-20: Cumulative Roadway Segment Levels of Service - Impacts Triggered by Mather South Project

ID	Roadway	Segment		Cumulative No Project					Cumulative Plus Jackson Corridor Projects					Project(s) Responsible for Change in Lanes
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	V/C Ratio	LOS	Travel Lanes	Facility Type[1]	Forecasted Volume	V/C Ratio	LOS	
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	4	Arterial M	31,730	0.88	D	4	Arterial M	45,290	1.26	**F**	
78.4	Kiefer Blvd	E Collector MS-1	Sunrise Blvd	2	Arterial M	10,150	0.56	A	3	Arterial M	39,820	2.21	**F**	NewBridge
104.3	Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	6	Arterial M	54,110	1.00	F	6	Arterial M	63,690	1.18	**F**	
105	Sunrise Blvd	Douglas Rd	Kiefer Blvd	5	Arterial M	34,760	0.97	E	5	Arterial M	43,880	1.22	**F**	

Notes: V/C -= Volume to Capacity, LOS = Level of Service

Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

[1.] The following classifications are used to determine daily roadway capacity: Arterial L - Arterial, Low Access Control

Arterial M - Arterial, Moderate Access Control Arterial H - Arterial, High Access Control Rural Hwy - Rural 2-lane Highway

Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders Res Collector F - Residential Collector with Frontage

Res Collector NF - Residential Collector with No Frontage

Source: DKS Associates 2018

MITIGATION MEASURES

CU-TR-5. Cumulative Roadway Segment Operations Cumulative Mather South Project

> The project applicant shall implement Mitigation Measure CU-TR-1 which requires the applicant to pay their appropriate fair share contribution toward the construction of the improvements summarized in **Table CU-21**.
>
> **Table CU-21** summarizes the results of the operations analysis for the study area roadway segments with mitigation under the Cumulative Plus Mather South Project scenario. Where feasible, the number of roadway lanes was increased to mitigate the impact. However, the increased number of lanes could not exceed the maximum General Plan designations of the appropriate jurisdictions. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate widened roadways for mitigation purposes, which would be the responsibility of the Jackson Corridor Projects to fund. The Mather South Project would contribute its fair share for these improvements. The shaded table cells under the "Level of Service" heading indicate those locations that would continue to operate unacceptably after mitigation. The table also includes the constraint that precluded full mitigation of the LOS impact. In several locations where the improvements allowed under the general plan would not mitigate an LOS impact, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These alternative mitigation measures will either fully mitigate the impact or substantially reduce the level of impact.

Implementation of Mitigation Measure CU-TR-5 would result in fair share payment toward improvements that would reduce the impacts of the Mather South Project as shown in **Table CU-21**. However, as shown in **Table CU-21**, two roadway segments operating unacceptably under the Cumulative Plus Jackson Corridor Projects scenario would continue to operate at unacceptable levels with the implementation of all feasible improvement projects funded through Mitigation Measure CU-TR-5. Additionally, it cannot be guaranteed that any of these improvements would be implemented or implemented concurrent with, or prior to project development. Therefore, the project would result in a **considerable contribution** to a **significant and unavoidable** cumulative impact**.**

CUMULATIVE INTERSECTION OPERATIONS CUMULATIVE MATHER SOUTH PROJECT

Table CU-22 and **Table CU-23** summarize the results of the operations analysis for the study area intersections under Cumulative Plus Mather South Project conditions. The tables include the implementation of intersection changes associated with the Mather South Project. **Table CU-23** illustrates the type of traffic control and number of lanes by type on each study area intersection approach. Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type would be fully funded by the project(s) shown in the last column. Shaded table cells in **Table CU-22** illustrate those locations with a LOS impact. Detailed intersection operations calculations and the full list of study area intersection operating conditions are included in Appendix TR-1.

A signal warrant analysis was conducted for all unsignalized intersections along Jackson Road, and other unsignalized intersections in close proximity to the project. Detailed signal warrant calculation sheets are included in Appendix TR-1. The following unsignalized intersection would operate at an unacceptable level and meet one or more traffic signal warrant under the Cumulative Plus Mather South Project conditions:

- Eagles Nest Road and Florin Road

As shown in **Table CU-22**, the addition of vehicle trips generated by the Mather South Project would result in the exceedance of applicable LOS and delay thresholds under Cumulative Plus Mather South Project conditions. Thus, the project would result in a considerable contribution to a significant cumulative impact.

MITIGATION MEASURES

CU-TR-6. Cumulative Intersection Operations Cumulative Mather South Project

The project applicant shall implement Mitigation Measure CU-TR-2. This mitigation will require the project applicant to contribute their appropriate fair share contribution toward the construction of the improvements summarized in **Table CU-24a** through **Table CU-25b** below.

Table CU-24a and **Table CU-25a** summarize recommended mitigation and the results of the operations analysis for the traffic study area intersections with mitigation, which does not exceed the County's standard number of approach lanes, under the Cumulative Plus Mather South Project scenario. **Table CU-24b** and **Table CU-25b** summarize recommended mitigation and the results of the operations analysis for the traffic study area intersections with ultimate mitigation, which may exceed the County's standard number of approach lanes, under the Cumulative Plus Mather South Project scenario.

Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type have been made to mitigate impacts, which would be the responsibility of the Jackson Corridor Projects to fund. **Table CU-25a** and **Table CU-25b** also identify those intersections that would continue operate at unacceptable levels after mitigation, along with the constraint that precluded full mitigation. In locations where the LOS impact could not be mitigated by implementing the County's standard number of approach lanes, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These generally include providing additional turn lanes, carrying an additional through lane past the intersection, or designating the intersection as a High Capacity Intersection. These alternative mitigation measures would either fully mitigate the impact or substantially reduce the level of impact. Detailed intersection operations calculations and the full list of study area intersection operating conditions are included in Appendix TR-1.

Table CU-21: Cumulative Plus Jackson Corridor Projects Roadway Segment Mitigations - Impacts Triggered by Mather South Project

ID	Roadway	Segment		Cumulative Plus Jackson Corridor Projects					Mitigated Cumulative Plus Jackson Corridor Projects						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	V/C Ratio	LOS	Travel Lanes	Facility Type[1]	V/C Ratio	LOS	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	4	Arterial M	45,290	1.26	**F**	6	Arterial M	0.84	D	No		
78.4	Kiefer Blvd	E Collector MS-1	Sunrise Blvd	3	Arterial M	39,820	2.21	**F**	4	Arterial M	1.11	**F**	Yes		Maximum General Plan lanes
104.3	Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	6	Arterial M	63,690	1.18	**F**	6	Arterial M	1.18	**F**	Yes		Maximum General Plan lanes
105	Sunrise Blvd	Douglas Rd	Kiefer Blvd	5	Arterial M	43,880	1.22	**F**	6	Arterial M	0.81	D	No		

Notes: V/C = Volume to Capacity, LOS = Level of Service

Gray shading represents changes in travel lanes or facility type that the project is responsible to provide.

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

[1.] The following classifications are used to determine daily roadway capacity:

Arterial L - Arterial, Low Access Control Arterial M - Arterial, Moderate Access Control Arterial H - Arterial, High Access Control Rural Hwy - Rural 2-lane Highway

Rural S - Rural 2-lane Road, 24'-36' of pavement, Paved Shoulders Rural NS - Rural 2-lane Road, 24'-36' of pavement, No Shoulders Res Collector F - Residential Collector with Frontage

Res Collector NF - Residential Collector with No Frontage

[2.] Alternative mitigations represent proposed mitigations beyond the General Plan, as proposed by the County of Sacramento.

Source: DKS Associates 2018

Table CU-22: Cumulative Plus Jackson Corridor Projects Intersection Levels of Service - Impacts Triggered by Mather South Project

Intersection		A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Corridor Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Corridor Projects			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
51	Mather Field Road & Rockingham Drive	Signal	**F**	**156.5**	Signal	**F**	**>300**	Yes	Signal	**F**	**119.4**	Signal	**F**	**170.3**	Yes
58	Zinfandel Drive & Douglas Road	Signal	**F**	**156.8**	Signal	**F**	**216.8**	Yes	Signal	E	73.1	Signal	**F**	**220.1**	Yes
61	Eagles Nest Road & Florin Road	Two-way stop			Two-way stop			Yes	Two-way stop			Two-way stop			Yes
	Northbound		***F***	***>300***		***F***	***>300***			***F***	***>300***		***F***	***>300***	
	Southbound		***F***	***>300***		***F***	***>300***			***F***	***>300***		***F***	***>300***	
	Eastbound Left Turn		*B*	*10.2*		*B*	*11.3*			*A*	*8.5*		*A*	*9.3*	
	Westbound Left Turn		*A*	*0.0*		*A*	*0.0*			*A*	*9.4*		*A*	*8.7*	
67	Sunrise Boulevard & Douglas Road	Signal	**F**	**140.5**	Signal	**F**	**190.0**	Yes	Signal	**E**	**73.5**	Signal	**F**	**105.4**	Yes
69	Sunrise Boulevard & Kiefer Boulevard	Signal	**F**	**151.0**	Signal	**F**	**>300**	Yes	Signal	**F**	**138.0**	Signal	**F**	**261.4**	Yes
72	Sheldon Lake Drive/ Sunrise Boulevard & Grant Line Road	Signal	**F**	**91.2**	Signal	**F**	**120.4**	Yes	Signal	C	33.1	Signal	**E**	**71.0**	Yes
93	Grant Line Rd & Dwy/Wilton Rd	Signal	**E**	**78.8**	Signal	**F**	**83.4**	Yes	Signal	**E**	**69.8**	Signal	**F**	**95.2**	Yes

Note: Gray shading represents changes in traffic control that the project is responsible to provide.
Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.
Source: DKS Associates 2018

Table CU-23: Cumulative Plus Jackson Corridor Projects Intersection Geometrics - Impacts Triggered by Mather South Project

Intersection		Traffic Control		Super Cumulative No Project Lane Geometrics				Super Cumulative Plus Jackson Corridor Projects Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus Jackson Corridor Projects	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
51	Mather Field Road & Rockingham Drive	Signal	Signal									
58	Zinfandel Drive & Douglas Road	Signal	Signal									
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Two-way stop	Signal									
67	Sunrise Boulevard & Douglas Road	Signal	Signal									
69	Sunrise Boulevard & Kiefer Boulevard	Signal	Signal									NewBridge, Mather South
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	Signal									
76	White Rock Road & Prairie City Road	Signal	Signal									
93	Grant Line Road & Driveway/Wilton Rd	Signal	Signal									

Note: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.
Source: DKS Associates 2018

Table CU-24a: Cumulative Plus Jackson Corridor Projects Impacted Intersections and County Standard Mitigations - Impacts Triggered by Mather South Project

Intersection		A.M. Peak Hour							P.M. Peak Hour						
		Cumulative Plus Jackson Corridor Projects			County Standard Mitigated Cumulative Plus Jackson Corridor Projects			Alternative Mitigation Needed	Cumulative Plus Jackson Corridor Projects			County Standard Mitigated Cumulative Plus Jackson Corridor Projects			Alternative Mitigation Needed
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
51	Mather Field Road & Rockingham Drive	Signal	**F**	**>300**	Signal	**-**	**-**	Yes	Signal	**F**	**170.3**	Signal	**-**	**-**	Yes
58	Zinfandel Drive & Douglas Road	Signal	**F**	**216.8**	Signal	E	62.1	No	Signal	**F**	**220.1**	Signal	E	66.9	No
61	Eagles Nest Road & Florin Road	Two-way stop			Signal	**F**	**121.3**	Yes	Two-way stop			Signal	**F**	**138.5**	Yes
	Northbound		***F***	***>300***						***F***	***>300***				
	Southbound		***F***	***>300***						***F***	***>300***				
	Eastbound Left Turn		*B*	*11*						*A*	*9.3*				
	Westbound Left Turn		*A*	*0*						*A*	*8.7*				
67	Sunrise Boulevard & Douglas Road	Signal	**F**	**190.0**	Signal	**F**	**189.8**	Yes	Signal	**F**	**105.4**	Signal	**F**	**90.9**	Yes
69	Sunrise Boulevard & Kiefer Boulevard	Signal	**F**	**>300**	Signal	**F**	**113.3**	No	Signal	**F**	**261.4**	Signal	**E**	**70.7**	No
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	**F**	**120.4**	Signal	**D**	**36.4**	Yes	Signal	**E**	**71.0**	Signal	**E**	**70.1**	Yes
93	Grant Line Rd & Dwy/Wilton Rd	Signal	**F**	**83.4**	Signal	**E**	**59.8**	Yes	Signal	**F**	**95.2**	Signal	**F**	**82.1**	Yes

Note: Gray shading represents changes in traffic control that the project is responsible to provide.
Bold values do not meet LOS policy. Red values with light gray shading indicate project impacts.
Source: DKS Associates 2018

Table CU-24b: Cumulative Plus Jackson Corridor Projects County Standard and Ultimate Mitigations - Impacts Triggered by Mather South Project

Intersection		A.M. Peak Hour						P.M. Peak Hour					
		County Standard Mitigated Cumulative Plus Jackson Corridor Projects			Ultimate Mitigated Cumulative Plus Jackson Corridor Projects			County Standard Mitigated Cumulative Plus Jackson Corridor Projects			Ultimate Mitigated Cumulative Plus Jackson Corridor Projects		
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)
51	Mather Field Road & Rockingham Drive	Signal	**F**	**>300**	Signal	**-**	**-**	Signal	**F**	**170.3**	Signal	**-**	**-**
61	Eagles Nest Road & Florin Road	Signal	**F**	**121.3**	Signal	E	69.6	Signal	**F**	**138.5**	Signal	D	49.1
67	Sunrise Boulevard & Douglas Road	Signal	**F**	**189.8**	Signal	**-**	**-**	Signal	**F**	**90.9**	Signal	**-**	**-**
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	**D**	**36.4**	Signal	**D**	**35.1**	Signal	**E**	**71.0**	Signal	C	27.5
93	Grant Line Rd & Dwy/Wilton Rd	Signal	**F**	**83.4**	Signal	C	21.3	Signal	**F**	**95.2**	Signal	C	27.9

Notes: Gray shading represents changes in traffic control that the project is responsible to provide.
Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.
Source: DKS Associates 2018

Table CU-25a: Cumulative Plus Jackson Corridor Projects Intersection Impacts and Mitigations - Impacts Triggered by Mather South

Intersection		Traffic Control		Super Cumulative Plus Jackson Corridor Projects Lane Geometrics				County Standard Mitigated Super Cumulative Plus Jackson Corridor Projects Lane Geometrics				LOS Impact with Mitigation?
		Super Cumulative Plus Jackson Corridor Projects	Mitigated Super Cumulative Plus Jackson Corridor Projects	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
51	Mather Field Road & Rockingham Drive	Signal	Signal									Yes
58	Zinfandel Drive & Douglas Road	Signal	Signal									No
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Two-way stop	Signal									Yes
67	Sunrise Boulevard & Douglas Road	Signal	Signal									Yes
69	Sunrise Boulevard & Kiefer Boulevard	Signal	Signal									No
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Rd/Grant	Signal	Signal									Yes
76	White Rock Road & Prairie City Road	Signal	Signal									Yes
93	Grant Line Rd & Driveway/Wilton Rd	Signal	Signal									Yes

Notes: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.
1. High capacity intersections are defined in the Sacramento County General Plan and may include grade separations, additional turn lanes, and/or other features as deemed appropriate by the County.
2. Alternative mitigations represent proposed mitigations beyond the General Plan or standard intersection geometry, excluding high capacity intersections, as proposed by the County of Sacramento.
Source: DKS Associates 2018

Table CU-25b: Cumulative Plus Jackson Corridor Projects Intersection Impacts and Mitigations - Impacts Triggered by Mather South Project

Intersection		Traffic Control		County Standard Mitigated Super Cumulative Plus Jackson Corridor Projects Lane Geometrics				Ultimate Mitigated Super Cumulative Plus Jackson Corridor Projects Lane Geometrics				LOS Impact with Mitigation?	High Capacity Intersection?[1]	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
		Super Cumulative Plus Jackson Corridor Projects	Mitigated Super Cumulative Plus Jackson Corridor Projects	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach				
51	Mather Field Road & Rockingham Drive	Signal	Signal									Yes	No		Existing development
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Rd/Grant	Signal	Signal					Grade Separate				No	No		
76	White Rock Road & Prairie City Road	Signal	Signal					Grade Separate				No	Yes		
93	Grant Line Rd & Driveway/Wilton Rd	Signal	Signal									No	No	Dual SBL, Dual WBL, Dual WBR	

Notes: Gray shading represents changes in traffic control or approach lanes for which the project is responsible to pay a fair share.
1. High capacity intersections are defined in the Sacramento County General Plan and may include grade separations, additional turn lanes, and/or other features as deemed appropriate by the County.
2. Alternative mitigations represent proposed mitigations beyond the General Plan or standard intersection geometry, excluding high capacity intersections, as proposed by the County of Sacramento.
Source: DKS Associates 2018

Implementation of Mitigation Measure CU-TR-6 would result in fair share payment toward improvements that would reduce the impacts of the Mather South Project as shown in **Table CU-24a** and **Table CU-24b**. However, as shown in **Table CU-25a** and **Table CU-25b**, it cannot be guaranteed that all of these improvements would be implemented concurrent with the phasing of development proposed for the Mather South Project because of the dynamic and interrelated nature of mitigation improvements that would serve multiple development projects. If all improvements were implemented in a timely way, all impacts would be reduced to a less-than-significant level. However, because the timing of implementation of all required improvements cannot be guaranteed and is not subject to the sole responsibility of just Mather South applicants and the County, it cannot be guaranteed that significant impacts to intersection would be reduced to a less-than-significant at the time of development. Therefore, the project would have a **considerable contribution** to **significant and unavoidable** cumulative intersection impact.

Freeway Facility Impacts Cumulative Plus Mather South Project

Cumulative Freeway Segments Cumulative Mather South Project

Table CU-14 summarizes a.m. and p.m. peak hour US 50 freeway mainline operations under the Cumulative Plus Mather South Project scenario. Detailed freeway mainline operations calculations are included in Appendix TR-1. As shown in **Table CU-14**, with implementation of the Mather South Project, the Caltrans' threshold of significance (5 percent V/C increase) would not be exceeded along any of the freeway segments analyzed.

Cumulative Freeway Ramp Intersection Queuing Cumulative Mather South Project

Table CU-15 and Table CU-16 summarizes a.m. and p.m. peak hour freeway ramp intersection queuing under the Cumulative Plus Mather South Project scenario. Detailed freeway mainline operations calculations are included in Appendix TR-1. As shown in **Table CU-15**, implementation of the Mather South Project would result in freeway ramp intersections experiencing vehicle queues that would extend into the ramp's deceleration area, onto the freeway, or queues greater than the available storage capacity.

Due to the addition of traffic to freeway ramp intersections in the study area generated by the Mather South Project, the following location would experience queues that exceed the available storage capacity:

- Westbound
- Exit ramp to Rancho Cordova Parkway - left turn queue length exceeds available storage

Cumulative Freeway Merge / Diverge / Weave Segments Cumulative Mather South Project

Table CU-17 summarizes a.m. and p.m. peak hour freeway operations at merge/diverge/weave segments under the Cumulative Plus Mather South Project scenario. Detailed merge/diverge/weave data and analysis is included in Appendix TR-1. As shown in **Table CU-17**, with implementation of the Mather South Project, none of

the merge/diverge/weave segments would experience merge / diverge LOS worse than the freeway's LOS.

In summary, because the addition of Mather South Project traffic to the freeway facilities in the study area would result in freeway ramp intersections experiencing vehicle queues greater than the available storage capacity, the project would have a considerable contribution to a significant cumulative freeway impact**.**

MITIGATION MEASURES

CU-TR-7: Freeway Capacity Improvements

The project shall implement Mitigation Measure CU-TR-3.

Implementation of Mitigation Measure CU-TR-7 would result in fair share payment toward improvements that would reduce the impacts of the Mather South Project on freeway facilities. However, the amount by which these improvements would improve operating conditions at the facility detailed above are unknown at this time; thus, if implemented it cannot be assured that the implementation of CU-TR-7 would improve operating conditions to acceptable levels at the affected facility. Additionally, because effect of the improvement is outside of Sacramento County's jurisdictional control, and while the appropriate jurisdictions can and should implement feasible mitigation to reduce impacts, it cannot be guaranteed that this improvement would be implemented or implemented in time for project development. Therefore, this impact would remain significant. The project would have a **considerable contribution** to a **significant and unavoidable** cumulative freeway impact.

CUMULATIVE ROADWAY FUNCTIONALITY IMPACTS CUMULATIVE MATHER SOUTH PROJECT

Table CU-26 summarizes the results of the rural roadway segment functionality analysis under Cumulative Plus Mather South Project conditions. This table includes the number of lanes assumed with the implementation of the Mather South Project, which in many cases is greater than the number of lanes in the existing condition. The shaded table cells under the "Travel Lanes" heading illustrates new roadways and widened roadways that are assumed part of the Mather South Project. The "Substandard" heading indicates whether or not a roadway meets the County standards of 12-foot lanes and 6-foot shoulders. If the project makes improvements to a roadway segment such as widening, it would be required to reconstruct the entire substandard roadway segment to County standards. The shaded table cells under the "Functionality Impact" heading indicate those locations with a functionality impact.

As stated above and in Chapter 17, "Traffic and Circulation," the traffic analysis assumed that the Jackson Corridor Projects would construct several travel lanes on roadway segments that are internal to, or on the boundary of the Jackson Corridor Projects, and the entire roadway segment would be reconstructed to County standards at that time. The timing of implementation of such additional traffic lanes on these internal or boundary roadway segments will affect whether impacts would exist at some time before full build out of the Mather South Project.

Table CU-26: Cumulative Plus Jackson Corridor Projects Functionality Impacts Triggered by Mather South Project

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				CEQA Cumulative + FOUR PROJECTS			
		From	To		Travel Lanes	Pavement (ft)	Substandard?[1]	Existing Volume	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact?[2]
15	Douglas Rd	Mather Blvd	Zinfandel Dr	County	2	23	Yes	6,635	4	Arterial M	33,390	Yes[3]
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	Rancho Cordova/County	2	23	Yes	8,369	6	Arterial M	50,360	Yes[3]
25	Elder Creek Rd	South Watt Ave	Hedge Ave	County	2	23	Yes	5,576	4	Arterial M	52,900	Yes[3]
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	County	2	23	Yes	5,797	4	Arterial M	33,660	Yes[3]
33	Excelsior Rd	Florin Rd	Gerber Rd	County	2	<21	Yes	5,423	2	Arterial M	13,080	Yes
39	Florin Rd	South Watt Ave	Hedge Ave	County	2	22	Yes	7,718	4	Arterial M	12,010	Yes[3]
40	Florin Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	6,312	4	Arterial M	13,280	Yes[3]
41	Florin Rd	Mayhew Rd	Bradshaw Rd	County	2	22	Yes	6,317	4	Arterial M	40,200	Yes[3]
43	Florin Rd	Excelsior Rd	Sunrise Blvd	County	2	22	Yes	3,835	2	Arterial M	17,090	Yes
50	Grant Line Rd	White Rock Rd	Douglas Rd	Rancho Cordova/County	2	22	Yes	7,189	4	Arterial M	41,130	Yes[3]
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	County	2	22	Yes	4,618	6	Arterial M	50,960	Yes[3]
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	County	2	22	Yes	656	3	Arterial M	39,820	Yes[3]
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	County	2	<21	Yes	2,848	4	Arterial M	22,250	Yes[3]

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

Red text with light gray shading indicate project impacts.

1. Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.
2. Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.
3. The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.
4. Excluding the roadway segment that is within the developed community of Independence at Mather.
5. The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Source: DKS Associates 2018

As shown in **Table CU-26**, the implementation of the Mather South Project would result in functionality impacts along 13 roadway segments within the project study area. Therefore, the project would have a considerable contribution to a significant cumulative impact.

MITIGATION MEASURES

CU-TR-8. Roadway Functionality Improvements

> The project applicant shall implement Mitigation Measure CU-TR-4. This mitigation would require the project applicant to pay their appropriate fair share contribution toward the construction of the improvements summarized in **Table CU-27**.
>
> Proposed improvements include widening the deficient rural roadway segments shown in **Table CU-27** to County standards. **Table CU-27** summarizes the proposed improvements of widening the deficient rural roadway segments to County standards, and the resultant functionality analysis for these roadway segments with these improvements implemented.

Implementation of Mitigation Measure CU-TR-8 would result in fair share payment toward improvements that would reduce the impacts of the Mather South Project as shown in **Table CU-27**. However, it cannot be guaranteed that all of these improvements would be implemented concurrent with the phasing of development proposed for the Mather South Project because of the dynamic and interrelated nature of mitigation improvements that would serve multiple development projects. If all improvements were implemented in a timely way, all impacts would be reduced to a less-than-significant level. However, because the timing of implementation of all required improvements cannot be guaranteed and is not subject to the sole responsibility of just Mather South applicants and the County, it cannot be guaranteed that significant impacts to roadway segments would be reduced to a less-than-significant at the time of development. Therefore, the project would have a **considerable contribution** to **significant and unavoidable** cumulative roadway functionality impact.

Table CU-27: Cumulative Plus Jackson Corridor Projects Functionality Mitigations - Impacts Triggered by Mather South Project

ID	Roadway	Segment		CEQA Cumulative + FOUR PROJECTS				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]		
15	Douglas Rd	Mather Blvd	Zinfandel Dr	4	Arterial M	33,390	Yes[3]	Widen to County standards [5]	No
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	50,360	Yes[3]	Widen to County standards [5]	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	4	Arterial M	52,900	Yes[3]	Widen to County standards [5]	No
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	4	Arterial M	33,660	Yes[3]	Widen to County standards [5]	No
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Arterial M	13,080	Yes	Widen to County standards [5]	No
39	Florin Rd	South Watt Ave	Hedge Ave	4	Arterial M	12,010	Yes[3]	Widen to County standards [5]	No
40	Florin Rd	Hedge Ave	Mayhew Rd	4	Arterial M	13,280	Yes[3]	Widen to County standards [5]	No
41	Florin Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	40,200	Yes[3]	Widen to County standards [5]	No
43	Florin Rd	Excelsior Rd	Sunrise Blvd	2	Arterial M	17,090	Yes	Widen to County standards [5]	No
50	Grant Line Rd	White Rock Rd	Douglas Rd	4	Arterial M	41,130	Yes[3]	Widen to County standards [5]	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	6	Arterial M	50,960	Yes[3]	Widen to County standards [5]	No
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	3	Arterial M	39,820	Yes[3]	Widen to County standards [5]	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	4	Arterial M	22,250	Yes[3]	Widen to County standards [5]	No

Notes: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide. For all roadway segments to be widened, the project is responsible to build the entire roadway to County standards.

Red text with light gray shading indicate project impacts.

1. Substandard rural roads are defined as rural, 2-lane roadway segments with travel lanes narrower than 12 feet and/or roadside shoulders narrower than 6 feet.
2. Functionality impacts are triggered when a substandard rural road increases over a threshold of 6,000 ADT, or for a roadway already above 6,000 ADT, increases by more than 600 ADT.
3. The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.
4. Excluding the roadway segment that is within the developed community of Independence at Mather.
5. The functionality impact is mitigated by improving the roadway to County standards, including widening travel lanes to 12 feet and/or widening or providing paved shoulders to 6 feet.

Source: DKS Associates 2018

WATER SUPPLY

CUMULATIVE SETTING

The Mather South Project would be developed in the eastern Sacramento County, near several other projects including New Bridge, Jackson Township, and West Jackson. The portion of the county where these projects would be developed is largely rural and sparsely developed. The Sacramento County Water Agency (SCWA) provides water supply and maintains infrastructure in the Zone 40/41 area which serves the Mather South Plan Area. Regional water infrastructure is present near the Plan Area. Cumulative water supply impacts would be less than significant.

CUMULATIVE IMPACTS EVALUATION

As described in Chapter 18, Water Supply, SCWA has been planning for and implementing regional water supply infrastructure upgrades in the Zone 40/41 area which serves the Mather South Plan Area and vicinity. As a result, the SCWA Water Supply Master Plan (WSMP) has been concurrently developed to address the sufficiency of water supply for the West Jackson, Jackson Township, and New Bridge projects. Additionally, the Water Supply Improvement Plan (WSIP) has been prepared to address specific infrastructure needs in the area. The 2016 WSIP develops the future water demands of Zone 40 assuming that the proposed Mather South, West Jackson, Jackson Township, and New Bridge projects are approved and proceed (SCWA 2016).

SCWA has included the project and other anticipated projects including (the Four Projects) in the build-out scenario for future water demands. Table CU-28 provides a summary and schedule of the SCWA's planned water supply projects that are planned through 2040 to meet projected water demand.

Table CU-28: Planned SCWA Water Supply Expansion Projects

Expected Future Water Supply Projects or Programs		
Name of Future Projects or Program	Implementation Year	Expected Increase in Water Supply to Agency, ac-ft/yr
Phase A NSA Project	2020	9,000
Disconnection of Anatolia GWTP	2020	-4,000
Phase B NSA Project	2025	27,000
Poppy Ridge GWTP Expansion	2025	4,000
West Jackson GWTP	2035	10,000
Big Horn GWTP Expansion	2035	5,000

Source: SCWA 2016, WSIP

Notes: These projects will expand infrastructure capacity to allow SCWA to utilize more of its available water supplies. The expected increase in supplies includes supply for the wholesale customers. The retail and wholesale breakdown of the supplies from each project is not specifically known.

Therefore, the Mather South Project would not result in a considerable contribution such that a new significant cumulative impact related to water supply would occur. The project's cumulative impacts would be **less than significant**.

ENERGY

CUMULATIVE SETTING

The geographic area considered for cumulative impacts regarding energy use is Sacramento County and the service areas for SMUD and PG&E. SMUD and PG&E both employ programs and mechanisms to support provision of services for new developments to be built within their service territory. The most common mechanism includes connection fees to recoup the cost of infrastructure required to service new developments through standard billing services. Additionally, energy efficiency, power management strategies, and conservation measures, reducing energy demand in existing development can serve to reduce additional energy infrastructure and services required for new development.

Sacramento County is currently processing four specific and community master plans within the Jackson Road corridor each of which is undergoing a separate evaluation for environmental impacts. Build out of the plans, if approved, would occur across a 20-plus year horizon. The projects include the Newbridge Specific Plan, the West Jackson Highway Master Plan, the Jackson Township Specific Plan, and the Mather South Community Master Plan. The total impact of these plans would result in the development of over 9,247 acres and would include at least 27,425 dwelling units, and over 20 million square feet of commercial, retail, office, and other nonresidential uses. In anticipation of the increased energy demand that would result from the implementation of these plans, the following new electrical infrastructure would be required to serve all four developments combined:

- One new bulk substation: Jackson Bulk Electrical substation;
- Eight project-specific distribution substations located on-site throughout the plan areas;
- Two expanded project-specific distribution substations within the West Jackson Master Plan Project area; and
- Ancillary infrastructure including on-site and off-site distribution, sub-transmission, and connections to existing transmission lines in the area.

The above infrastructure would be needed to provide adequate service for the development of each new community while continuing to maintain adequate service levels for the existing development within the area. The bulk electrical substation and off-site transmission and sub-transmission lines are not specific to any one of the projects but are needed to meet the cumulative needs for all the projects in combination with existing development.

Based on the size and land uses included within each project, SMUD has estimated the following future energy demand:

- Mather South Community Master Plan - 27 megawatts (MW)
- Jackson Township Specific Plan - 44 MW
- NewBridge Specific Plan - 21 MW
- West Jackson Highway Master Plan - 223 MW

Electrical Infrastructure Needs

Distribution Substations

The following description generally summarizes the requirements for new SMUD distribution substations, such as those that will be located within each of the specific and community master plan areas. While exact design specifications are not available, this summary provides a good faith effort at evaluating the size, capacity, infrastructure, and design of each of the distribution substations to analyze the potential environmental impacts associated with the infrastructure.

Each of the eight substations would be approximately 1.5 acres in size and would be energized by connecting to 69,000 volts (69 kV) subtransmission lines that are supplied by the proposed Jackson Bulk Substation (described in detail below) and existing SMUD Bulk Substations. Bulk substations typically step-down transmission line voltage of 230,000 volts (230 kV) to subtransmission voltage of 69 kV through power transformers. The distribution substations would in turn step down the electricity supply to 12,000 volts (12 kV) for delivery to residential neighborhoods. Each distribution substation would include up to two transformers, eight capacitor banks, two backup battery systems, two metal clad switchgears, and two poles with a disconnect switch. Substations will require an access road of at least 20-feet wide if the access roads are straight, and 24-foot wide if there are turns. The distribution substations would receive electricity from 69-kV sub-transmission lines. SMUD's standard construction for sub-transmission lines is overhead construction with poles that if pole-mounted would be approximately 65-feet tall. The distribution substations would distribute electricity via underground and/or overhead 12-kV lines to neighborhoods. Permanent utility easements would be required. Construction of the distribution substations would occur over a 1-year period.

Specific and Community Plan Infrastructure

The following section describes the existing and required electrical infrastructure that would be required within each of the four specific and community master plan areas. The approximate locations of the proposed new electrical infrastructure are illustrated on Plates EN-1 Proposed Substation Locations and Plate EN-2, Proposed Subtransmission Lines. Additional 69-kV routes may be required depending upon the final locations of the new distribution substations.

Mather South Community Plan Area

The Mather South Community Plan Area would require one new distribution substation and is proposed to be in one of two site options. Location A would be in the center of the Plan Area within COMM1 land use designation and would receive the 69-kV sub-

transmission line along the east side of Zinfandel Drive. Location B would be located on the eastern side of the Plan Area within R17a and receive the 69-kV sub-transmission line along the east side of the Regional Bike Trail on the west side of the Folsom South Canal.

There is one existing 69-kV subtransmission line east of Sunrise Boulevard, and the cumulative projects would require three new 69-kV subtransmission routes within the project, including one along the north side of Douglas Road, one along the east side of Zinfandel Drive or the east side of the Regional Bike Trail, and one along Kiefer Boulevard.

JACKSON TOWNSHIP SPECIFIC PLAN AREA

The Jackson Township Specific Plan Area would require one new distribution substation near Jackson Road and Tree View Lane. There are four existing 230-kV transmission lines in an easement that runs along the southeasterly portion of the Jackson Township plan area. Two of the lines are owned by SMUD and two are owned by PG&E. The cumulative projects would require three new 69-kV sub-transmission routes within the project, including one along Kiefer Boulevard, one along Jackson Road, and one along Excelsior Road.

NEW BRIDGE SPECIFIC PLAN AREA

The New Bridge Specific Plan Area would require one new distribution substation west of the Folsom South Canal or the expansion of the existing SMUD distribution substation in the P/QP parcel (S-60) at the northwest corner of Jackson Road and Sunrise Boulevard. The determination of constructing a new distribution substation or expanding the existing distribution substation is dependent on construction constraints at the time of development. If a new distribution substation is constructed, the existing distribution substation will be removed after the new location is in service. The four 230-kV transmission lines described above also traverse the New Bridge Plan area in an easement that runs along the north central portion. There are additionally, two existing 69-kV sub-transmission lines in the plan area, one located along the north side of Jackson Road and one on the east side of Sunrise Boulevard. The cumulative projects would require two new 69-kV sub-transmission routes within the project area, including one on the west side of Eagles Nest Road between Jackson Road and Kiefer Boulevard, and one on the south side of Kiefer Boulevard between the western New Bridge plan boundary and Sunrise Boulevard.

WEST JACKSON HIGHWAY MASTER PLAN AREA

The West Jackson Highway Master Plan Area project would require the expansion of two existing distribution substations, one on the east side of Happy Lane south of Old Placerville Road and one along the west side of Mayhew and north of Jackson Road. The expansion of these distribution substations would result in impacts to the adjacent parcels, which will be evaluated in detail in the West Jackson Highway Master Plan EIR.

The project would also require four new distribution substations, near Fruitridge Road and Hedge Avenue; Jackson Road and Vineyard Road extension; Fruitridge Road and Bradshaw Road; Excelsior and Kiefer Boulevard; and Florin Road and Vineyard Road.

The project may also result in the removal of an existing distribution substation if no longer required by the existing customer, near Kiefer Boulevard and Bradshaw Road.

The four existing 230-kV transmission lines that are located south of Jackson Road and described above, also run along the northern portion of the West Jackson Highway Master Plan area. The cumulative projects would require seven new 69-kV sub-transmission lines, including one along Kiefer Boulevard, one along Happy Lane, one along Jackson Road, one along Vineyard Road, one along Bradshaw Road, one along the east/west road between Bradshaw Rd and Vineyard Road, and one along Hedge Avenue.

JACKSON BULK SUBSTATION

As noted above, because of the cumulative anticipated growth along the Jackson Road corridor, SMUD would require the construction and operation of a new bulk substation. The following description summarizes the general components and requirements for a new SMUD bulk substation, such as the Jackson Bulk Substation. While exact design specifications are not available, this summary provides a good faith effort at evaluating the size, capacity, infrastructure, and design of the project to analyze the potential environmental impacts associated with the project. The description of electrical infrastructure is largely derived from SMUD's recent Franklin Bulk Substation project.

The project would result in the construction and operation of a new bulk transmission substation, modify existing and construct new overhead 69-kV sub-transmission and make connections to existing 230-kV transmission lines that would link the distribution substations to the electrical grid. Project features would include the development of the Jackson Bulk Substation, up to eight new distribution substations located within nearby master plan areas (as described above), and sub-transmission lines.

BULK SUBSTATION LOCATION

SMUD would require the dedication of approximately 22 acres of land north of the existing Cordova-Hedge and Cordova-Pocket 230-kV transmission lines that are located within a utility easement south of Jackson Road. The two potential locations are shown on Plate EN-1.

Option 1 is located adjacent to the southeast corner of Jackson Road and Excelsior Road and is not located within any of the four proposed master plan projects discussed above. It is located within parcels APN 067-0050-039-0000 and 067-0050-040-0000. The parcels also include two single-family, detached homes and is designated as AG-160 (Agricultural-160 Acres). There are two retention ponds on the site which are designated wetlands and included in the U.S Fish and Wildlife National Wetland Inventory. The substation location for Option 1 is located approximately 680 feet north of the nearest sensitive receptors. The site is located directly south of Jackson Road and north of two SMUD 230-kV transmission lines, and two PG&E lines, that run

through the proposed south-easterly portion of the West Jackson Highway Master Plan development area.

Option 2 is located approximately 2,000 feet south of Jackson Road and 2,000 feet west of Excelsior Road and is within the project boundary of the West Jackson Highway Master Plan. This location is within a civic/employment designated portion of the master plan.

BULK SUBSTATION INFRASTRUCTURE

BULK SUBSTATION

The bulk substations would step down transmission line voltage of 230 kV to subtransmission voltage of 69 kV for distribution to distribution substations located within the four community and masterplan areas. The bulk substation area would be graded and partially covered in crushed gravel, except where concrete foundations for the control building, transformers, circuit breakers and other equipment, oil containment, metal clad switchgear, and paved access roads would be built.

The main components of a bulk substation are the power transformers, steel structures, switches, control and relay equipment, circuit breakers, capacitor banks, electrical busses, cables and control building. Each power transformer would be approximately 35-feet tall, would contain approximately 25,000 to 30,000 gallons of insulating mineral oil. The maximum average sound level for each transformer would not exceed 80 decibel A-weighting (dBA) measured at a distance of 6-feet around the periphery of the transformer.

The bulk substation would also include circuit breakers and circuit switchers to receive and distribute electricity. Circuit breakers would be approximately 25-feet tall and would contain sulfur hexafluoride (SF_6) or other insulating medium. Sound levels would not exceed 140 decibels measured at 50-feet around the perimeter of the circuit breaker. Noise generated by the circuit breaker is typically intermittent.

The bulk substation also includes pad-mounted transformers which will contain approximately 85 gallons of insulating oil, which is typically natural ester oil, which is non-toxic and biodegradable. The bulk substation would also include battery systems using lead acid, which would be located inside the control building. Other optional electrical components may be included which utilize mineral oil for insulating.

ELECTRICAL BUS

The bulk substation would include a network of steel structures that would support equipment, electrical buses, varying in height from approximately 16 to 80 feet tall. The electrical bus would support equipment such as insulators and would support overhead conductors entering the bulk substation from the interconnecting transmission and sub-transmission overhead lines.

CONTROL BUILDING

The bulk substation would include a control building up to 50 feet high. The control building would be constructed with masonry block, concrete, or steel walls. The control building would include a restroom for employees and would be connected to municipal water and sewer if available.

ACCESS ROAD

The bulk substation would require two access roads of at least 20-feet wide if the access roads are straight, and 24-feet if there are turns.

BULK SUBSTATION FENCING, LANDSCAPING, AND LIGHTING

To maintain security and public safety, a minimum 10-foot fence would be installed around the perimeter of the bulk substation site. SMUD would work with Sacramento County to determine the most appropriate landscaping and screening improvements. Lighting would be included as required by the National Electrical Safety Code for substation operation. The installed lighting system would be designed for purposes of nighttime operations and maintenance and would be oriented to minimize glare onto surrounding property.

TRANSMISSION LINES

Transmission and subtransmission lines would be required to receive electricity from the grid at the Jackson Bulk Substation and distribute to the distribution substations. The receipt and distribution of electricity along electrical lines would require the dedication of a utility easement. Receipt of electricity from the grid would occur by connecting the Jackson Bulk Substation to the two SMUD 230-kV transmission lines. To make these connections, SMUD would install new steel poles up to 130-feet tall to the location of the new bulk substation. The number of new transmission poles needed would be determined by the distance between the new bulk substation and the existing transmission line right of way. Two poles at a minimum would be required. Distribution of electricity would occur across existing and new 69-kV wood or steel sub-transmission lines approximately 65 tall or along underground lines. The additional cost of underground 69-kV sub-transmission would be borne by the applicant requesting the facilities be installed underground and would require a feasibility study.

CONSTRUCTION, OPERATION, AND MAINTENANCE

Construction of the Jackson Bulk Substation would occur over approximately two years, in typical construction phases. During normal operations, the bulk substation would be operated remotely and continuously. Bulk substation maintenance would occur on a regular basis from two to four times per month for internal inspections and four times per year for perimeter maintenance. Major maintenance would occur about once every three years.

CUMULATIVE IMPACTS SUMMARY

Implementation of the four proposed specific and community master plans would result in a substantial increase in the regional demand for energy and the subsequent need to

develop new supportive infrastructure (i.e., one bulk substation, eight distribution substations, two expanded distribution substations, transmission lines, sub-transmission lines, and accessory infrastructure). As shown in Plate EN-1, all new project-specific distribution substations would be located within the project boundaries of their associated maps, with the exception of the expanded distribution substations required by the West Jackson Highway Master Plan Project. The Jackson Bulk Substation (bulk substation) and ancillary facilities would be located off-site for some or all facilities. Should Option 1 be selected for the bulk substation, it would be located off-site for the four master plans. For infrastructure located within project boundaries, impacts would be addressed as direct impacts within the appropriate resource areas within each project's EIR. However, because in most cases Option 1 and Option 2 would not be located within project boundaries of the four proposed master plan projects discussed above, an evaluation of cumulative impacts associated with each location is provided below. Table CU-29 includes an evaluation of the potential impacts of the new bulk substation if it were to be developed in either location. This analysis is programmatic in nature; a more detailed CEQA analysis will be performed by SMUD prior to construction of any of the proposed substations which will determine the environmental impacts and respective mitigation measures.

Table CU-29: Summary of Potential Environmental Impacts from Jackson Bulk Substation Construction and Operation

Affected Resources	Potential Impacts
Aesthetics and Visual Resources	The aesthetic and visual characteristics of the proposed sites for Option 1 and 2 are similar and are characterized by grassland, rural residential homes, and agricultural land uses. The surrounding area is currently relatively rural, but with implementation of the Jackson Bulk Substation, eight distribution substations, and proposed community and master plan projects, would gradually transition to an urbanized community. The proposed bulk substation would be typical of other bulk substations in the region and would include a two-story control building, transformers (approximately 35-feet tall), power circuit breakers (approximately 25-feet tall), a network of steel structures to support electrical equipment (up to 100-feet tall), and overhead conductors entering the substation from the interconnecting sub-transmission and transmission overhead lines (up to 130-feet tall). Project construction would temporarily disrupt the existing visual environment as project materials would be staged and workers would be present on-site during the construction phase which would be approximately two years. However, these changes in the existing visual environment would be temporary, and consistent with the overall change to existing visual context in the Jackson Road corridor because of multiple large proposed master plans. Under both options, the bulk substation would be located adjacent to urbanizing areas and Jackson Highway, and would be typical of supportive urban infrastructure seen in the community. The overall visual transformation of the surrounding areas is addressed in the project-specific visual resources chapter of this EIR and is inclusive of supporting infrastructure needed to support the community. As described therein, the Franklin Bulk Substation MND concluded that the project would result in less than significant impacts. No scenic resources nor scenic vistas are located on or adjacent to the sites or nearby for either Option 1 or Option 2. While development of the bulk substation would result in the visual transformation of the site from a rural character to urban

Affected Resources	Potential Impacts
	infrastructure, its development would be completed in concert with the overall urbanization of the surrounding area such that construction of this facility would not result in the substantial degradation of views of the site. As described above, nighttime lighting would be included for safety and maintenance purposes but would be shielded and directionally controlled to prevent impacts to nearby sensitive land uses. Overall, the project would not result in a considerable contribution to a new significant cumulative impact related to visual resources. Cumulative impacts would be **less than significant**.
Air Quality	Construction of the Jackson Bulk Substation and related infrastructure components under Options 1 and 2 would involve the use of off-road heavy-duty construction equipment. Construction of the bulk substation would be typical of construction activity for the project type and size. Use of this equipment during various construction phases would result in emissions of fugitive dust, diesel particulate matter, and other criteria air pollutants. It is anticipated that certain phases in the construction of the substation may result in fugitive dust emissions and criteria air pollutants which exceed applicable standards set by the Sacramento Metropolitan Air Quality Management District (SMAQMD). Given the proximity of both Option 1 and Option 2 to existing sensitive receptors, the use of construction equipment may also expose sensitive receptors to substantial pollutant concentrations. As a result, construction activity associated with bulk substation construction could result in significant air quality impacts. Construction of the bulk substation would be the responsibility of SMUD and would not be subject to the control of the County. Nonetheless, SMUD would be responsible for implementing appropriate mitigation developed in consultation with regulatory agencies to mitigate air quality impacts. Such mitigation could include construction practice and equipment limitations and renewable energy features. With implementation of mitigation, project-related impacts associated with the bulk substation could be reduced to a less-than-significant level. Mitigation Measure CU-2 below is recommended to reduce the project's contribution to impacts, specifically a reduction in fugitive dust emissions through the implementation of Fugitive Dust Control Plan during project construction. Mitigation Measure CU-3 below is recommended to reduce the project's contribution to impacts, specifically NO_X emissions during project construction through the implementation of NO_X reduction measures. However, even with implementation of this mitigation, cumulative construction-related air quality impacts could result in emissions above SMAQMD's thresholds for certain pollutants and, therefore, cumulative impacts would remain considerable and significant and unavoidable. Operation of the bulk substation under Option 1 or 2 would result in emissions associated with routine maintenance tasks including worker commute trips and the use of maintenance equipment, as needed. Similar to existing facilities such as the Franklin Bulk Substation, emissions during operations would be limited over the lifetime of the project and no permanent staff would be expected to be stationed at the facility. Therefore, no significant operational impacts would be expected, and this would not result in a considerable contribution to a significant cumulative impact. Cumulative impacts related to operations would be **less than significant**.
Biological Resources	The site for Option 1 includes two, single-family, detached homes on large lots which are surrounded by grassland habitat. There are also two retention ponds located within the parcel that are designated wetlands and could be disturbed during construction. The site for Option 2 is located within the project boundary of the West Jackson Highway Master Plan and consists of grassland habitat. Disturbance of special-status plant species and wildlife as well as their habitats

Affected Resources	Potential Impacts
	could occur because of construction activities for the development of either Option 1 or Option 2. The total area of disturbance for development of the bulk substation would be a maximum of approximately 22 acres. This would not be a significant biological impact due to the extent of existing development on the Option 1 site, and the relatively small scale of the bulk substation in comparison to other larger development projects. Construction of the substation would be the responsibility of SMUD and would not be subject to the control of the County. Nonetheless, SMUD would be responsible for implementing appropriate mitigation developed in consultation with resource agencies to mitigate the impacts to special-status species and their habitats. Mitigation Measure CU-4 General Construction Measures, Mitigation Measure CU-5 Pre-Construction Surveys, Mitigation Measure CU-6 Avoid Disturbance or Harm to Wildlife Species below is recommended to reduce the project's contribution to construction-related impacts. However, even with implementation of the mitigation measures listed above cumulative construction-related impacts would remain **considerable and significant and unavoidable**. Development of the project would contribute to the loss of biological resources within the region, but due to the relatively small amount of anticipated impacts this is not a considerable contribution to a significant cumulative biological resources impact. Mitigation Measure CU-7, Clean Water Act Permitting, and Mitigation Measure CU-8, Compensate for Permanent Loss of Wetlands below is recommended to reduce the project's contribution to this impact.
Cultural Resources	Construction activities for the development of the Jackson Bulk Substation and related infrastructure under Option 1 or Option 2 would involve ground disturbance, grading, and trenching activities that could result in the uncovering of previously undiscovered cultural resources on the site. Mitigation Measures CU-9 and CU-10 are recommended to minimize the potential for the project to result in potential impacts on cultural resources. With mitigation, the project would not result in a considerable contribution to a significant cumulative impact. Cumulative impacts would be **less than significant**.
Geology and Soils	Construction activities for the development of the Jackson Bulk Substation and related infrastructure under Option 1 or Option 2 would involve ground disturbance, grading, and trenching activities that could result in activities which expose soils and result in accelerated erosion. Construction activity could result in the movement of soils to other locations on the project site to assist in the leveling the site. Because the project would disturb more than one acre of ground surface, the project would be required to comply with the Sacramento County Land Grading and Erosion Control Ordinance (Sacramento County Code Ch. 16.44). The ordinance establishes administrative procedures, minimum standards of review, and implementation and enforcement procedures for the control of erosion and sedimentation that are directly related to land grading activities. In addition to complying with the County's ordinances because the construction site would disturb more than one acre, it would be required to comply with the State's General Stormwater Permit for Construction Activities, which is Mitigation Measure CU-11. The Construction General Permit is issued by the State Water Resources Control Board and enforced by the Regional Board and requires preparation and implementation of a site-specific Stormwater Pollution Prevention Plan (SWPPP) that must always be kept on site for review by the State inspector. As such, the project would not result in substantial soil erosion or the loss of topsoil and would not contribute considerably to a significant cumulative impact. Cumulative impacts would be **less than significant**.

Affected Resources	Potential Impacts
Greenhouse Gas Emissions	Operation of the Jackson Bulk Substation under Option 1 or 2 would result in GHG emissions associated with routine maintenance tasks including worker commute trips and the use of maintenance equipment, as needed. Similar to existing facilities such as the Franklin Bulk Substation, GHG emissions during operations would be limited over the lifetime of the project and no permanent staff would be expected to be stationed at the facility. Construction of the project and related infrastructure components under Option 1 or Option 2 would involve the use of off-road heavy-duty construction equipment resulting in GHG emissions and vehicle miles associated with construction worker commute trips. The full design and construction details for the bulk substation are not known at this time. However, the Franklin Bulk Substation, which is similar in size to the Jackson Bulk Substation, resulted in 1,230 $MTCO_2e$ during the initial year of construction. Based on similar size of the Jackson Bulk Substation, GHG emissions during the initial year of construction could potentially exceed SMAQMD's significance threshold of 1,100 $MTCO_2e$/year for construction activity. Therefore, implementation of Mitigation Measure CU-12 (described below) is suggested to reduce construction-generated GHG emissions to below 1,100 $MTCO_2e$/year. With implementation of the Mitigation Measure CU-12, the project would not result in a considerable contribution to a significant cumulative impact. Cumulative impacts would be **less than significant**.
Hazards and Hazardous Materials	Construction of the Jackson Bulk Substation and related infrastructure components under Option 1 or Option 2 would involve the transport and use of hazardous materials. These include mineral oil used to insulate transformers which would be in sealed transformer equipment, substation battery backup systems, containing liquid sulfuric acid, which would be in sealed cases, and petroleum products for use in construction equipment. As part of the SWPPP required for the project, a Spill Prevention and Response Plan (SPRP) would be implemented and would include action measures to minimize the potential release of hazardous materials into the environment. Mitigation Measures CU-13, CU-14, and CU-15 are suggested to ensure impacts of a potential release of hazardous materials into the environment are reduced to the largest degree possible. Mitigation Measure CU-13 requires environmental training on BMPs which would be employed for phases of construction in which hazardous materials are encountered. Mitigation Measure CU-14 requires the development of a Hazardous Substance Control and Emergency Response Plan. The plan would include BMPs for avoiding hazardous materials spills and specific measures to implement if a hazardous materials spill does occur. Operation the substation would require the storage and use of mineral oil onsite for the purpose of insulating the substation transformers. As part of Mitigation Measure CU-15, a Spill Prevention, Control, and Countermeasures (SPCC) Plan would be prepared to identify storage devices and containment measures for spill events. For operation of the project, Mitigation Measure CU-16 is also suggested, which would require the preparation of A Hazardous Materials Business Plan (HMBP), if operation of the Project required the handling or storage of hazardous materials equal to or greater 55 gallons for liquids, 500 pounds for solids and 200 cubic feet (at standard temperature and pressure) for compressed gases. The HMBP would also include an operation specific emergency response plan for the specific type of hazardous materials used on site. Although hazardous material would be used on site, with the implementation of Mitigation Measures CU-13 through CU-15, the risks for the accidental release of hazardous materials into the environment would be reduced such that the project would not result in a considerable contribution to a significant cumulative impact. Cumulative impacts would be **less than**

Affected Resources	Potential Impacts
	significant.
Hydrology and Water Quality	Construction of the Jackson Bulk Substation at Option 1 or Option 2 would result in increased sediment erosion because of ground disturbance associated with activities such as grading, trenching, foundation installation, fence construction, and road improvements. Increased erosion could affect water quality in on-site and offsite water bodies. Substation construction could also result in the degradation of water quality from runoff of petroleum-based products associated with the use of construction equipment. Option 1 contains wetland features and Option 2 contains two retention basins that are identified as freshwater ponds and classified as part of the Palustrine System, which includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, as well as all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 ppt. Substation construction could result in changes in drainage patterns on the site. Substation construction would be required to comply with the Sacramento County Land Grading and Erosion Control Ordinance (Sacramento County Code Ch. 16.44). As discussed in the Geology and Soils section above, because the construction site would disturb more than one acre, it would also be required to comply with the State's General Stormwater Permit for Construction Activities which is issued by the State Water Resources Control Board and enforced by the Regional Board. This permit would require the preparation and implementation of a site-specific Stormwater Pollution Prevention Plan (SWPPP). Based on the results of this permitting process, if deemed applicable, standard erosion control measures would be implemented to protect water quality consistent with Regional Water Quality Control Board (RWQCB) and County requirements. The use of standard control measures through the permitting process, would ensure that substation construction activity would not violate any water quality standards or waste discharge requirements. Implementation of standard construction-related hydrology and water quality measures listed below as well as implementation of Mitigation Measures CU-11, and CU-13 through CU-15 would feasibly reduce this impact. Further, the facility would be designed to meet current State and County stormwater and water quality standards for the operation of the facility such that no significant operational hydrology and water quality impacts would occur. Therefore, the project would not result in a considerable contribution to a significant cumulative hydrology or water quality impact. Cumulative impacts would be **less than significant**.
Noise and Vibration	Construction activities for the development of the Jackson Bulk Substation and related infrastructure under Option 1 or Option 2 would involve the use of off-road heavy-duty construction equipment resulting in noise and vibration levels that could result in impacts on nearby sensitive receptors (e.g., residential land uses). Site construction characteristics would be similar to those in Mather South Community Master Plan (i.e., construction activity occurring in close proximity to sensitive receptors). Existing noise sensitive receptors exists approximately 2,035 feet east of the substation location in Option 1 and within approximately 680 feet south of the project site boundary for Option 2. Construction activities would be intermittent and temporary in nature. Construction activities occurring during the quieter nighttime hours are of particular concern. If construction activities were to occur during the nighttime hours this could result in increased levels of annoyance and potential for sleep disruption to occupants of nearby dwellings. Because details regarding when construction activity would occur, temporary noise impacts may still occur. Construction of the substation would be the responsibility of SMUD and would not be subject to the control of the County. Nonetheless, SMUD would be

Affected Resources	Potential Impacts
	responsible for implementing appropriate mitigation developed in consultation with regulatory agencies to mitigate air quality impacts. As such, construction noise mitigation strategies identified within Mitigation Measure CU-17 are proposed to mitigate substation construction activity on nearby noise sensitive receptors and could feasibly reduce this impact to below a level of significance. In general, this mitigation can and should be implemented by SMUD and would generally include the limitation of construction activity to daytime hours as prescribed in the Sacramento County Noise Ordinance, which are exempt from the County's noise standards. Although this mitigation would help to reduce potential impacts on nearby sensitive receptors, because the full detail of construction activity is not known at this time, including the type and amount of construction equipment to be used as well as when construction activity would occur, noise impacts may still occur. As noted in the Noise Section of this EIR, a 224 mega-volt ampere (MVA) transformer, is estimated to generate a maximum noise level of 80 dBA L_{eq}/L_{50} at 6 feet (SMUD 2016). The exact size of the proposed bulk substation is unknown at this point. For this analysis it is assumed, based on information included in the Noise Section regarding the Franklin Bulk Substation MND (SMUD 2016), the proposed bulk substation would be of a similar size as the Franklin Bulk Substation. The County's zoning designation of the nearest noise sensitive land use is AG-160 (Agricultural-160 Acres). According to Sacramento County Code, Section 6.68.070 (a), this designation is not considered a noise sensitive land use and, therefore, the County daytime and nighttime exterior noise standards would not apply. Although the adjacent noise sensitive land use is not subject to the County's nighttime exterior noise standard, noise sensitive receptors on this property could be affected by operations of the bulk substation depending on its location under either Option 1 or Option 2. If the bulk substation were to generate noise levels of 80 dBA L_{eq}/L_{50} at 6 feet, the substation would not exceed the County of Sacramento's nighttime exterior noise standard of 45 dBA L_{eq}/L_{50} at the location of the nearest sensitive receptor for a (approximately 680 feet from the substation location for Option 2). Such mitigation could include the siting of noise-generating equipment away from sensitive receptors. With implementation of mitigation, project-related impacts would be reduced to below a level of significance. Mitigation Measure CU-16 below is recommended to reduce the project's contribution to a new significant cumulative impact. Cumulative impacts would be **less than significant**.
Transportation	Construction activities for the development of the Jackson Bulk Substation under Option 1 or Option 2 would result in construction-related commute and haul trips that could temporarily increase traffic volumes on local roadways. Construction of the facility would take place over approximately two years and would be temporary. Construction of the bulk substation would be the responsibility of SMUD and would not be subject to the control of the County. Nonetheless, SMUD would be responsible for implementing appropriate construction-traffic measures to ensure adequate access to and from the facility would be maintained. SMUD would also be required to coordinate with the County regarding construction-traffic management plans consistent with the Sacramento County Department of Transportation's Construction Traffic Management Program (Chapter 6 of the County's Project Delivery Manual). Therefore, no significant construction-related traffic impacts would occur. The facility would not require any permanent staff and would only require periodic maintenance. Therefore, this facility would not result in the substantial generation of operational traffic such that significant traffic impacts to local

Affected Resources	Potential Impacts
	roadways and intersections would occur. Overall, the project would not result in a considerable contribution to a significant cumulative impact related to traffic impacts. Cumulative impacts would be **less than significant**.

MITIGATION

Mitigation Measure CU-1 Coordination with SMUD

The project applicant of each of the following Specific and Community Master Plans: Newbridge Specific Plan, the West Jackson Highway Master Plan, the Jackson Township Specific Plan, and the Mather South Community Master Plan shall coordinate with SMUD to identify the timing of construction of the Jackson Bulk Substation and seek to facilitate efficiencies in grading and pre-construction activities as feasible, as a condition of this project

AIR QUALITY

Mitigation Measure CU-2 Dust Control Plans

SMUD shall develop a Fugitive Dust Control Plan (FDCP) for the bulk substation. The FDCP shall be prepared prior to the start of construction activities. Measures to be included in the plan include, but are not limited to, the following:

a. Water all exposed surfaces at least two times daily when soil moisture conditions have the potential to result in dust generation. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.

b. Cover or maintain at least two feet of freeboard space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.

c. Use wet power vacuum street sweepers to remove any visible track out mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.

d. Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).

e. Temporary construction entrances shall be stabilized to control fugitive dust emissions.

f. The FDCP shall identify a designated person or persons to monitor the fugitive dust emissions and enhance the implementation of the measures, as necessary, to minimize the transport of dust offsite and to ensure compliance with identified fugitive dust control measures. Their duty hours shall include holidays and weekend periods when work may not be in progress. The names and telephone numbers of such persons shall be provided to the SMAQMD Compliance Division prior to the start of any grading, or earthwork.

g. Signs shall be posted at the substation site entrance a minimum of 30 days prior to initiation of Project construction. The signs shall include the following information: (a) Project Name; (b) Anticipated construction schedule(s); and (c) Telephone number(s) for designated construction activity monitor(s) or, if established, a complaint hotline. The designated construction monitor shall document and immediately notify SMUD and SMAQMD of any air quality complaints received. If necessary, the contractor will coordinate with SMUD and SMAQMD to identify any additional feasible measures and/or strategies to be implemented to address public complaints.

Mitigation Measure CU-3 NOx Reduction Measures

Consistent with SMAQMD-recommended "basic" and "enhanced" NO_x reduction measures, the following measures shall be implemented during bulk substation construction:

Basic Measures:

a. Minimize idling time of diesel-powered equipment either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [required by California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.

b. Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determine to be running in proper condition before initial use in the project area. Documentation verifying compliance with this measure shall be retained on site and provided to SMAQMD upon request.

c. When leasing equipment, the contractor shall use alternatively fueled equipment (e.g., electric, propane, etc.), in lieu of diesel- or gasoline fueled equipment, whenever possible and to the extent available.

Enhanced Measures:

d. A comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that would be used in aggregate of 40 or more hours during substation construction shall be submitted to the SMAQMD.

- The inventory shall include the horsepower rating, engine model year, and projected hours of use for each piece of equipment.
- The contractor shall provide the anticipated construction timeline including start date, and name and phone number of the project manager and on-site foreman.
- This information shall be submitted at least four business days prior to the use of subject heavy-duty off-road equipment.

- The inventory shall be updated and submitted monthly throughout the duration of the project, except that an inventory shall not be required for any 30-day period in which no construction activity occurs.

e. A plan shall be submitted to the SMAQMD demonstrating that combined emissions from heavy-duty off-road equipment (50 horsepower or more), construction vehicles, and haul truck to be used during substation construction, including owned, leased, and subcontractor vehicles, will achieve NOx reductions sufficient to demonstrate compliance with the SMAQMD's maximum allowable mass emissions threshold of 85 pounds per day (lbs/day) of NOx.

- The plan shall include an inventory of all off-road equipment and haul trucks to be used during construction.
- Acceptable options for reducing emissions may include use of late model engines, low-emission diesel products, alternative fuels, engine retrofit technology, after-treatment products, limitations on the use of off-road equipment and/or haul trucks, changes in construction schedules, the payment of mitigation fees to the SMAQMD, and/or other options as they become available. The SMAQMD's Construction Mitigation Calculator can be used to identify an equipment fleet that achieves this reduction.

f. SMUD shall ensure that emissions from all off-road diesel powered equipment used in the project area do not exceed 40% opacity for more than three minutes in any one hour.

- Any equipment found to exceed 40 percent opacity (or Ringelmann 2.0) shall be repaired immediately.
- Non-compliant equipment shall be documented and a summary provided to SMAQMD monthly. A visual survey of all in-operation equipment shall be made at least weekly.
- A monthly summary of the visual survey results shall be submitted throughout the duration of the Project, except that the monthly summary shall not be required for any 30-day period in which no construction activity occurs. The monthly summary shall include the quantity and type of vehicles surveyed as well as the dates of each survey.

  Once more detailed construction information becomes available, a refined emissions modeling analysis can be performed to determine if all or a portion of the above "Enhanced Measures" should be implemented to demonstrate compliance with SMAQMD's maximum allowable mass emissions threshold of 85 lbs/day of NOx.

  This analysis shall be conducted in accordance with applicable SMAQMD-recommended methodologies.

Biological Resources

Mitigation Measure CU-4 General Construction Measures

The following general construction measures shall be implemented in order to avoid impacts to biological resources during construction of the bulk substation:

- Construction personnel shall minimize the work area footprint and the duration at a work area site, to the extent possible.
- Construction personnel shall use existing paved and unpaved roads to access the work area where present. Vehicles and equipment shall be parked on pavement, existing roads, and previously disturbed areas to the maximum extent feasible.
- Trash dumping, littering, open fires (such as barbecues), hunting, and pets shall be prohibited in work areas.

Mitigation Measure CU-5 Pre-Construction Surveys

The following measures shall be implemented in order to avoid impacts to special-status plants during construction of the bulk substation:

- Pre-construction surveys for special-status plants will be conducted within 250 feet of the Project Area, where access is possible, during the appropriate bloom period for identification.
- If surveys for special-status plants cannot be completed during the appropriate bloom period, topsoil (upper 2-4 inches) in the appropriate habitat for the surveyed specie(s) where ground disturbance will occur will be stockpiled prior to construction and respread after construction in suitable areas
- If any special-status plant species are found in the project area, orange or yellow construction flagging or fencing will be erected to provide a 20-foot -buffer area around the population to prevent encroachment by construction activities, if possible given the location of the population. The fencing will be maintained until construction is complete.
- If any special-status plant species are found in the project area and avoidance is not possible due to the location of the population, SMUD will consult with the appropriate resource agencies (California Department of Fish and Wildlife [CDFW] and/or California Native Plant Society [CNPS]) to develop mitigation and/or compensation measures needed to reduce the impact to a less than significant level.
- Where it is not feasible to avoid special-status plant locations within construction areas, seed collection and transplanting shall be performed for annual plant species in suitable areas.
- If an affected special-status plant is a perennial species, native plant nursery propagation shall be performed as well as planting within suitable areas.
- All special-status plant restoration and planting areas shall be monitored for a minimum of one year.

Mitigation Measure CU-6 Avoid Disturbance or Harm to Wildlife Species

Following preconstruction surveys and initiation of project construction, it is possible that wildlife species could subsequently enter or return to the project area. The following measures will be implemented to avoid disturbance or harm to these species:

- If any special-status species or other wildlife species are observed in the project area during construction, construction will cease until the species is allowed to move out of harm's way on their own accord.
- If they cannot be allowed to move out of harm's way on their own accord, SMUD field crews shall contact SMUD Environmental Management at (916) 732-5836, who will report the sighting to the appropriate agency (USFWS and/or CDFW). SMUD Environmental Management will have authority to stop activities until appropriate corrective measures have been completed or it is determined that the individual will not be harmed. Capture and relocation of trapped or injured species can only be attempted by agency-approved biologists.

Mitigation Measure CU-7 Clean Water Act Permitting

SMUD will obtain relevant CWA permits (Section 404 and 401). Additionally:

- All proposed discharges of dredge or fill material into waters of the U.S. will first be authorized by the United States Army Corps of Engineers (Corps), pursuant to Section 404 of the CWA. All Corps permit conditions will be implemented.
- Pursuant to Section 401 of the CWA, SMUD will obtain Water Quality Certification from the RWQCB for the proposed Project.

Mitigation Measure CU-8 Compensate for Permanent Loss of Wetlands

SMUD will compensate for the permanent loss of wetland habitat through the purchase of mitigation credits at a 1:1 creation ratio from the SMUD Nature Preserve Mitigation Bank or an alternative Corps-approved mitigation bank. This mitigation requirement may be refined or superseded by the terms of the Corps Section 404 permit for the project.

Cultural Resources

Mitigation Measure CU-9: Cultural Resources

SMUD shall complete cultural resource surveys prior to any ground disturbing activities or construction activities associated with the bulk substation. Surveys will be completed prior to any ground disturbing activities or the Project construction activities to inventory and evaluate cultural resources affected by the Project, or affected by any components that might be added to the Project, or any existing components that may be modified

Mitigation Measure CU-10: Cultural Resources: Prepare and implement Archaeological Resource Management and Treatment Plan to address significant or unique archeological resources.

In the case of the inadvertent discovery of a resource that is listed or eligible for listing in the National Register or California Register or of a unique archaeological resource as defined by CEQA, SMUD will have a qualified archaeologist prepare and implement an

Archaeological Resource Management and Treatment Plan that specifies the treatment of the resources. Prior to implementation, this document shall be submitted for review to SMUD as CEQA Lead Agency. This plan shall be tailored to the specific needs of the Project and the particular resources present there. The proposed Archaeological Resources Management and Treatment Plan must minimally address the following:

A general research design shall be developed that:

- Charts a timeline of all research activities.
- Recapitulates any existing paleo-environmental, prehistoric, ethnohistoric, ethnographic, and historic contexts to create a comprehensive historic context for the Project Area.
- Poses research questions and testable hypotheses specifically applicable to the resource types encountered.
- Clearly articulates why it is in the public's interest to address the research questions that it poses.
- Artifact collection, retention/disposal, and curation policies shall be discussed, as related to the research questions formulated in the research design. These policies shall apply to archaeological materials and documentation resulting from evaluation and data recovery of the resource.
- Person(s) expected to perform each of the tasks, their responsibilities, and the reporting relationships between Project construction management and the mitigation and monitoring team shall be identified.
- The manner in which Native American observers or monitors shall be included, the procedures to be used to select them, and their roles and responsibilities shall be described.
- All impact-avoidance measures (such as flagging or fencing) to prohibit or otherwise restrict access to sensitive resource areas that are to be avoided during ground disturbance, construction, and/or operation shall be described. Any areas where these measures are to be implemented shall be identified. The description shall address how these measures would be implemented prior to the start of ground disturbance and how long they would be needed to protect the resources from Project-related impacts.
- The commitment to curate of all archaeological materials retained as a result of the archaeological investigations (survey, testing, data recovery), in accordance with CEQA Lead Agency requirements and the California State Historical Resources Commission's Guidelines for the Curation of Archaeological Collections (HRC 1993), into a retrievable storage collection in a public repository or museum shall be stated.

Geology and Soils

Mitigation Measure CU-11 Storm Water Pollution Protection Plan

SMUD shall prepare and implement a SWPPP that includes erosion control measures and construction waste containment measures to ensure that waters of the U.S. and the State are protected during and after project construction. The SWPPP shall include site design measures to minimize offsite storm water runoff that might otherwise affect surrounding habitats. The SWPPP would also include a Spill Prevention and Response Plan (SPRP) and a construction-specific Hazardous Substance Control and Emergency Response Plan (HSCERP) to minimize the potential for accidental releases of hazardous materials into the environment.

The SWPPP shall be prepared with the following objectives: (a) to identify pollutant sources, including sources of sediment, that may affect the quality of storm water discharges from the construction of the project; (b) to identify BMPs to reduce or eliminate pollutants in storm water discharges and authorized non-storm water discharges from the site during construction; (c) to outline and provide guidance for BMPs monitoring; (d) to identify project discharge points and receiving waters; (e) to address post-construction BMPs implementation and monitoring; and (f) to address sedimentation, siltation, turbidity, and non-visually detectable pollutant monitoring, and outline a sampling and analysis strategy.

The contractor shall implement the SWPPP including all BMPs and perform inspections of all BMPs. Potential SWPPP BMPs could include, but would not be limited to the following:

- Placing fiber rolls around onsite drain inlets to prevent sediment and construction-related debris from entering inlets.
- Placing fiber rolls along the perimeter of the site to reduce runoff flow velocities and prevent sediment from leaving the site.
- Placing silt fences down-gradient of disturbed areas to slow down runoff and retain sediment.
- Stabilizing construction entrance to reduce the tracking of mud and dirt onto public roads by construction vehicles.
- Staging and covering excavated and stored construction materials and soil stockpiles in stable areas to prevent erosion.

The construction-specific SPRP and HSCERP shall include preparations for quick and safe cleanup of accidental spills. It shall prescribe hazardous materials handling procedures for reducing the potential for a spill during construction and shall include an emergency response program to ensure quick and safe cleanup of accidental spills. The plan shall identify areas where refueling and vehicle maintenance activities and storage of hazardous materials, if any, will be permitted, with secondary containment.

Construction personnel shall not refuel or conduct equipment maintenance activities within 250 feet of any aquatic features. The SPRP and HSCERP shall identify BMPs in

the event a spill occurs. BMPs may include but are not limited to the following: use of oil-absorbent materials, tarps, and storage drums to contain and control any minor releases; and storage and use of emergency-spill supplies and equipment in locations adjacent to work and staging areas.

Greenhouse Gas Emissions

Mitigation Measure CU-12 Greenhouse Gas Reduction Measures

Prior to project construction, SMUD shall provide a plan to SMAQMD which demonstrates that the combined emissions from all off-road equipment, construction vehicles, and haul truck to be used in the construction project will implement GHG reduction strategies demonstrating that annual GHG emissions would be the SMAQMD's construction mass emissions threshold of 1,100 $MTCO_2e$/year.

- The plan shall include an inventory of all off-road equipment and haul trucks to be used during construction.
- Strategies for reducing GHG emissions could include the use of alternative fuels, changes in construction schedules, the phasing of haul truck trips. and/or other options as they become available.

If more detailed construction information becomes available a refined emissions modeling analysis can be performed. This analysis shall be conducted in accordance with applicable SMAQMD-recommended methodologies. The analysis shall include reduction measures sufficient to ensure construction activity would not exceed SMAQMD's mass emissions threshold of 1,100 $MTCO_2e$/year.

Hazards and Hazardous Materials

Mitigation Measure CU-13 Worker Training for Hazardous Materials

SMUD shall establish an environmental training program to communicate environmental concerns and appropriate work practices to all field personnel, including spill prevention, emergency response measures, and proper BMP implementation. All personnel will review all site-specific plans, including, but not limited to, the Project's SWPPP, health and safety plan, and fugitive dust control plan.

Mitigation Measure CU-14 Spill Prevention, Control, and Countermeasures Plan

SMUD shall prepare and maintain an operation-specific Spill Prevention, Control, and Countermeasures Plan (SPCC Plan) in accordance with state and federal requirements, including 40 CFR 112. The SPCC Plan shall identify engineering and containment measures for preventing oil releases into waterways. An SPCC Plan is required when there is over 1,320 gallons of petroleum products on site (excluding vehicles).

Mitigation Measure CU-15 Hazardous Materials Business Plan

SMUD will evaluate applicability of the Hazardous Materials Business Plan (HMBP) requirements (the project would use or store hazardous materials equal to or greater

than 55 gallons of liquids, 500 pounds of solids and/or 200 cubic feet [at standard temperature and pressure] of compressed gases) and file operation-specific HMBP in accordance with local, state, and federal laws. The HMBP shall identify site activities, provide an inventory of hazardous materials used onsite, provide a facilities map, and identify an emergency response plan/contingency plan.

Noise and Vibration

Mitigation Measure CU-16 Limit Construction Activity to Daytime Hours

Per Sacramento County noise ordinance requirements (Sacramento County Code Section 6.68), construction activity associated with the development of the Jackson Bulk Substation shall be limited to the hours of 6:00 a.m. and 8:00 p.m. on weekdays and between 7:00 a.m. and 8:00 p.m. on weekends.

Significance after Mitigation

Project applicants for each of the community and master plan projects would be required to comply with Mitigation Measure CU-1 to coordinate with SMUD during the grading and pre-construction activities to facilitate efficiencies where feasible.

Additionally, the specific design and siting details for the construction and operation of the bulk substation are not known at this time. The EIR has provided an analysis of the potential project and cumulative impacts associated with development of the bulk substation and other ancillary off-site facilities (e.g., power lines) based upon the best available information at this time. Development of the facility is the responsibility of SMUD as the utility provider and SMUD can and should mitigate for impacts related to development. Additional or substitute mitigation may be available when a specific site and the design of the project is known. Where standard development policies and requirements can be implemented to reduce impacts, they have been assumed in the above analysis. However, until specific site and design plans are developed, it is unknown whether specific impacts related to air quality, biological resources, greenhouse gas emissions, noise can be reduced. Therefore, at the program-level it is not possible to guarantee that all impacts related to would be able to be mitigated and the this Draft EIR conservatively assumes that the project would have **cumulatively considerable and significant** impacts related to these resources.

GROWTH INDUCING IMPACTS

GROWTH INDUCEMENT

The CEQA Guidelines identify several ways in which a project could have growth-inducing impacts (CEQA Guidelines Section 15126.2). Growth inducement is when a project fosters economic or population growth in the surrounding environment, which may be directly or indirectly caused. For instance, a project may generate significant additional employment opportunities, which in turn generates the construction of additional housing to bring additional residents near this employment center. Indirect growth inducement is also possible, if a project removes obstacles to population growth, or encourages and facilitates other activities that are beyond those proposed as part of the project. For instance, a project may upgrade and increase the capacity of a major water pipeline, which then allows additional development in the area that had previously been constrained by lack of additional infrastructure capacity. Aside from infrastructure, other indirect examples include altering the availability of developable land and precedent-setting actions related to local government growth policies.

Growth inducement may not be considered necessarily detrimental, beneficial, or of significance under CEQA. Induced growth is considered a significant impact only if it directly or indirectly affects the ability of agencies to provide needed public services or if it can be demonstrated that the potential growth, in some other way, significantly affects the environment. The paragraphs below analyze the project's potential to induce growth by removing a barrier to growth, by setting a land use precedent, or by fostering additional development.

REMOVING BARRIERS TO GROWTH

The Mather South Project is within the Sacramento County Urban Services Boundary (USB) and Urban Policy Area (UPA) and is within the Cordova Community Plan and Mather Field Specific Plan area. Therefore, the Mather South Plan Area has been identified for future development. There are no barriers to growth which would be removed through implementation of the project. Areawide water supply infrastructure and wastewater treatment and conveyance facilities have been planned for, and if the project were to develop prior to other areas in the Cordova Community Plan Area, project-specific wastewater and water infrastructure would be constructed. However, because future wastewater and water infrastructure was assumed and approved under the Mather Field Specific Plan, the project would not remove these barriers to growth, but merely implement previously approved infrastructure expansions. Similarly, primary roadways are in service throughout the vicinity of the Plan Area, and the project would only result in additional access to the internal portions of the project site, thereby not removing additional barriers to growth. The Mather South Project would contribute to the cumulative demand for one SMUD bulk substation and would also require the development of a smaller substation and other supportive infrastructure (i.e. control buildings, transmission lines, access roads) within the Plan Area. However, this does not represent a barrier to growth because SMUD has existing high voltage transmission lines in the vicinity and has the capacity available to serve the project.

LAND USE PRECEDENT AND FOSTERING DEVELOPMENT

The Mather South Project is consistent with the land use designations approved in the Mather Field Project (2016) which was an amendment to the Mather Field Specific Plan. Under the Mather Field Specific Plan, the intent for the Plan Area has been to develop the site with a mix of uses that would realize successful economic development on the former Mather AFB site. The County's Board of Supervisors have made continued efforts to redevelop the Plan Area and the Mather South Project is consistent with that vision.

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21 GLOSSARY OF ACRONYMS/ABBREVIATIONS

°F	degrees Fahrenheit
µg/m_3	micrograms per cubic meter
AB	Assembly Bill
ACHP	Advisory Council on Historic Preservation
ACLUP	Airport Comprehensive Land Use Plan
ADA	Americans with Disabilities Act
ADT	Average Daily Trips
AF/year	acre-feet per year
AFB	Air Force Base
AGL	above ground level
ALUCP	Airport Land Use Compatibility Plan
amp	amperes
AOC	Area of Concern
APE	Area of Potential Effect
APPA	Airport Planning Policy Area
AQMP	Air Quality Mitigation Plan
ARA	Aggregate Resource Areas
ASTM	American Society for Testing and Materials
BMP	best management practice
BO	Biological Opinion
Board	Sacramento County Board of Supervisors
CA SDWA	California Safe Drinking Water Act
CAA	Clean Air Act
CAAA	Clean Air Act Amendments of 1990
CAAQS	California Ambient Air Quality Standards
CAFÉ	Corporate Average Fuel Economy
Cal EPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CBC	California Uniform Building Code
CCAA	California Clean Air Act
CDE	California Department of Education
CDFW	California Department of Fish & Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act

CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
CHRIS	California Historical Information System
CLUP	Comprehensive Land Use Plan
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNPS	California Native Plant Society
CNRA	California Natural Resources Agency
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
COC	contaminants of concern
Community Master Plan	Mather South Community Master Plan
County DWR	Sacramento County Department of Water Resources
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CSCGMP	Central Sacramento County Groundwater Management Plan
CSMP	Corridor System Management Plan
CSWMP	comprehensive stormwater management program
CUPA	Certified Unified Program Agency
CVP	Central Valley Project
CWA	Clean Water Act
CWPP	Community Wildfire Protection Plan
dB	decibels
DBH	diameter at breast height
DDW	Division of Drinking Water's
Delta	Sacramento River–San Joaquin River Delta
diesel PM	exhaust from diesel engines
DNL	Day-Night Average Sound Level
DOD	U.S. Department of Defense
DOT	U.S. Department of Transportation
DPR	Department of Parks and Recreation
DTSC	California Department of Toxic Substances Control
DU	dwelling unit
DUE	dwelling unit equivalent
DWR	Department of Water Resources
EAP	Energy Action Plan
EGUSD	Elk Grove Unified School District
EIR	environmental impact report
EIS	Environmental Impact Statement

EMD	Sacramento County Environmental Management Department
EMFAC	EMissions FACtor
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPAct	Energy Policy Act of 1992
ESA	Environmental Site Assessment
EV	electric vehicle
EVSE	Electric Vehicle Service Equipment
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FEMA	Federal Emergency Management Agency
FHSZ	fire hazard severity zone
FIRM	Flood Insurance Rate Map
GHG	greenhouse gas
GIS	Geographic Information Systems
GSP	Groundwater Sustainability Plan
HAP	hazardous air pollutant
HASP	Health and Safety Plan
HCM	*Highway Capacity Manual*
HMP	Hydromodification Management Plan
HOV	high-occupancy vehicle
hp	horsepower
Hz	hertz
IPCC	Intergovernmental Panel on Climate Change
IRCTS	Inactive Rancho Cordova Test Site
ITS	intelligent transportation systems
IWMP	Interim Mather Wetlands Management Plan
Joint TIS	Joint Transportation Impact Study
JPA	Joint Powers Authority
km	kilometers
kV	kilovolt
lb/day	pounds per day
LCFS	Low Carbon Fuel Standard
L_{dn}	day-night level
LEA	local educational agency
L_{eq}	equivalent continuous sound level
LID	Low Impact Development
L_{max}	maximum sound level
LOS	level of service
LUFT	Leaking underground fuel tank
Mather AFB	Mather Air Force Base
Mather South Project	Mather South Community Master Plan Project

MCL	maximum contaminants level
Metro Fire	Sacramento Metropolitan Fire District
mgd	million gallons per day
MIST	Mather Internal Study Team
MMRP	Mitigation Monitoring and Reporting Program
MMT	million metric tons
mPa	micro-Pascals
mpg	miles per gallon
mph	miles per hour
MPO	metropolitan planning organizations
MSCMP or project	Mather South Community Master Plan
MT	metric tons
MTIP	Metropolitan Transportation Improvement Program
MTP/SCS	Metropolitan Transportation Plan/Sustainable Communities Strategy
MUFI	minor, ubiquitous, or fragmentary infrastructure
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NCIC	North Central Information Center
NDMA	n-nitrosodimethylamine
NEV	neighborhood electric vehicle
NHPA	National Historic Preservation Act
NHTSA	National Highway Traffic Safety Administration
NMFS	National Marine Fisheries Service
NO	nitric oxide
NO_2	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOFA	No Further Action
NOI	notice of intent
NOP	Notice of Preparation
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSA	North Service Area
OPR	Office of Planning and Research
OSHA	U.S. Occupational Safety and Health Administration
ozone	photochemical smog
PCB	polychlorinated biphenyl
PCE	perchloroethylene
PEA	preliminary endangerment assessment

PER	County of Sacramento Office of Planning and Environmental Review
PG&E	Pacific Gas and Electric Company
Plan Area	Mather South Plan Area
PM_{10}	respirable particulate matter
$PM_{2.5}$	fine particulate matter
POU	Place of Use
ppb	parts per billion
ppm	parts per million
PPV	peak particle velocity
PRC	Public Resources Code
project site	also referred to as the Plan Area
PSD	Prevention of Significant Deterioration
REC	Recognized Environmental Condition
RHMA	rubberized hot-mix asphalt
RMS	root-mean-square
ROD	Record of Decision
ROG	reactive organic gases
RPS	renewable portfolio standard
RT	Sacramento Regional Transit District
RWQCB	regional water quality control board
SAC	Strategic Air Command
SacDOT	Sacramento County Department of Transportation
SacOES	Sacramento County Office of Emergency Services
SACOG	Sacramento Area Council of Governments
SACOMC	Sacramento Commission on Mather Conversion
SacRT	Sacramento Regional Transit District
SAF Plan	State Alternative Fuels Plan
SCBMP	Sacramento County Bicycle Master Plan
SCGA	Sacramento Central Groundwater Authority
SCPMP	Sacramento County Pedestrian Master Plan
SCS	Sustainable Communities Strategy
SCTDF	Sacramento County Transportation Development Fee
SCTMF	Sacramento Countywide Transportation Mitigation Fee
SCWA	Sacramento County Water Agency
sf	square feet
SGMA	Sustainable Groundwater Management Act
SIP	State implementation plan
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Municipal Utility District
SO_2	sulfur dioxide

SPA Ordinance	Mather Field Special Planning Area Ordinance
SPL	sound pressure level
SR 16	State Route 16
SRC	Sacramento Rendering Company
SRWTP	Sacramento Regional Wastewater Treatment Plant
SSD	Sacramento County Sheriff's Department
SSHCP	South Sacramento Habitat Conservation Plan
Survey Report	*Mather Field Project Cultural Resources Survey Report*
SVAB	Sacramento Valley Air Basin
SVP	Society of Vertebrate Paleontology
SWPPP	stormwater pollution prevention plan
SWRC	State Water Resources Control Board
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TCE	trichloroethylene
TCR	Transportation Concept Report
TDS	total dissolved solids
TIA	Traffic Impact Analysis
TMA	Transportation Management Agency
tons/year	tons per year
Tool	Dynamic Implementation Tool
Transportation Report	*Mather South Specific Plan Amendment Transportation Impact Report*
TSM	Transportation Systems Management
UAIC	United Auburn Indian Community of the Auburn Rancheria
UDA	Urban Development Area
ULOP	urban level of flood protection
UPA	Urban Policy Area
US 50	U.S. Highway 50
USACE	U.S. Army Corps of Engineers
USAF	U.S. Air Force
USB	Urban Services Boundary
USFWS	U.S. Fish & Wildlife Service
USGS	United States Geological Survey
UST	underground storage tanks
UWMP	Urban Water Management Plan
V/C	volume-to-capacity
VA	Veterans Affairs
VdB	vibration decibels
VMT	vehicle miles traveled
VOC	volatile organic compound
VSWTP	Vineyard Surface Water Treatment Plant

Water Forum	Sacramento Area Water Forum
WEAP	Worker Environmental Awareness Program
WFA	Water Forum Agreement
WFP	Water Forum Plan
WRCC	Western Regional Climate Center
WSA	Water Supply Assessment
WSIP	Water System Infrastructure Plan
WTP	Water Treatment Plant

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22 ACKNOWLEDGEMENTS

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23 RESPONSE TO COMMENTS

INTRODUCTION

The Draft Environmental Impact Report (DEIR) was released on January 8, 2019 and had a 45-day public review period that closed on February 21, 2019. A total of 22 individual letters were received during the written comment period. Each letter has been given a numeric designation (e.g. Letter 1), which can be found on the upper right-hand corner of the attached letters. All 22 letters are included at the end of this chapter. Opportunity for oral comment on the DEIR was offered at the Sacramento County Planning Commission on February 25, 2019, at which time the comment period was closed. Each Draft EIR reviewer that submitted written comments is listed below. Oral comments received during the public hearings before the Sacramento County Planning Commission are also included and are organized in accordance with the order in which they spoke. Oral comments begin after the written comments.

Individual comments addressing separate subjects within each letter are labeled in this chapter based on the letter's numeric designation and comment number (e.g. 1-1). Where a letter essentially addresses only one subject, comment numbers are not assigned. The text of the comments on DEIR adequacy has been provided, followed by a response. In cases where there is substantial letter text (spanning multiple pages), but little or none of the text addresses DEIR adequacy or this specific Project, the text of the comment has not been provided and reviewers are directed to the appropriate page of the attached comment letters. Also note that the preface language of the letters is often excluded (where the text consists of salutations and brief descriptions of the commenting organization). The entirety of each of the letters, as well as any supporting materials submitted, are included in Appendix RTC-1. Oral comments have been paraphrased with a response following each comment. Oral comments which duplicated written comments submitted by the speaker are not presented; the text instead refers the reader back to the letter submitted by the speaker.

Where changes to the text of the EIR are made as a result of the comments received, those changes are shown with **bold underline** for text added and ~~strikethrough~~ for text deleted within the pertinent chapters.

In some cases the response to the comment is "comment noted". Pursuant to Section 15088 of the CEQA Guidelines, no written responses are provided for those letters or comments that did not address the adequacy of the DEIR. While no response to the comment is provided, the comment letters are forwarded to the Board of Supervisors for consideration via this EIR.

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* This letter is untimely as it was received on December 20, 2019, ten months after the close of the 45-day public review period on February 22, 2019. Section 15105 of the CEQA Guidelines provides for a designated public review and comment period. Section 15088 of the CEQA Guidelines provides that lead agencies shall respond to comments received during the noticed comment period but need not respond to comments received after that period ends. This comment letter does not raise new issues not addressed in this Final EIR; consequently, no individual responses are provided.

ORAL COMMENTS: SACRAMENTO COUNTY PLANNING COMMISSION (FEBRUARY 25, 2019)

1. Roxanne Fuentez. Reiterated comments from letter sent on February 20, 2019. See Letter 6 for detailed comments and responses.

2. Mather Alliance. Reiterated comments from letter sent on February 21, 2019. See Letter 10 for detailed comments and responses.

WRITTEN COMMENTS ON THE EIR

LETTER 1 - CALIFORNIA DEPARTMENT OF TRANSPORTATION

Alex Fong, written correspondence; dated February 22, 2019

COMMENT 1-1

SR 16 (Jackson Corridor) Projects – Please show Future Cumulative Traffic Impact and Future Cumulative Traffic Conditions. The DEIR on pages 17-1 and 17-2, under Jackson Corridor Projects, takes four master plans into consideration: West Jackson Highway Master Plan, Jackson Township Specific Plan, Newbridge Specific Plan, and Mather South Community Master Plan. In addition, Caltrans recommends including the following projects in the future cumulative analyses because of the significant amount of traffic generated from these projects that will impact US Route 50 (US 50) and SR 16:

- The Cordova Hills – located on the east side of Grant Line Road and north of Kiefer Boulevard.
- The Ranch – located on the east of Sunrise Boulevard, west of Grant Line Road, north of Kiefer Boulevard, and south of Douglas Road.
- The Preserve – located north of Douglas Road and west of Grant Line Road.
- The Grantline 220 Subdivision – located west of Grant Line Road and south of Douglas Boulevard.
- Mather South Community Project – located in Sacramento County, east of Sunrise Boulevard and north of Kiefer Boulevard.

RESPONSE 1-1

Figure 6.5 on page 215 of the Transportation Impact Report Mather South Specific Plan Amendment shows Future Cumulative Traffic Conditions without the four project conditions and Figure 6.6 on page 216 of the aforementioned document shows Future Cumulative Traffic Impacts and Future Cumulative Traffic Conditions with the four projects.

As the text on page 204 states, "the full build out of all reasonably foreseeable development projects was assumed within the study area, including the following major developments", which include Cordova Hills, Sunridge Ranch, Grantline 220 and Mather South as the primary subject of the report. Note that all other planned and proposed development in the large study area was included in the CEQA Cumulative scenario, but only major developments were listed in the text. The CEQA Cumulative scenario represents full residential buildout of the study area and a large increase in non-residential development that is "balanced" with that residential growth. SACOG assisted by applying their "popgen" program to populate all of the households in the study area.

COMMENT 1-2

The DEIR, on pages 17-63, show an average of 21.9 Vehicle Miles Traveled (VMT) per capital per day, which is higher than the predicted 18.6 VMT per capital average per day for the region. On Plate TR-11: Mather South Project Transit Network, transit will only go to the Sunrise Light Rail Station. To help reduce VMT, we recommend additional bus routes to and from the project connecting to the Zinfandel and/or Mather Light Rail Stations, as well as other light rail stations along Folsom Boulevard and US 50.

RESPONSE 1-2

The comment is correct that the proposed project will produce higher vehicle miles traveled (VMT) per capita per day in comparison to the regional average. On page 17-85, states “public transit is not currently provided to, or in the vicinity of the Mather South Project site. As detailed in the Project Transportation Improvement section, a conceptual transit system to serve the Jackson Corridor Projects (including Mather South Project) was developed by Sacramento County, SacRT, DKS Associates, and the applicant of the Jackson Corridor Projects as part of a joint transit planning process.” The transit network and service meets General Plan requirements, and is designed to be flexible over time such that advancements in technology and transit service models may be incorporated and further reduce VMT.

COMMENT 1-3

Trip Generation Table – Please include peak hour trips and daily trips for each individual land use. For a more accurate trip generation, please provide the number of students for the two elementary schools, and please be specific as the type of retail.

RESPONSE 1-3

Trip generation is a product of the SACSIM activity-based tour model. An agreement was made with the County and SACOG to utilize SACOG "placetypes" to define land use and SACOG's “percentage employment mix" for each placetype. As such, Table 3.1 on page 59 shows the land use summary for the Mather South Specific Plan Amendment. The text on page 57, Section 3.1.1 states that "the total enrollment for the two elementary schools was estimated at about 1,500 students". Due to the size of the project and its context, retail identified in the aforementioned Table 3.1 refers to neighborhood retail.

COMMENT 1-4

Existing Peak Hour Volume – The trip distribution from existing conditions plus the Mather South Community Master Plan shows that an approximate 45% of the trips generated will affect US 50. Caltrans estimates that percentage to be about 10-15% less than expected. Please provide your methodology for approximating the 45% trip generations to US 50.

RESPONSE 1-4

The project's trip distribution is a product of applying the SACSIM model, which represents best practices for a project of this size. SACOG calibrated the model and its trip distribution process to exiting conditions and DKS validated the model to existing traffic data prior to the addition of the Mather South development. SACSIM does not simply generate and "add" project traffic to existing traffic volumes, but rather takes into consideration the uses and context of land uses near the project. The model then develops a new trip distribution specific to each scenario. The model's estimate that 45% of trips generated by the project would use US 50 is reasonable and appropriate.

COMMENT 1-5

Amador County Impacts – Please work with the Sacramento Area Council of Governments and other lead agencies to coordinate on signal coordination, incident management and travel demand management along roadways, transit and active transportation on SR 16. This includes park and ride facilities and coordinating with Amador Transit Commuter with planned Bus Rapid Transit to reduce single occupancy vehicles and VMT.

RESPONSE 1-5

The analysis presented in the Traffic and Circulation section was prepared using a methodology that is consistent with the methodology adopted by Sacramento Area Council of Governments (SACOG) to determine regional thresholds and regional VMT per capita. The comment is asking for coordination among jurisdictions and is not germane to the CEQA analysis nor is it not a comment on the adequacy of the environmental analysis. Interagency and regional coordination and cooperation is important and the County will continue to work with Amador County, SACOG and other regional partners to ensure the transportation system functions as efficiently as possible.

COMMENT 1-6

Because the Mather South Community Master Plan area is directly adjacent to the West Jackson Highway Master Plan Area, Jackson Township and Newbridge, Caltrans has entered discussions with the County of Sacramento and the City of Rancho Cordova to relinquish SR 16 between Watt Avenue and Grant Line Road. Should the relinquishment occur, and the County take ownership of this facility, then Caltrans will have no approval role on any or all modifications to the segment relinquished to the County. However, should relinquishment not occur, or occur after construction of the Mather South Community Master Plan, Caltrans cannot approve any design changes that would not comply with the design standards set forth by the Highway Design Manual, and cannot approve facility modifications that are incompatible with the SR 16 Transportation Concept Report.

RESPONSE 1-6

This comment does not identify any deficiencies in the DEIR analysis. However, should relinquishment not occur, design of improvements on State Route 16 will be subject to

the design standards set forth by the Highway Design Manual and will be reviewed and approved by Caltrans. Comment noted.

LETTER 2 – REGIONAL SAN/SASD

Anne Tran, P.E.; written correspondence; January 16, 2019

COMMENT 2-1

Both the Sacramento Regional County Sanitation District (Regional San) and the Sacramento Area Sewer District (SASD) have reviewed the subject documents for the revised Notice Of Preparation of draft Environmental Impact Report for the Mather South Community Master Plan (PLNP2013-00065).

The comments sent in a letter dated July 8, 2014 are still valid but refers to the District's former website and updated below for your convenience:

Regional San and SASD are not land-use authorities. Regional San and SASD sewer systems are designed using predicted wastewater flows that are dependent on land use information provided by each land use authority. Projects identified within Regional San and SASD planning documents are based on growth projections provided by land-use authorities. Sewer studies, including points of connection and phasing information, will need to be completed to fully assess the impacts of any project that has the potential to increase existing or future flow demands. Onsite and offsite impacts associated with constructing sanitary sewers facilities to provide service to the subject project must be included in environmental impact reports.

The Regional San Board of Directors adopted the Interceptor Sequencing Study (ISS) in February 2013. The ISS updated the SRCSD Master Plan 2000 and can be found on the Regional San website at https://www.regionalsan.com/ISS. The most current SASD planning document, the 2010 System Capacity Plan Update (SCP) was approved by the

SASD Board of Directors in January 2012. The SCP can be found on the SASD website at https://www.sacsewer.com/standards-specifications.

Customers receiving service from Regional San and SASD are responsible for rates and fees outlined within the latest Regional San and SASD ordinances. Fees for connecting to the sewer system are set up to recover the capital investment of sewer and treatment facilities that serve new customers. The SASD ordinance is located on the SASD website at https://www.sacsewer.com/sewer-ordinance, and the Regional San ordinance is located on their

website at https://www.regionalsan.com/ordinance.

The SRWTP provides secondary treatment using an activated sludge process. Incoming wastewater flows through mechanical bar screens through a primary sedimentation process. This allows most of the heavy organic solids to settle to the bottom of the tanks. These solids are later delivered to the digesters. Next, oxygen is added to the wastewater to grow naturally occurring microscopic organisms, which consume the organic particles in the wastewater. These organisms eventually settle on the bottom of the secondary clarifiers. Clean water pours off the top of these clarifiers and is chlorinated, removing any pathogens or other harmful organisms that may still exist. Chlorine disinfection occurs while the wastewater travels through a two-mile "outfall" pipeline to the Sacramento River, near the town of Freeport, California. Before entering the river, sulfur dioxide is added to neutralize the chlorine. The design of the SRWTP and collection system was balanced to have SRWTP facilities accommodate some of the wet weather flows while minimizing idle SRWTP facilities during dry weather. The SRWTP was designed to accommodate some wet weather flows while the storage basins and interceptors were designed to accommodate the remaining wet weather flows.

A NPDES Discharge Permit was issued to Regional San by the Central Valley Regional Water Quality Control Board (Water Board) in December 2010. In adopting the new Discharge Permit, the Water Board required Regional San to meet significantly more restrictive treatment levels over its current levels for ammonia, nitrate, and pathogens. The new treatment facilities for achieving the permit requirements must be completed by May 2021 for ammonia and nitrate and May 2023 for the pathogen requirements. In April 2016 the Water Board adopted a new NPDES Discharge Permit that continued the more restrictive treatment levels and deadlines for new treatment facilities for ammonia, nitrate, and pathogens.

Regional San currently owns and operates a 5-mgd Water Reclamation that has been producing and providing Title 22 tertiary recycled water since 2003 to select areas within the SRWTP property and the City of Elk Grove. The recycled water used in the City of Elk Grove is wholesaled by Regional San to the Sacramento County Water Agency (SCWA). SCWA retails the recycled water, primarily for landscape irrigation use, to recycled water customers in the City of Elk Grove. Although Regional San has evaluated at a high level the feasibility of using recycled water in the

Mather area, Regional San currently does not have any planned facilities that could provide recycled water to the proposed project or its vicinity. Additionally, Regional San is not a water purveyor and any potential use of recycled water in the project area must be coordinated between the key stakeholders, e.g. land use jurisdictions, water purveyors, users, and the recycled water producers.

RESPONSE 2-1

The comment provides general information about the Sacramento Regional Sanitation District (Regional San) and Sacramento Area Sewer District (SASD), which would operate wastewater conveyance infrastructure and treatment facilities that would eventually the project. The comment also states that Regional San provides recycled water in some areas, but does not have facilities to do so for the project. The project is not proposing to use recycled water at this time. The comment does not address the analysis of the EIR. The information provided for the NOP was incorporated into the DEIR for background information on wastewater facilities. The comment is noted.

LETTER 3 – PG&E GAS AND ELECTRIC FACILITIES

Plan Review Team; written correspondence; January 28, 2019

COMMENT 3-1

Thank you for submitting Mather South Community Master plans for our review. PG&E will review the submitted plans in relationship to any existing Gas and Electric facilities within the project area. If the proposed project is adjacent/or within PG&E owned property and/or easements, we will be working with you to ensure compatible uses and activities near our facilities.

Attached you will find information and requirements as it relates to Gas facilities (Attachment 1) and Electric facilities (Attachment 2). Please review these in detail, as it is critical to ensure your safety and to protect PG&E's facilities and its existing rights.

Below is additional information for your review:

1. This plan review process does not replace the application process for PG&E gas or electric service your project may require. For these requests, please continue to work with PG&E Service Planning: https://www.pge.com/en_US/business/services/building-and-renovation/overview/overview.page.

2. If the project being submitted is part of a larger project, please include the entire scope of your project, and not just a portion of it. PG&E's facilities are to be incorporated within any CEQA document. PG&E needs to verify that the CEQA document will identify any required future PG&E services.

3. An engineering deposit may be required to review plans for a project depending on the size, scope, and location of the project and as it relates to any rearrangement or new installation of PG&E facilities.

Any proposed uses within the PG&E fee strip and/or easement, may include a California Public Utility Commission (CPUC) Section 851 filing. This requires the CPUC to render approval for a conveyance of rights for specific uses on PG&E's fee strip or easement. PG&E will advise if the necessity to incorporate a CPUC Section 851filing is required.

This letter does not constitute PG&E's consent to use any portion of its easement for any purpose not previously conveyed. PG&E will provide a project specific response as required.

RESPONSE 3-1

The project area is not located within PG&E Service Districts. As stated on page 9-1, natural gas services are provided by West Coast Gas Company. The comment does not identify any deficiencies in the Draft EIR analysis.

LETTER 4 – RANCHO CORDOVA PUBLIC WORKS DEPARTMENT

Albert Stricker; written correspondence; January 29, 2019

COMMENT 4-1

The City recently prepared our response to the NewBridge Specific Plan DEIR and would like to reiterate those comments via the attached letter dated September 20, 2018. As both of these projects are tiered off of a similar cumulative analysis with all four Jackson Corridor projects, the attached letter also applies to the Mather South Specific Plan.

RESPONSE 4-1

The commenter is correct that the cumulative transportation analysis includes all four Jackson Corridor master plans. However, each master plan has a stand-alone EIR. Responses related to specific comments made on the NewBridge DEIR will be contained in the NewBridge Response to Comments and Final EIR. Comments from the letter dated September 20, 2018 are listed below starting at Comment 4.4; comments that are specific to the Mather South transportation analysis will be addressed in this Response to Comments and FEIR.

COMMENT 4-2

We would also like to provide comments on the Existing Plus Project Scenario for the Transportation Impact Report Mather South Specific Plan Amendment.

With nearly 40 percent of the project's traffic passing through the Villages of Zinfandel on Zinfandel drive and another 14 percent of project traffic headed up Sunrise Boulevard, we are concerned with operations at the Highway 50 interchanges: Zinfandel Drive, Mather Field Road and Sunrise Boulevard. While the Transportation Impact Report does not identify existing plus project impacts at these interchanges, we feel that the analysis falls short of helping the City of Rancho Cordova understand how these operationally challenged interchanges will function when Mather South is built.

RESPONSE 4-2

The commenter refers to Figure 3.4 to describe the percent of project traffic traveling on Zinfandel Drive and Sunrise Boulevard. As the figure shows, the percentages identified are quite far from the Highway 50 interchanges. The figure shows that the project traffic percentages approaching the interchanges are nearly half of what was identified on segments closer to the project. Segments and intersections were evaluated using best practice HCM analysis methods, so the conclusions in the TIS are results from adequate analysis.

COMMENT 4-3

Secondly, we would like to have an understanding of how Sacramento County will participate on impacted roadway facilities that are jointly held by the City and the County. We are particularly interested in the timing of funding and improvements on the following impacted roadway segments and intersections.

- Sunrise Boulevard, Jackson Highway to Kiefer Boulevard
- Zinfandel Drive, south of the Villages of Zinfandel
- Happy Lane/ Old Placerville intersection, and
- Functionality improvements along White Rock Road and Grant Line Road (safety improvements and shoulders)

RESPONSE 4-3

As stated later in the letter, in 2015 Sacramento County and the City of Rancho Cordova adopted a reciprocal funding agreement and master operational agreement between the jurisdictions to share transportation improvement costs. City of Rancho Cordova staff will need to continue coordination with County DOT staff to develop a project-level operational agreement for the Mather South project. The project is responsible to fund its fair share of improvements on regional roadways in the City's jurisdiction, provided there is a project-level operational agreement in place. The timing of improvements will be identified using the Dynamic Implementation Tool, as described in the Jackson Highway Corridor Transportation Mitigation Strategy adopted by the Board of Supervisors on July 23, 2019.

COMMENT 4-4

The bulk of our comments relate to the Transportation Impact Report, Appendix TR-1. While our comments address the NewBridge project, we will also comment on transportation analysis scenarios that include all four Jackson Corridor projects.

The CEQA Cumulative scenario is a significant effort that attempts to envision circulation effects and transportation impacts in a future that builds communities supporting nearly 100,000 new homes south of Highway 50. This is an ambitious effort that attempts to avoid piece-meal evaluations so that we can have a clear vision of what could occur when all contemplated developments are built. The City of Rancho Cordova sees value in this analysis, but is concerned about the practicality of planning for developments that will take, at least, decades to build. The CEQA Cumulative vision is useful for planning, but the vision will likely change dramatically over the next century. We anticipate that new technology and changing social and economic realities will redirect development planning along Jackson Highway as these projects are further developed.

RESPONSE 4-4

This comment does not identify any deficiencies in the Draft EIR's analysis. The County does not disagree with the commenter's concern regarding the practicality of planning for developments that, if approved, will take multiple decades to build out. In fact, in the time between the adoption of the 2030 General Plan (November 2011), the beginning of the transportation analysis for the Jackson Corridor master plans (April 2013), and

publication of the first two Draft EIRs for Mather South and NewBridge, significant advances in technology and transportation network companies have disrupted the transportation industry and prompted local jurisdictions including Sacramento County to reevaluate current transportation and land use planning practices. However, consistent with CEQA practice, the analysis to date is based on the best currently available information and does not speculate on potential changes over the next century.

COMMENT 4-5

The City believes that there are many benefits to providing adequate parks and reactional facilities for residents within a community. The NewBridge Specific Plan includes various neighborhood and community parks, as well as open space areas that provide an opportunity for pedestrian and bike pathways. Upon review of the NewBridge Specific Plan Public Facilities Financing Plan, park construction cost estimates were determined by utilizing the Cordova Recreation and Park District (CRPD) Impact Fee Nexus Study and funding for the park improvements will be through the payment of the CRPD impact fee. Adopting the CRPD Park Impact fee will ensure that a similar level of park and recreational facilities enjoyed by the residents of the City of Rancho Cordova will also be constructed for the residents of NewBridge.

RESPONSE 4-5

The comment does not identify any deficiencies in the DEIR analysis. The Mather South Public Facilities Financing Plan utilizes the Cordova Recreation and Park District (CRPD) Impact Fee Nexus Study (Appendix PD-3) in its financial assumptions.

COMMENT 4-6

In 2015 the County Board and City Council entered into an agreement to share transportation improvement costs associated with environmental impacts across jurisdictions. This agreement is based on the existing plus project scenarios associated with development projects in either jurisdiction. It is our intent to identify Jackson Corridor Development impacts within Rancho Cordova based on the Existing Plus 4 Projects scenario, and then to apply percentage cost shares for improvements based on travel use percentages identified in the CEQA Cumulative model.

The Mather Field Road/Rockingham and Highway 50 EB Ramps/Zinfandel intersections are impacted in the Existing Plus 4 Projects scenario and the EIR identifies these impacts as unavoidable. This is not a complete evaluation. Mitigations projects need to be identified for these impacts.

RESPONSE 4-6

Consistent with CEQA practice, the EIR analysis identified impacts based on the Existing Plus Project and CEQA Cumulative Plus Four Projects scenarios. The Existing Plus Four Projects scenario in the TIS was used as additional information, not used to identify impacts in the EIR; therefore, identification of mitigation is not required for the Existing Plus Four Projects scenario. The CEQA Cumulative Plus Four Projects scenario identifies potential mitigation options for facilities under Caltrans jurisdiction (Mitigation Measure CU-TR-3). Note that the mitigation strategy described starting on page 16-220 of the DEIR includes the Dynamic Implementation Tool, which is designed

to estimate the vehicle trips that would be generated, where those new vehicle trips would go, and if the addition of those new vehicle trips causes any roadway segments or intersections to operate at an unacceptable LOS. As stated on page 16-220 of the DEIR, the Dynamic Implementation Tool is based on, and is consistent with, the traffic modelling conducted for the joint TIS, and would identify each project's financial obligation for transportation improvements based on the Project-specific fair shares of its traffic impacts in the CEQA Cumulative Plus Project scenario.

The existing intersection configuration at Mather Field Road and Rockingham Drive is constructed with its ultimate geometry, as defined in Table 4.7 and Table 6.6 of the TIS; therefore, additional feasible mitigation cannot be identified.

COMMENT 4-7

As a note we recognize that City and County General Plan build-out networks were considered for mitigation. The County has gone on to identify mitigations that go beyond the County General Plan build-out network. We would like to see similar analysis for City mitigations that go beyond the City's General Plan build-out network.

RESPONSE 4-7

There are no segment mitigations beyond the County General Plan build-out network. The additional mitigations that the commenter identifies at some County intersections are the result of the County's analysis of each impacted intersection to determine which of several possible mitigations are reasonable and feasible in each individual context.

The base assumptions for cumulative conditions within and bordering the City of Rancho Cordova were determined by taking input from the City at the start of the transportation impact analysis. It was decided to utilize the best information at the time, the future land use and roadway network in the City's Transportation Impact Fee Program adopted in 2013. The CEQA Cumulative analysis includes land use consistent with that document, and assumes full residential buildout in the City of Rancho Cordova. The transportation network improvements are reasonable and feasible. Given that there are multiple solutions to improving impacts and the varying feasibility of different improvements, the County will not determine feasible improvements in other jurisdictions beyond what was previously agreed upon. That said, the County would work with the City to develop appropriate mitigations as part of a reciprocal funding agreement.

COMMENT 4-8

Joint Roadways *Boarder Roads managed by both the City and County*

Many impacts and mitigations identified in the "plus project" EIR scenarios fall on joint City/County facilities; Sunrise Boulevard, Jackson Highway, Bradshaw Road and Old Placerville Road. The City would like to create a mechanism to assure timely County participation on improvements to these facilities as the City moves forward with capital improvements on these roadways. We are requesting the initiation of an effort to move that process forward.

RESPONSE 4-8

See Response 4-3. The City's desire to create a mechanism to assure timely County participation on joint County/City facilities is beyond the scope of this EIR. The comment has been provided to DOT staff for consideration.

COMMENT 4-9

Existing Plus 4 Projects Scenario

Bradshaw Road from Old Placerville Road to Lincoln Village drive, including the Old Placerville intersection are impacted and there is no mitigation project identified. This is an incomplete evaluation. Mitigations projects need to be identified for these impacts.

RESPONSE 4-9

As stated in Response 4-6, the Existing Plus Four Projects scenario was not used to identify impacts in the EIR. Therefore, mitigation is not identified for this scenario.

COMMENT 4-10

CEQA Cumulative Scenario

Mitigation projects for several links fully within Rancho Cordova City Limits and along the City/County boundary have not been identified. This is an incomplete evaluation. Mitigations projects need to be identified for these impacts.

Within city limits:

- Keifer Boulevard, Sunrise Boulevard to Rancho Cordova Parkway
- Sunrise Boulevard, Douglas Road to Rio del Oro Parkway
- Rancho Cordova Parkway, Rio del Oro Parkway to White Rock Road
- Old Placerville Road, Routier Road to Rockingham Drive (partially a boarder roadway)
- Sunrise/Douglas Intersection
- Mather Field/Rockingham Intersection

Along boarder:

- Bradshaw Road, Old Placerville Road to Highway 50 EB ramps, including the Highway 50 EB Ramps and Old Placerville Road Intersections
- Happy Lane/ Old Placerville Road Intersection

RESPONSE 4-10

The Cumulative Plus Four Projects analysis shows that there is not an impact at Bradshaw Road & US 50 EB Ramps. The analysis also provides mitigation at Happy Lane & Old Placerville Road which suggests the modification to access control.

Base geometric assumptions for cumulative condition for roadway segments and intersection within and bordering or in the City of Rancho Cordova were determined by taking input from the City at the start of the transportation impact analysis. It was

decided to utilize the best information at the time - that is the land use and segment and intersection geometry in the Transportation Impact Fee Program adopted in 2013. Given that there are multiple solutions to improving impacts and the varying feasibility of different improvements, the County will not determine feasible improvements in other jurisdictions, though the County would work with the City to develop an improvement list as part of a reciprocal funding agreement.

COMMENT 4-11

Transit

As the transit system is being developed within the City of Ranch Cordova and along the Jackson Corridor, both agencies along with transit service providers should develop a joint concept for service. Independent transit plans designed for individual developments are inefficient and not useful to the traveling public. A statement of joint transit system development should be added to the EIR.

RESPONSE 4-11

Public transit is not currently provided to, or near the Plan Area. As detailed in the Project Transportation Improvements section, a conceptual transit system to serve the Jackson Corridor Projects (including the Mather South Project) was developed by Sacramento County, SacRT, DKS Associates, and the applicants of the Jackson Corridor Projects as part of a joint transit planning process. The Sacramento County Department of Transportation, Caltrans, City of Sacramento, City of Rancho Cordova, City of Elk Grove, City of Folsom, and Capital Southeast Corridor Joint Powers Authority were consulted for transportation analysis purposes.

The proposed transit system is a requirement for the project and was assumed as an attribute of the Mather South Project and included in the traffic modeling and analysis in the Joint TIS. The assumed transit routes and service frequency would be required at full development of the Mather South Project. The County agrees that coordination and cooperation is helpful but CEQA requires feasible mitigation for an individual project to stand alone. However, the County recognizes that if multiple projects are approved and moving forward with development on similar timelines, cost and service efficiencies may be gained by coordinating delivery of transit service.

COMMENT 4-12

The Mather Field Road/Rockingham intersection delay is reduced by 9.7 seconds with the addition of the NewBridge traffic. We would like to verify that this is an accurate report. Page 76 TIS.

RESPONSE 4-12

Please refer to Response 4-1. The commenter is referring to page 76 which shows a decrease of delay in the PM Peak Hour at Mather Field Road and Rockingham Drive. The traffic forecasts for this study result from applying the SACSIM regional model, which is best practice for a project of this size. SACSIM does not apply project traffic additively to existing conditions, but rather takes into consideration the uses and context

of land use surrounding the project. The model then redistributes trips in the region for each scenario. With the addition of 3,522 dwelling units, the Project will change the distribution of employees commuting in and out of the City of Rancho Cordova - more commute traffic will come from the south and less from US 50. To that end, it is reasonable that delay at some intersection may improve with the addition of the project.

COMMENT 4-13

The legend on the graphic for Trip Distribution does not match the percentage labels. Page 118, 191, 273 TIS.

RESPONSE 4-13

See Response 4-1. This comment is specifically for NewBridge Specific Plan DEIR and is not relevant to the Mather South DEIR.

LETTER 5 – SACRAMENTO COUNTY WATER AGENCY

Michael Grinstead; written correspondence; February 19, 2019

COMMENT 5-1

1. All comments listed in this memo should be taken into account in the DEIR text and it all appendicies to the DEIR.
2. The 30 inch low pressure water supply transmission main that connects the Excelsior Well Field and the Vineyard Surface Water Treatment Plant to the Anatolia Groundwater Treatment Plant and storage tank will not be tapped to supply water to the Mather South Community Master Plan area or any other area. Connection to existing pressurized transmission infrastructure in other areas (examples are Sunrise Blvd. and in Zinfandel Rd.) will be considred for water supply should the NSA Phase II project not be in place at the time of development.

RESPONSE 5-1

Comment noted. Revisions to the text of the Water Supply chapter incorporate clarifications consistent with this comment.

COMMENT 5-2

3. All pipe layouts will be as depected in the most current version of the Zone 40 Water System Infrastrucutre Plan Update. At this time the most current version is dated September 2016 and is referenced in the DEIR. Plate WS-7 is labeled Mather South Water Supply Infrastructure although the Plate depicts Groundwater Elevation Differences so the Water Supply Infrastructure in the DEIR being evaluated for impacts is unclear.

RESPONSE 5-2

The comment is correct; the wrong graphic was unintentionally used in place of a map depicting the project's proposed water supply infrastructure. The graphic has been corrected on page 18-14. This does not result in the need for any changes to the text or analysis.

COMMENT 5-3

4. Once capacity in the 30 inch low pressure water supply transmission main that connects the Excelsior Well Field and the Vineyard Surface Water Treatment Plant to the Anatolia Groundwater Treatment Plant is allocated on a first come first served basis, SCWA will construct the 54 inch Phase II pipeline and ultimately a 10 million gallon water tank farm on the 5.27 acre reserved parcel. The planned 10 million gallons of storage is contrary to the

one million gallons of storage listed in the DEIR and appendicies. At this time the storage is planned to consist of two 5 million gallon water tanks.

RESPONSE 5-3

The comment is correct and revision has been made in the FEIR. This revision does not change the conclusion in the FEIR.

COMMENT 5-4

5. A looped water system connecting to two transmission mains will be required for each phase of development.

RESPONSE 5-4

This comment does not identify any deficiencies in the DEIR analysis and this will be a condition of approval for project level entitlements. Comment noted.

COMMENT 5-5

6. The Public Facilities Financing Plan (PFFP) is an appendix document. It references a Mather South Community Master Plan (MSCMP) Fee that will reimburse the developer for distribution infrastructure that is not reimbursable through the Zone 40 credit/reimbursement process. The PFFP states that the fee will be administered by the County and not SCWA. SCWA will not assess, collect, administer, or authorize distribution of a fee such as this in the future.

RESPONSE 5-5

This comment does not identify any deficiencies in the DEIR analysis. The draft PFFP has been revised to reflect the administering agency.

COMMENT 5-6

7. The Public Facilities Financing Plan (PFFP) is an appendix document. For the PFFP it should be noted that all Zone 40 credit and reimbursement amounts are updated periodically. The reimbursement per unit is located in Schedule C of Title 4 of the Sacramento County Water Agency Code. The code can be found at the following link: http://www.countycounsel.saccounty.net/Pages/WaterAgencyCode.aspx.

RESPONSE 5-6

This comment does not identify any deficiencies in the DEIR analysis. Comment noted that credit and reimbursement amounts are updated periodically.

COMMENT 5-7

8. SCWA's Zone 40 is responsible for construction of potable water facilities within the Zone. Zone 40 charges a fee that is used to reimburse developments for eligible capital expenses including installation of transmission mains and other regional improvements such as water supply development and treatment. After infrastructure is installed, it is SCWA's Zone 41 that is responsible for the ongoing operation and maintenance of this infrastructure. Zone 41 is funded by the end user who pays a user service charge.

RESPONSE 5-7

This comment does not identify any deficiencies in the DEIR analysis. Comment noted.

COMMENT 5-8

9. A hardpan restoration plan is listed in the DEIR as a mitigating action for the Sewer Trunk Line. It is noted that no hardpan restoration plan is required for any other infrastructure which includes all potable and raw water infrastructure.

RESPONSE 5-8

The hardpan restoration plan identified in the EIR is required for all backbone infrastructure that is requires trenching below the depth of hardpan adjacent to the Mather Preserve. Although the Mather South project is not seeking federal permits through the South Sacramento Habitat Conservation Plan, the Mather Preserve is identified in the SSHCP's hard-line preserve strategy. Avoidance and Minimization Measure EDGE-7 is applicable where infrastructure is constructed adjacent to preserves.

COMMENT 5-9

10. Please check the description of the groundwater basins. The Central Basin and the South Basin descriptions may be switched.

RESPONSE 5-9

This comment is correct. The text on page 18-1 has been revised to correct the names of the Central and South groundwater basins.

LETTER 6 – ROXANNE FUENTEZ

Roxanne Fuentez; written correspondence; February 20, 2019

COMMENT 6-1

I am opposed to the proposed project which seeks to build 3,522 residential dwellings units, a 6-acre community center, and 21 acres of commercial retail. This project would destroy approximately 850 acres of vernal pool grassland. Well over 90% of vernal pools in the Sacramento Valley have been wiped out. The Plan Area contains habitats consisting of grassland, wetlands, vernal pool areas, intermittent drainages, and swales. Vernal pool Tadpole Shrimp-an endangered species-occurs in the area, as do Vernal pool Fairy Shrimp, Mid Valley Fairy Shrimp, and Rickseckers Scavenger Beetles. All of these animals will be lost if this project is approved.

RESPONSE 6-1

The purpose of this EIR is to inform decision makers and the public about the project's significant environmental impacts and ways to reduce or mitigate them. This comment relates to the merits of the project – not to the environmental issues analyzed in the FEIR. Thus, no changes to the document are necessary. This comment will become part of the administrative record and will be considered by the decision makers. Comment noted.

COMMENT 6-2

The proposed project would cause the loss of breeding habitat and upland habitat for the Western Spadefoot Toad. The Western Spadefoot toad is rare in the Sacramento Region and Statewide and its numbers have decreased drastically mostly due to habitat loss. This trend towards State and Federal listing for the Western Spadefoot toad is a significant impact. Besides being killed outright by bulldozers, toads in the area of the proposed project will be run over by cars, chopped up by mowers, and weed wackers, poisoned by herbicides, pesticides, and other toxins, and noise and vibrations would break the toads dormancy. ~~All elderberry shrubs will be destroyed by the~~

RESPONSE 6-2

The purpose of this EIR is to inform decision makers and the public about the project's significant environmental impacts and ways to reduce or mitigate them. The comment does not address the adequacy of the DEIR's analysis or proposed mitigation but simply restates the impacts the DEIR has already identified. Thus, no changes to the document

are necessary. However, this comment will become part of the administrative record and will be considered by the decision makers.

COMMENT 6-3

~~break the toads dormancy~~. All elderberry shrubs will be destroyed by the proposed project, causing the loss of the endangered Elderberry Longhorn Beetle. ~~Five special status plants occur in the Plan Area – slender orcutt~~

RESPONSE 6-3

Refer to Response 6-2. Comment noted.

COMMENT 6-4

~~Beetle.~~ Five special status plants occur in the Plan Area – slender orcutt grass, Sacramento orcutt grass, Aharts dwarf rush, Boggs lake hedge-hyssop, and legenere. These would all be destroyed by the proposed project.

RESPONSE 6-4

Refer to Response 6-2. Comment noted.

COMMENT 6-5

There are 455 native trees with a diameter at breast height of 6 inches or greater – 453 are Fremont Cottonwood and 2 are Pacific Willow. Also present in the Plan Area are 22 non – native trees with a diameter at breast height of 6 inches or greater. All of these trees would be destroyed by the proposed project.

RESPONSE 6-5

Refer to Response 6-2. Comment noted.

COMMENT 6-6

Offsite infrastructure near the proposed project would damage or destroy riparian habitat, marsh habitat, and native Oak trees.

RESPONSE 6-6

Refer to Response 6-2 and based on page 6-68, detailed construction plans are not available at this time. The offsite sewer trunk line in Zinfandel Drive was analyzed in the Mather Field Specific Plan Amendment EIR (County Control Number PLNP2013-00044), and project-level impacts and mitigation were identified. Impacts associated with offsite improvements are discussed at a programmatic level. The Plan Area does

not contain designated sensitive natural communities other than vernal pools and the cottonwood woodland that will be appropriately mitigated.

COMMENT 6-7

Fuel lubricants, solvents, and other hazardous materials used at the airbase may be released into the environment by excavation and construction activities. ~~18 percent of the Mather South Plan is in the over flight zone –~~

RESPONSE 6-7

Mather Field was operated as a federal military installation and was subject to Environmental Protection Agency (EPA), U.S. Department of Defense, U.S. Air Force, Cal EPA and California Department of Toxic Substances Control (DTSC) oversight for hazardous substances remediation. In addition, the Project will be required to comply with federal, state, and local hazardous materials regulations and codes monitored by the state and/or local jurisdictions. The Project would implement Mitigation Measures HM-1, HM-2, HM-3, and HM-4 to require the preparation of a site-specific Health and Safety Plan, conducting of soil sampling before construction activities begin, preparation of a contaminated soil contingency plan, and notification of future landowners of the potential for hazardous materials. As indicated in Chapter 11 of the DEIR, these mitigations will ensure less than significant impacts.

COMMENT 6-8

~~activities.~~ 18 percent of the Mather South Plan is in the over flight zone – this includes a community center and housing with 5 to 10 units per acre. This is a safety concern and many interfere with airport operations.

RESPONSE 6-8

Chapter 5, Airport Compatibility, specifically addresses the portions of the Plan Area located within the Overflight Zone. As mentioned on page 5-16, there is a slight elevated risk associated with living in an Overflight Zone, but overall risks are not considered to be substantial. Plate AC-6 provides a map showing these proposed land uses within the Overflight Zone. None of the restricted uses cited in the CLUP land use compatibility table are proposed within the Overflight Zone. Therefore, all proposed land uses are compatible with the allowed uses within the Overflight Zone.

COMMENT 6-9

Tri–Colored black birds forage in the Plan Area. Increased noise and human activity could disrupt breeding near the construction area.

RESPONSE 6-9

Refer to Response 6-2 and Mitigation Measure BR-13.

COMMENT 6-10

The Proposed project would destroy nesting and wintering habitat of the burrowing owl. Adult owls, eggs, and juvenile owls would be killed by construction of this project.

RESPONSE 6-10

Refer to Response 6-2 and Mitigation Measure BR-14.

COMMENT 6-11

Northern Harriers, White – tailed kites, and loggerhead shrikes occur in the Plan Area and their numbers will be reduced if this habitat is destroyed. Short – eared owls and grasshopper sparrows would be impacted by this project and this would push these species further along towards extinction.

RESPONSE 6-11

Refer to Response 6-2 and Mitigation Measure BR-16. Comment noted.

COMMENT 6-12

Annual grasslands and scrub and open portions of cottonwood woodland throughout the Plan Area are habitat for American Badgers. There are 2 dens in the plan area and one in the Mather preserve. Construction will cause the death of adult badgers and young badgers – this will result in further decline of the species.

RESPONSE 6-12

Refer to Response 6-2 and Mitigation Measure BR-17. Comment noted.

COMMENT 6-13

Western pond turtle adults, eggs, and hatchlings would be killed by the proposed project.

RESPONSE 6-13

Refer to Response 6-2 and Mitigation Measure BR-11. Comment noted.

COMMENT 6-14

There are numerous trees in the project area that provide nest sites for the Swainson's hawks. The proposed project would destroy these trees and remove approximately 592 acres of annual grassland foraging habitat, which would result in death of individuals and eggs. Swainson's Hawks foraging habitat value is greater in large expansive open space and agricultural areas than in areas that have been fragmented by agricultural – residential or urban development. The Swainson;s Hawk is listed as threatened under the California Endangered Species Act and has had a 90% decline in statewide population numbers. The loss of nesting and foraging habitat increases the likelihood of this species becoming endangered and eventually extinct. Therefore, direct and indirect impacts by the proposed project on the Swainson's Hawk would be significant.

RESPONSE 6-14

Refer to Response 6-2 and Mitigation Measure BR-12.

COMMENT 6-15

The Plan Area contains habitat for nesting birds protected under the California Fish and Game Code Section 3503 and the Migratory Bird Treaty Act.

RESPONSE 6-15

Refer to Response 6-2 and Mitigation Measure BR-20. Comment noted

COMMENT 6-16

Take of vernal pool branchiopods can eliminate a portion of the genetic pool available to the species thereby eliminating the overall genetic diversity of the species. If the genetic diversity is severely reduced, the chances of a species persisting through unpredictable future environmental conditions are reduced. If this project is approved and other planned projects are approved (New Bridge, Jackson Township, and West Jackson), then 17,688 acres of grassland habitat will be lost. There are no more large expanses of interconnected wetland complexes surrounded by open space and no feasible mitigation available to reduce impacts to a less - than - significant level. Therefore, the project would result in a significant and unavoidable cumulative impact.

RESPONSE 6-16

Refer to Response 6-2. Comment noted.

COMMENT 6-17

I keep hearing about " build out " of Sacramento County. Sacramento County does not have to build upon every bit of open space. Sacramento County does not have to drag in everyone from other places to Sacramento County. Once this open land is gone it is gone forever. Future generations will never be able to see the land and to know the animals that live there. You must not allow all our open space to be destroyed. During all of the hearings for Sacramento County's General Plan, The Sacramento County Planning Commission and the Sacramento County Board of Supervisors consistently voiced their desire to retain large areas of open space in Sacramento County for wildlife habitat, for future farm and ranch land and for people to see and enjoy open space.

RESPONSE 6-17

This comment does not identify any deficiencies in the DEIR analysis. This comment will become part of the administrative record and will be considered by the decision makers.

COMMENT 6-18

At the very least, Alternative 2: Biological Resource Avoidance Alternative – would provide additional buffers around sensitive vernal pools along Kefir Blvd in the southern portion of the proposed project and around the critter pool in the center of the Plan Area. Under this alternative the Plan Area would still develop 2,827 residential units.

RESPONSE 6-18

This comment does not identify any deficiencies in the DEIR analysis and prefers Alternative 2 development concept identified on Plate Alt-1.

LETTER 7 – CHP EAST SACRAMENTO AREA OFFICE

R.M. Johnson, Lieutenant; written correspondence; February 21, 2019

COMMENT 7-1

The East Sacramento Area Office of the California Highway Patrol recently received a "Notice of Completion," Environmental Impact Report for the proposed Mather South Community Masterplan Project, State Clearing House (SCH) #2014062087. After our review, we have concerns with the potential impact this project could have on traffic congestion.

Our concerns relate to the proposed construction of a master planned community to include up to 3,522 residential dwelling units, an environmental education campus with 200 multi-family units, a 21 acre research and development park, two elementary schools, 21 acres of commercial-retail with up to 225,000 square feet of retail space, 26 acres of neighborhood parks and a 17 acre community park, along with multi-use pedestrian and bicycle trails. This project is located along the Jackson Road corridor in Sacramento County. There are several major roadways that will be impacted by the increased traffic congestion. Jackson Highway, State Route 16 (SR-16), is a two lane undivided highway with minimal shoulders, surrounded by agricultural fields. SR-16 already experiences significant traffic delays/congestion during commute hours and heavy commercial vehicle traffic due to the commercial businesses within the area, and the County Landfill. SR-16, Sunrise Boulevard, Zinfandel Drive, Bradshaw Road, and Mather Field Road are roadways within our jurisdiction and the California Highway Patrol, South Sacramento Area's jurisdiction that are significant ingress and egress routes that will be used to access the proposed community from both US Highway 50 and State Route 99 (SR-99). There are numerous cross streets within the vicinity of the planned project that will also see an increase in traffic congestion.

The aforementioned roadways currently experience traffic congestion during commute hours, and without proper traffic management engineering prior to the development of the proposed community, traffic congestion will significantly increase. This project could have a negative impact on our operations due to the increased traffic congestion, which could lead to a potential increase in traffic collisions within our jurisdiction as well as our bordering South Sacramento Area.

RESPONSE 7-1

The purpose of this EIR is to inform decision makers and the public about the project's significant environmental impacts and ways to reduce or mitigate them. Chapter 17 is specific to traffic and circulation of the project, and identifies the impacts and provides appropriate mitigation measures. Thus, no changes to the document are necessary. This comment will become part of the administrative record and will be considered by the decision makers.

LETTER 8 – CORDOVA RECREATION AND PARK DISTRICT

Laura Taylor, ASLA; written correspondence; February 22, 2019

COMMENT 8-1

As mentioned in previous comments CRPD does not accept parcels that are encumbered by utilities or drainage easements. The District also does not maintain areas with drainage basins or bisecting regional trails. Because Park 4 is partially divided by a drainage basin it may be difficult to locate the preliminary program for three soccer fields in the community park. *(See comments on January 5, 2018.)* Trends and needs may change the final program for the park. The *Mather South Community Master Plan* document states that some flexibility in the final configuration of the neighborhood parks during the tentative map phase. Some flexibility on the final configuration of the community park may be helpful depending on the timing of the final map approval and the final program established for the community park.

RESPONSE 8-1

This comment does not identify any deficiencies in the DEIR analysis and will be further addressed during the tentative map process.

COMMENT 8-2

AESTHETICS

There does not seem to be a specific reference to lighting for sports fields as a part of the future impacts of the master plan development. The EIR should address lighting for sport fields in community parks.

RESPONSE 8-2

Park details such as park programming and lighting are not fully defined at the master plan stage and, therefore, a project-level analysis of potential future lighting impacts cannot be made. The DEIR includes a programmatic analysis that identifies a potentially significant impact associated with new lighting in the Project, and includes Mitigation Measure AE-1 that requires all lighting applications to use fixtures approved by the International Dark Sky Association. Further analysis of lighting impacts will be the responsibility of the lead agency designing and developing of the park.

COMMENT 8-3

Park 3 is located next to a water tank utility yard. This park may require additional screening. A future wall or fence around the utility yard will need to be located outside the Quimby park land.

RESPONSE 8-3

The comment is noted, but does not address any deficiencies in the DEIR. This revision does not change the conclusion in the FEIR. Such details will be further addressed during the subsequent tentative map process.

COMMENT 8-4

BIOLOGICAL RESOURCES

Seasonal wetlands appears to be located within park site 1 and 2 (Plate BR-1). White Tailed Kite has been observed on park site 2 and Northern Harrier has been observed on park site 5 (Plate BR-2), Requirements to mitigate existing wetlands, protected plants and animals will have to be met before the park lands are turned over to CRPD.

RESPONSE 8-4

Comment noted. The DEIR includes mitigation measures for biological resources including wetlands and protected plants and animals that are applicable to all development on the Project site, including parks.

COMMENT 8-5

GEOLOGY AND SOILS

Park site 1 has the soil type; Red Bluff-Redding Complex (Table GS-2 and Plate GS-3). This material has a high shrink and swell potential which may be of concern for construction of structural elements. CRPD requires a base condition for acceptable soil that can be utilized for park development. The base condition for acceptable soil is specified in the Cordova Recreation and Park District's Design and Construction Standards Manual in Section 2.01. The standards require that soils on all the park sites are tested before they are accepted by the districts.

RESPONSE 8-5

On page ES-25, the construction permitting process within Sacramento County requires completed geotechnical reports for developments located within areas known to contain expansive soils and subsequent project conditioning to eliminate the hazardous soil conditions.

COMMENT 8-6

HAZARDS

Based on the close proximity of a former Air Force Base, hazardous materials (including munition debris, explosives and asbestos), have been found within the Master Plan area. Park sites 1, 2 and 4 include "Areas of Concern" (Plate HM-2). Soil testing, the disposal of contaminated soils in addition to the restoration of disturbed sites will need to be completed before the park land can be accepted by CRPD. Additional testing may also be required before structures can be located on the park sites.

RESPONSE 8-6

Mitigation Measure HM-2 requires soil sampling before ground disturbing activities; refer to Ch. 11 Hazardous Materials for full text of mitigation measures.

COMMENT 8-7

HYDROLOGY, DRAINAGE AND WATER QUALITY

CRPD does not accept parcels that are encumbered by utilities or drainage easements. Because Park 4 is partially divided by a drainage basin it may also be difficult to locate the planned three soccer fields within the park boundary. Some flexibility on the final configuration of the community park may be helpful depending on the timing of the final map approval and the final program established for the community park.

RESPONSE 8-7

This comment does not identify any deficiencies in the DEIR analysis and will be further addressed during the tentative map process. Comment noted.

COMMENT 8-8

NOISE

Table NOI6,states that noise levels in parks can go up to L75. Parks and schools should therefore be added to the 'new noise sources' in the 'Summary of Impacts and Mitigation' table.

RESPONSE 8-8

The word "parks" has been added to page 14-35 to make it clear to the reader that the analysis considers parks as new noise sources. This does not change the conclusions of the analysis.

COMMENT 8-9

PUBLIC UTILITIES

Quimby park land cannot be encumbered by utilities. A storm drain appears to be located on the property line between the Environmental Educational Center and the Park 1. The easement for this line should be located outside the park parcel.

RESPONSE 8-9

This comment does not identify any deficiencies in the DEIR analysis and will be further addressed during the tentative map process. Comment noted.

COMMENT 8-10

TRAFFIC AND CIRCULATION

CRPD recommends that pedestrian and bicycle trails are connected to park sites. Appendix PD-1 indicates that all parks except Park 5 are accessible by the Class 1 bike trail network.

RESPONSE 8-10

This comment does not identify any deficiencies in the DEIR analysis and will be further addressed during the subsequent tentative map process. Comment noted.

COMMENT 8-11

Appendix TR-1 Traffic Impact Report does not specifically address trip generated by use of the community park. The anticipated level of service (LOS) of the local road adjacent to the community park is A-D. The LOS could be influence by peak traffic generated by entering and exiting recreation programs and events at the park.

RESPONSE 8-11

The Traffic Impact Report does address trips generated by the community park. The land use summary for the Project in Table 3.1 on page 59 of the Appendix TR-1 identifies 43.05 acres of Parks and Recreation. Furthermore, page 9 of the document states "the daily roadway segment capacity methodology takes into account typical peak hour volume profiles, as well as the effects of signalized intersections". The level of service at facilities connected and adjacent to the community park was calculated using best practice HCM methodology. As such, the results are reasonable and adequate.

COMMENT 8-12

Design of the future community park will need to include on-site parking. Community parks benefit when on-street parking is available to accomodate spill-over parking for larger events. In this case an elementary school site is proposed adjacent to the park site which could possibly provide capacity for spill-over parking; however, there is a recent trend for schools to lock gates across their parking lot entrances after hours. The street section for Parkway Drive immediately adjacent to the community park does not include on-street parking lanes (figure 4.4-4 of of Appendix PD-1 *Mather South Community Master Plan.*).

RESPONSE 8-12

This comment does not identify any deficiencies in the DEIR analysis and will be further addressed during the subsequent tentative map process and as CRPD goes through the community park design process with the applicant. Comment noted.

COMMENT 8-13

LAND USE

The Master Plan falls short of the County's Quimby requirement for park land by 0.24 acres. CRPD recommends that this area be incorporated into the community park (potentially by subtracting the same amount of land from the adjacent open space corridor). This would also change the balance between community parks and neighborhood parks, to closer match CRPD's standards (of 52% community parks and 48% neighborhood parks). This modification would affect Table LU-1.

RESPONSE 8-13

The Mather South Community Master Plan includes policies in Section 5.7.1 and 5.7.1 to address the potential shortfall in Quimby parkland acreage requirements. Specifically, Policy 5-7 requires this to be addressed during the tentative map process in Phase 1.

COMMENT 8-14

WATER SUPPLY

Estimated water needs for future park sites have been adequately addressed in the Water Suppply Assessment for the project.

RESPONSE 8-14

This comment does not identify any deficiencies in the DEIR analysis and no revision to the document is required. Comment noted.

COMMENT 8-15

FINANCE

The *Public Facilities Finance Plan* (Appendix PD-3) and the *Urban Services Plan* (Appendix PD-4) seem to be reasonably consistent with CRPD's input. However, some of CRPD's comments made on these documents on December 10, 2018 are not reflected. The current USP does not reflect the previously made comment, " Page 20, second paragraph, first sentence: Delete the second part of the sentence "… or park maintenance will be included in the Mather South Maintenance/Transit CFD." This option is not acceptable to the District."

RESPONSE 8-15

This comment does not identify any deficiencies in the DEIR analysis and revisions to the PFFP have been made. Comment noted.

LETTER 9 – COUNTY OF SACRAMENTO DEPARTMENT OF WATER RESOURCES

Michael Durkee; written correspondence; February 22, 2019

COMMENT 9-1

On page 1-24, 1-32, and 5-21, it is mentioned that the drainage basins could be muli-purpose basins and have a secondary purpose as an "informal recreation resource". Based on the Mather South Storm Drainage Master Plan (DMP), the basins were designed as wet basins which means the basins will hold water year-round. Due to safety concerns, Water Resources requires that wet basins are fully fenced to prevent the public from entering the basins. Because the basins will hold water year-round and will not be accessible to the public, using the basins as an "informal recreation resource" does not seem possible.

RESPONSE 9-1

This comment does not identify any deficiencies in the DEIR analysis and will be further addressed during the tentative map process. Comment noted.

COMMENT 9-2

On page 1-24, the Open Space Trails and Basins section indicates that the drainage basins would be "naturalized with trees and native plant materials". As mentioned above, the basins will be fully fenced wet basins and Water Resources restricts landscaping within basins to native grasses, due to limited drainage maintenance resources. Any landscaping "naturalization" would need to occur outside the basin fencing.

RESPONSE 9-2

See Response 9-1.

COMMENT 9-3

On page 5-21, in the second paragraph, it is mentioned that there are nine drainage basins. According to the latest Mather South DMP, there are ten drainage basins.

RESPONSE 9-3

The comment is correct that the DMP calls for ten drainage basins. Revisions have been made throughout the FEIR to reflect the correct number of basins.

COMMENT 9-4

On page 12-13, the title of the Stormwater Quality Design Manual is not correct. The 2018 manual does not cover the South Placer Region, it is only for the Sacramento Region.

RESPONSE 9-4

The comment is correct and revision has been made to the FEIR.

COMMENT 9-5

On page 12-24, the Sacramento County Stormwater Quality Partnership Hydromodification Management Plan (HMP) is discussed in the context of being in a draft form. The Sacramento County Stormwater Quality Partnership HMP was finalized in December 2017.

RESPONSE 9-5

The comment is correct and revision has been made to the FEIR.

COMMENT 9-6

On page 12-25, Low Impact Design (LID) features are referred to as optional to reduce the required water quality treatment volume. Based on the 2018 Stormwater Quality Design Manual, LID measures are required for all projects.

RESPONSE 9-6

Comment noted; the referenced text has been updated in the FEIR.

LETTER 10 – MATHER ALLIANCE

The Mather Alliance Core Group; written correspondence; February 21, 2019

COMMENT 10-1

The Mather Alliance core group and its members wish to express sincere thanks to Sacramento County Supervisors, County staff, and the Lewis Group for their continuing efforts to involve community members in shaping the new development proposed for the retired Mather Air Force Base. We feel grateful for the opportunity to advocate for the responsible use and management of Mather Field's valuable resources.

Area residents and Mather wetlands supporters are particularly proud of the cultural, historical, and ecological significance of these lands of Sacramento County. Our culture is one of deep respect and appreciation for the plants and wildlife that live among and around us. Mather's historical significance as an Air Force base of great strategic importance for national security and as a continuing aviation training facility makes us proud. As does our local ecology which includes world-class vernal pools filled with extremely rare species, some of which have not even officially been named yet by scientists. There is much to be proud of at Sacramento County's Mather and much to protect.

RESPONSE 10-1

This comment does not address to the environmental issues analyzed in the DEIR. Thus, no changes to the document are necessary. This comment will become part of the administrative record and will be viewed by the decision makers. Comment noted.

COMMENT 10-2

In addition to the points we addressed below in our comments on the Mather South Draft Environmental Impact Report and Community Master Plan, we wish to make a special request. To reflect our esteem and gratitude for Sacramento County Supervisor Don Nottoli's dedicated involvement with and attendance to our community, the Mather Alliance requests that a road in the new community be named "Nottoli Way." We feel "Nottoli's way" is exemplary. As a community leader and public servant, he consistently listens to our community members' concerns and demonstrates that he genuinely cares about our future.

RESPONSE 10-2

This comment relates to the merits of the project, not to the environmental issues analyzed in the DEIR. Thus, no changes to the document are necessary. This comment will become part of the administrative record and will be considered by the decision makers. Comment noted.

COMMENT 10-3

Watershed to the Critter Pool and Fill Dirt in Environmental Campus Parcel

Area of Concern: Environmental Campus

Issue/Impact: Unnecessary loss of valuable natural features and historic resources

As discussed at length in various stakeholder and supervisory board meetings during consideration of the broader Mather Field project, the community value of the former USAF munitions storage complex (currently designated as parcel EC in the Draft Mather South Community Master Plan) stems from its historic significance as part of Mather Air Field and the natural features located adjacent to it and running through it. While we appreciate that this parcel has been designated as a site for a future Environmental Campus, we are concerned that the specifics of the proposed grading and drainage plan (reference **Exhibit J of Appendix HY-1**: *Mather South Drainage Master Plan Developed Condition Trunk Drainage and Basins*) unnecessarily erases both the natural and historic resources presently existing on this parcel.

As presently indicated on the drainage plan, the EC parcel will be filled and graded to elevations ranging from 156 to 160 feet. Topographic data (**reference Exhibit C of Appendix HY-1**) indicates that the current surface elevations in this parcel vary from 149 to 155 feet (not including structures). Consequently, almost the entire EC parcel is slated to be filled and leveled to depths as much as 9 feet, including the existing drainage swale that presently sweeps through the western half of the parcel from parcel SP1 toward the preserve on the western margin and all of the existing historic structures.

We contend that this represents an unnecessary loss of natural and historic resources that could potentially enhance the desirability of the planned Environmental Campus, school (parcel SP1), community center (parcel CC) and park (parcel PARK 1). Natural features quite clearly enhance the livability of a community and business environment, while the historic features represent a unique character quality that the community has expressed, many times, its interest in preserving as part of Mather Field (and by direct association, Rancho Cordova) history. We also are concerned about the visual impact of increasing the grade on this parcel will have on adjacent resources, especially the Critter Pool (parcel OSNP1), which was specifically set aside to help protect the irreplaceable biological resources located in that vernal pool. As currently envisioned, the grade from the EC parcel will drop a full 10 feet on the eastern margin down to an open space drainage (OSD6) and the Critter Pool. Given the proposed roadways and elevations of other developed parcels, the Critter Pool will be effectively isolated visually and topographically, which we believe may cause its perceived value (and thus its preservation) to be diminished in the eyes of residents living at Mather South.

Recommendations:

We would like to see the grading plan for the EC parcel (and possibly adjacent parcels) revised to help preserve and enhance existing natural features that we believe will help make the entire community (business and residential) more livable and environmentally friendly. Specifically, we contend that drainage from parcel SP1 could be contained in a detention basin/bioswale on its southern margin and used to enhance the drainage swale through the EC parcel as part of the environmental draw of the parcel.

RESPONSE 10-3

The purpose of the Storm Drainage Master Plan was to assist Sacramento County in the evaluation of the proposed drainage facilities planned for the Project. As such, this study is intended to satisfy the requirements of Sacramento County for a large-scale drainage master plan for the Project, not design level detail normally required for review and approval of individual parcels within the Mather Specific Plan area. The EIR analysis is based on the proposed project, and includes mitigation where appropriate for the impacted resources in the Biological Resources chapter.

A final grading plan for the Environmental Campus (EC) will be prepared when a specific development proposal is made for the site. At that time, the grading concept for the EC Site can be adjusted to preserve the existing topographic features of the site to the maximum extent practical (e.g., preservation of the abandoned weapons storage buildings and the existing drainage swale that meanders across the northwestern portion of the site from the SP1 parcel). The principal factor that may impact the ability to preserve these existing physical features of the EC parcel will be the ability to develop an efficient drainage system for the Mather South development. The final design of the drainage system, including detention facilities, will be developed when the specific development proposal for the EC site is submitted to the County for development review.

COMMENT 10-4

Issue/Impact: Proposed drainages for the northern half of the Mather South Master Plan rely on very large detention basins concentrated on the western margin of development.

For much of the northern half of the planned development, the proposed drainage lines redirect drainage toward one of three large detention basins along the western margin of the community (reference **Exhibit J of Appendix HY-1).** Designated as Basin-01, Basin-02, and Basin-03 in the drainage plans, these areas represent a significant accumulation of surface drainage in a limited area.

While we understand the need for hydromodification mitigation with respect to existing drainages, we are concerned that reliance on these three large basins presents a potential subsurface hydraulic impact to preserve areas located immediately to the west. Furthermore, basins -01 and -02 also require the addition of at least 6 feet of surface fill to construct the berm around them and will visually stand out as very unnatural features relative to the preserve to the west and the environmental campus, park, and community center to the east.

Recommendations:
We contend that drainage management and hydromodification mitigation plans can be better achieved through use of more and smaller detention basins/bioswales dispersed across the northern half of the development area. By adopting a more dispersed approach, the natural drainages already present on the site can be more effectively used to manage stormwater discharge. Furthermore, smaller basins and swales incorporated along the margins of developed parcels help to incorporate natural features within the community and help break up the visual impacts of development, both of which enhance the livability of the community as a whole.

We suggest that a good example of this more dispersed approach to drainage management exists in parts of Folsom where numerous small basins and marshes between neighborhoods serve to create a more natural and livable condition. Paired with walking/cycling paths, these natural buffers create a much more desirable community to live in and help mitigate the typical trappings of visually uninspiring landscaping and concrete block soundwalls.

As discussed previously as an example, we believe a small marsh filled detention basin at the southern margin of parcel SP1 would serve as an excellent way to manage stormwater flows, supply water to a visually impactful natural drainage across the Environmental Campus, and could potentially serve as a valuable onsite natural learning resource for the future school.

RESPONSE 10-4

Refer to Response 10-3. Comment noted.

COMMENT 10-5

Issue/Impact: Proposed grading and drainage plans may still impact the health and long-term viability of the Critter Pool

As noted previously, the proposed grading plans for the Environmental Campus present an unfortunate visual impact on the Critter Pool and parcel OSNP1. While we deeply appreciate and value that this area has been set aside as a preserve, we are concerned that its position relative to other proposed developments around it might isolate it as an undervalued and unmaintained resource that could eventually impact its biologic viability.

Our review of historic aerial imagery of the region prior to construction of the Folsom South Canal indicates that the Critter Pool was once part of a much larger and expansive vernal pool and swale complex that was subsequently buried beneath excavation overburden from canal construction. We contend that despite burial, the subsurface hydrology that once existed through this pool and swale system continues to channel water toward the Critter Pool and beyond. In fact, we believe that the biological diversity and extended wet period found in the Critter Pool is due in large part to the former subsurface hydrologic system sustaining groundwater flow to this location.

Thus, we are concerned that development of residential parcels R5, R6, R13 may have the unintended effect of depriving groundwater flow to the former pool and swale system, eventually degrading the hydrologically favorable conditions found at the Critter Pool.

Recommendations:

We believe that parcel OSNP1 provides an excellent buffer to protect the health of the Critter Pool. Furthermore, we believe that development of parcels R5, R6, and R13 can proceed as planned. However, we recommend that the drainage plans be modified to include the addition of several small stormwater basins/marshes (perhaps one per parcel) to contain surface runoff and allow groundwater infiltration through those basins into the subsurface hydrologic system that feeds into OSNP1 and the Critter Pool. Our resident geologic consultant would be happy to share the details of the former vernal pool and swale system and help guide planners in placing these detention basins.

Adding intermediate drainage basins would have the additional benefit of reducing potential peak flows to the stormwater system, thus decreasing the need for larger basins elsewhere and allow peak discharges to be dispersed to natural drainages more effectively. As discussed previously, these smaller basins would have the additional benefit of helping incorporate natural environments into the community, making them more livable and visually interesting. Such natural areas will also help tie the community in with the Environmental Campus and preserve, which we contend should be an integral part of the draw to living at Mather.

With respect to grading issues, please reference the previous discussion regarding grading and fill on the Environmental Campus.

RESPONSE 10-5

Refer to Response 10-3. Comment noted.

COMMENT 10-6

Issue/Impact: The source and quality of fill required for grading in some portions of Mather South is not clearly defined. The DEIR and community Master Plan do not contain specific protections to prevent potentially contaminated soil disturbance and/or redistribution or noxious weed dispersal migration as applied to cut/fill materials sourced onsite or imported.

It is apparent that some portions of the Mather South development are slated to undergo a significant amount of grading and fill. It is unclear from our review of existing topography (**reference Exhibit C of Appendix HY-1**) in comparison with proposed grading and drainage plans (reference **Exhibit J of Appendix HY-1)** if sufficient material can be cut from higher elevations and regraded to infill lower lying areas. If adequate material for fill cannot be found onsite, we are concerned that imported fill materials could pose a risk to waterways and the nearby preserve if they are sourced from contaminated locations and/or areas with noxious/invasive weed problems.

Even if fill materials can be sourced onsite, the DEIR already notes that additional hazardous materials might be potentially uncovered during grading, notably in former USAF fuel storage, munitions disposal, and small arms firing range locations. However, there is ample reason to suspect that not all former USAF activities in the area were documented. Other decommissioned USAF sites (notably McClellan) have turned up some potentially serious contaminants in recent history, so the potential for unknown contaminants turning up in previously undocumented locations is not without precedent.
Although the DEIR specifies that a Contaminated Soil Contingency Plan must be submitted to the County prior to construction, there is no allowance for public review of this plan to ensure that adequate protections and monitoring procedures are in place to prevent disturbance and redistribution of potentially contaminated soils.

Furthermore, there are already well-documented and ongoing invasive weed problems occurring within and around the Mather preserve, especially toward the northern end. The DEIR does not appear to contain any language specifying mitigation procedures or best practices to ensure that grading activities for the Mather South development do not inadvertently advance the spread of noxious weed species into the southern end of the Mather preserve, either through aerial dispersal or via existing waterways.

Recommendations:
We would like to see some additional clarification of planned excavation, grading, and imported fill plans, procedures and policies, either in the DEIR or in the Mather South Community Master Plan. Noxious/invasive weed management and dispersal mitigation plans should be a requisite component of the construction application process for this sensitive area. Such plans (including the Contaminated Soil Contingency Plan) should be made available for public review prior to approval and community input from stakeholders (especially those familiar with weed management and abatement best practices) should be solicited to ensure that environmental degradation to the Mather preserve is not exacerbated.

RESPONSE 10-6

The Drainage Master Plan (Appendix HY-1) contains some details regarding planned site grading in the Project Area (Exhibit H). On page 10-13, it is identified that the Mather South Project would be required to comply with the Sacramento County Land

Grading and Erosion Control Ordinance (Sacramento County Code Ch. 16.44). The ordinance was established to minimize damage to surrounding properties and public rights-of-way; limit degradation to the water quality of watercourses; and curb the disruption of drainage system flow caused by the activities of clearing, grubbing, grading, filling, and excavation land. According to Mitigation Measure HM-3, prior to construction, the applicant shall submit a Contaminated Soil Contingency Plan to the County for review and approval.

Although the Mather South project is not seeking State and federal permits through the SSHCP, the Mather Preserve is identified as a component of the hard-line preserve strategy in the SSHCP. Therefore, the SSHCP's Avoidance and Minimization Measures (AMMs) are applicable to certain activities adjacent to the Mather Preserve. Specifically, AMMs EDGE-10 and BMP-2 include measures to prevent the transport of non-native invasive species onto preserves:

> **EDGE-10** (Prevent Invasive Species Spread): Completed Covered Activities (including roads) will be maintained in a manner that avoids the spread of invasive species into Preserve and Open Space areas. Such maintenance measures will include the following:
>
> - To prevent the transport of non-native invasive species onto Preserves, before bringing any equipment onto an SSHCP Preserve or Preserve Setback, equipment must be cleaned of mud, dirt, and plant material. Cleaning will occur in the infested area or another appropriate location as approved by a Plan Permittee.
>
> - Mowing rotation will start in un-infested areas and move to infested areas.
>
> - Invasive plant prevention techniques will be incorporated into maintenance plans.
>
> - The SSHCP Implementing Entity will survey road shoulders, ditches, and rights-of-way that border SSHCP Preserves for invasive weeds or other exotic plant species. Where roadside weed infestations have reached a critical control point, the Implementing Entity or Land Use Authority Permittee will apply the appropriate manual, mechanical, or chemical treatment.
>
> **BMP-2** (Erosion Control): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will install temporary control measures for sediment, stormwater, and pollutant runoff as required by the Plan Permittee to protect water quality and species habitat. Silt fencing or other appropriate sediment control device(s) will be installed downslope of any Covered Activity that disturbs soils.
>
> Fiber rolls and seed mixtures used for erosion control will be certified as free of viable noxious weed seed. As discussed in Section 5.4.2, Covered Species Take Avoidance and Minimization Measures, erosion controls installed in or adjacent to Plan

> Area modeled habitat for giant gartersnake (*Thamnophis gigas*), western pond turtle (*Actinemys marmorata*), California tiger salamander (*California tiger salamander*), or western spadefoot (see Chapter 3) must be of appropriate design and materials that will not entrap the species (e.g., not contain mesh netting). Regular monitoring and maintenance of the project's erosion control measures will be conducted until project completion to ensure effective operation of erosion control measures.

It is anticipated that the State and federal permits obtained for the Mather South project will contain similar requirements to EDGE-10 and BMP-2 to ensure a consistent approach with the adopted SSHCP AMMs.

COMMENT 10-7

Issue/Impact: The lack of coordination and cooperation between the current Preserve Manager and Mather stakeholders is of great concern to the Mather Alliance and other parties interested in preserving Mather's vernal pools.

A number of local vernal pool experts who care about the Mather preserve have worked for preservation of its vernal pools for years without compensation or payment. Their efforts come from a sense of duty of stewardship to protect an extremely rare resource that is continuously disappearing via land development - the California Central Valley vernal pool. Mather's vernal pool expert constituents have been effectively cut off from participation in Mather preserve management by the current Preserve Manager. This lack of coordination and cooperation eliminates the Preserve Manager's access to valuable information that could be made available from years of experience and knowledge of the Mather vernal pools. In addition, blocking local experts from the preserve's management discourages that piece of public participation that helped to make the preserve possible.

Recommendation:
The Alliance would like to see a requirement that the Preserve Manager include the input of local vernal pool experts and stakeholders in management actions. In addition, there are a number of volunteers willing to pull weeds in the preserve. Though this method of weed control is not cost effective from a profit-driven model of preserve management, it can be the safer way to remove some invasive plants. Lower cost methods such as pesticide use, controlled burns, and grazing can cause unintended negative impacts to vernal pool species. When free labor is available for weed pulling, it benefits the preserve to use it.

Issue/Impact: The current preserve management efforts are not sufficient to control invasive plant species.

Local vernal pool experts have commented for the last several years, with increasing concern, that not enough is being done to control threatening invasive plant species that are encroaching upon Mather's vernal pools. This could be due to a lack of sufficient funding, or lack of a comprehensive strategy. In either case, the result is a lack of safe and effective action to protect the vernal pool species.

Recommendation:
Again, a number of volunteers are willing to give their time and expertise to help preserve the vernal pools of Mather. We believe Sacramento County would miss a great opportunity by not incorporating these volunteers into the preserve management. The Mather Alliance recommends that the County direct the current Preserve Manager to coordinate and cooperate with local Mather stakeholders. In addition, the Mather Alliance requests that the County adopt a "pay-for-performance" approach for the Mather preserve with specific measurable objectives that the Preserve Manager must meet in order to retain the management contract. There is too much at stake to risk a lack of progress.

RESPONSE 10-7

This comment does not address the environmental issues analyzed in the DEIR. Thus, no changes to the document are necessary. This comment will become part of the administrative record and will be reviewed by the decision makers. However, it should be noted that quarterly reports have been prepared by the Center for Natural Lands

Management to document preserve management activities, and these reports have been shared with stakeholders for their review and comment.

COMMENT 10-8

Issue/Impact: Preserve Access (Page 4-43 of Appendix PD1 Master Plan), Action 4-4: "Provide docent-controlled access to vernal pool preserve areas under the direction and authority of the Sacramento County Regional Parks Department Director."

Though the Mather Alliance appreciates the provision of docents by both the County and Sacramento Splash for guided walks, the Alliance wants to ensure that the public will retain reasonable access to the vernal pool preserve lands and that their access is not limited to guided walks.

Visitors currently access parts of the preserve for amenities that do no harm to the preserve, such as nature appreciation, photography, and meditation. Though Action 4.4 may not intend to limit preserve access to County-supervised visits only, it could be interpreted that way, and we want to ensure the intent is clarified. The preserve is a public resource and should remain open to the public as long as they abide by and respect the rules that are designed to protect the resources therein.

Recommendation:
Add clarifying language to the Action that docents may be provided by the County, but that County-provided docents are not required to be present for members of the public to access the preserve.

RESPONSE 10-8

Action 4-4 is specifically identifying the Sacramento County Regional Parks Department Director authority on docents and Section 5.6 (page 5-11) within the Master Plan identifies the Mather Preserve and Nature Preserve as open space areas of the plan and, therefore, allowing members of the public to access the preserves.

COMMENT 10-9

Issue/Impact: Artificial lighting, especially outdoor lighting, will disrupt the ecosystems and/or safety of plant and animal life within the proposed Mather South development area and its vicinity, including Mather preserve, Mather Lake, and the Mather golf course.

According to The International Dark Sky Association (IDSA) statistical research,[1] "All life relies on Earth's predictable rhythm of day and night. It's encoded in the DNA of all plants and animals. Humans have radically disrupted this cycle by [artificially] lighting up the night. Plants and animals depend on Earth's daily cycle of light and dark rhythm to govern life-sustaining behaviors such as reproduction, nourishment, sleep and protection from predators.

Scientific evidence suggests that artificial light at night has negative and deadly effects on many creatures including amphibians, birds, mammals, insects and plants.

Artificial Lights Disrupt the World's Ecosystems. Nocturnal animals sleep during the day and are active at night. Light pollution radically alters their nighttime environment by turning night into day.

According to research scientist Christopher Kyba, for nocturnal animals, "The introduction of artificial light probably represents the most drastic change human beings have made to their environment. Predators use light to hunt, and prey species use darkness as cover near cities, cloudy skies are now hundreds or even thousands of times brighter than they were 200 years ago. We are only beginning to learn what a drastic effect this has had on nocturnal ecology.

Glare from artificial lights can also impact **wetland habitats** that are home to amphibians such as frogs and toads, whose nighttime croaking is part of the breeding ritual. Artificial lights disrupt this nocturnal activity, interfering with reproduction and reducing populations.

Artificial Lights have Devastating Effects on Many Bird Species. Birds that migrate or hunt at night navigate by moonlight and starlight. Artificial light can cause them to wander off course and toward the dangerous nighttime landscapes of cities. Every year millions of birds die colliding with needlessly illuminated buildings and towers. Migratory birds depend on cues from properly timed seasonal schedules. Artificial lights can cause them to migrate too early or too late and miss ideal climate conditions for nesting, foraging, and other behaviors.

Ecosystems: Everything is Connected. Many insects are drawn to light, but artificial lights can create a fatal attraction. Declining insect populations negatively impact all species that rely on insects for food or pollination. Some predators exploit this attraction to their advantage, affecting food webs in unanticipated ways."

Recommendations:
Request that Lewis Group waive general developer's lighting standards; instead, adopt Model Lighting Ordinance [2](MLO) developed by the IDSA and the Illuminating Engineering Society of North America to address the need for strong, consistent outdoor lighting regulation in North America.

Developed jointly over a period of seven years, the MLO encourages communities to adopt comprehensive outdoor lighting ordinances without devoting extensive staff time and resources to their development.

Prohibit sports field lighting within the development. The excessive amount of light associated with sports fields creates a number of environmental impacts as outlined in the section above.

RESPONSE 10-9

Mitigation Measure AE-1 requires the Community Master Plan to be amended to require all lighting applications to use fixtures approved by the International Dark Sky Association. As discussed in Response 10-6, the Mather Preserve is a part of the SSHCP's hard-line preserve strategy, so the SSHCP AMMs are applicable to development activities adjacent to preserves, including the Mather South project. AMM EDGE-8 relates to outdoor lighting:

> **EDGE-8 (Outdoor Lighting):** All outdoor lighting in Urban Development Covered Activity projects will be designed to minimize light pollution into existing and planned Preserves, except where a Land Use Authority Permittee determines lighting is necessary for public safety or security. Minimization measures may include light fixture placement (e.g., as low to the ground as possible), lamp designs (e.g., shielding, low glare, or no lighting), directing light away from Preserves, or other means to avoid or minimize light pollution. The Third-Party Project Proponent will use the best information available at the time of project design to minimize effects of light pollution on target SSHCP Covered Species (e.g., western spadefoot (*Spea hammondii*), Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), and Ricksecker's water scavenger beetle (*Hydrochara ricksecker*i)).

COMMENT 10-10

Issue/Impact: Sewer Line Trenching on Zinfandel Drive — Impacts to Independence at Mather Community

The draft EIR is silent regarding the impacts to the 1,271 households of the Independence at Mather Community ("the community") during the sewer line trenching on Zinfandel Drive from Douglas Road to Woodring Drive. While construction of this section of the sewer line was in the Mather Field Specific Plan Draft EIR, we believe this issue should also be addressed in the Mather South Community Master Plan as well.

There are only two roads to enter/exit the Independence at Mather community. Closing Zinfandel Road for sewer trenching will eliminate one. This closure will severely impact the remaining entry/exit points to the community: 1) Woodring Drive at Excelsior Road 2) Arnold Way at Excelsior Road. The impact includes adding to the already heavy traffic on Excelsior during commute hours, and potentially causing massive gridlock on Arnold Way and Woodring Drive with vehicles waiting to exit onto Excelsior Road. Additionally, closing Zinfandel Drive, the only eastern entrance to the community, will severely impede response time and access of emergency vehicles to our community.

Further, entrances into the community are currently two-lane, narrow streets with vehicle parking on one side only. Driving space allows one vehicle width for each narrow lane. As a result, when vehicles are parked, these roads do not allow space for motorists to pull over to allow emergency response vehicles to navigate through traffic during peak commute times. Sacramento County representatives have advised the community that they are drafting a traffic and emergency plan. This plan has not yet been shared with the community for review.

Recommendation:
We suggest that during sewer trench construction that Zinfandel Drive remain open with at least one single traffic lane with traffic control flaggers and/or flashing red light. In addition, possibly 1) Limit traffic to deliveries, residents, and emergency vehicles only. 2) Install three-way STOP signs with flashing lights at the intersections Excelsior Road and Woodring Drive, and at Excelsior Road and Arnold Way. 3) Deploy officer-directed traffic during peak commute times.

RESPONSE 10-10

During the time of Zinfandel Drive/sewer trunk line construction, consideration of the existing residents will be a priority and the County will ensure that appropriate measures are made to lessen potential impacts. Mitigation Measure PS-2 of the Mather Field Revised FEIR (PLNP2013-00044) requires preparation of a plan detailing how adequate access will be provided during construction of the Zinfandel Drive/trunk sewer construction activities.

COMMENT 10-11

Area of Concern: Species Mitigation

Issue/Impact: Mitigation measures listed for species are vague.

One of the core values of the Mather community is our concern for the welfare of Mather's wildlife. This planned development necessitates earth movement and deposition that will likely devastate and obliterate over 800 acres of existing habitat for all critters currently living there. The least we can do is ensure that earth movement is done with the greatest of care to minimize the number of animals killed or "taken."

Recommendation:
Include specificity in the mitigation measures to inspect for wildlife pre-construction and to relocate individuals, including provisions for new homes (e.g., for burrowing owls, if present).

RESPONSE 10-11

The Biological Resources Chapter of the DEIR contains extensive analyses of impacts to species and recommends extensive Mitigation Measures that require pre-construction surveys, exclusion and re-location depending on the species being evaluated.

COMMENT 10-12(A)

Area of Concern: Community Theme

Issue/Impact: Request to change community theme from aviation to wetlands and nature preserve. Establish a community theme of nature and open space benefits of the surrounding wetlands preserve. (Reference Mather South Community Master Plan Policies 4.5-11, 6.5.1, 6.10.1)

Residents (and visitors) may respect and steward the environment if they are exposed to featured design elements and education regarding the sensitive wetlands preserve and the need to protect its natural resources, not only for the sake of the environment, but also for the aesthetic value.

Recommendation:
The proposed project theme could salute the area's past aviation history in some areas, while predominantly highlighting the value of a wetlands preserve. We propose to heighten awareness by naming streets after the preserve's wildlife, habitats, and plant species. As part of the homeowner handbook, we suggest the developers include a section of the history, features, and regulations regarding the preserve. And, to bolster our support of preserve access as described above, provide a self-guided walking tour of the preserve with interpretive signage.

RESPONSE 10-12(A)

This comment does not identify any deficiencies in the DEIR analysis. This comment will become part of the administrative record and will be considered by the decision makers. Comment noted.

COMMENT 10-12(B)

Area of Concern: Reinstate Eagles' Nest Road name instead of Zinfandel Drive

Issue/Impact: Previously, the section of Zinfandel Drive south of Douglas was named "Eagle's Nest Road." Without prior public notice to the Community, Sacramento County renamed it Zinfandel Drive. We request Sacramento County reinstate the name to "Eagle's Nest Road."

We believe that reinstating the name of Eagles Nest Road supports the goal of the preserve mitigation package to enhance efforts to preserve and protect the preserve and its wildlife by increasing the consciousness of drivers of the reality that they are passing through or are adjacent to sensitive preserve land: a wildlife protection zone that require slower speeds and higher alertness.

Recommendation:
The name of the "preserve paseo" (the road through the preserve), which is currently shown on the Mather South master plan maps as Zinfandel Drive, should be restored to its original name: Eagles Nest Road. We propose that when drivers traveling on Zinfandel Drive cross Douglas Road, the road signs should change to Eagles Nest Road (as it was previously). This road name change and prominent signage will signal the transition from a fully urban setting to a zone of vernal pool preserves, which will continue to extend further south as other near-term developments come on line.

By introducing a road name change with prominent signage at the northern boundary of the preserve (at Douglas Road), it would demarcate the point at which drivers need to reduce speed to 35 mph* (and associated vibration and road noise) to potentially reduce collisions between vehicles and animals migrating through and beyond the preserve. Again, to reinforce that travelers are entering a sensitive preserve, the mitigation efforts should include prominent signage (funded as part of the mitigation for this development) that announces entrance into a preserve and defines the rules of the road through the preserve.

*The posted speed limit of 35 mph aligns with the Zinfandel Drive traffic calming measures as described in the Mather South Community Master Plan Transportation section.

RESPONSE 10-12(B)

This comment does not identify any deficiencies in the DEIR analysis. This comment will become part of the administrative record and will be considered by the decision makers. Comment noted.

LETTER 11 – FRIENDS OF SWAINSON'S HAWK

James Pachl and Judith Lamare; written correspondence; February 22, 2019.

COMMENT 11-1

1. It is unclear why the narrative on page 6-53 refers to a 1,381 acre Swainson's Hawk foraging habitat permanent preserve (Mather Preserve), because this mitigation measure is not included in the MMRP. It is not and cannot be credited as mitigation for loss of Swainson's Hawk foraging habitat. In 2004 the County conceptually endorsed the creation of a "Wetlands Preserve" within Mather Field in compliance with a 1999 USFWS Biological Opinion relating to water service contracts that deliver water from the Sacramento River for use with Sacramento County Water Agency's Zone 40 Service Area, which includes Mather Field. (DEIR p. 6-1). The Mather Field Wetland Preserve was established according to a 2012 USFWS Biological Opinion for Disposal of Mather Air Force Space for the purpose of protecting high value vernal pool habitat and associated species. (Sacramento County Regional Parks, "Mather Regional Park Vernal Pools") to offset impacts of loss of vernal pool habitat from possible future Mather development. It was NOT established as Swainson's Hawk Mitigation, and it is managed by Center For Natural Lands Management exclusively for benefits to vernal pool habitat and associated species. To also credit the vernal pool preserve as mitigation for Swainson's Hawk would be illegal double-counting.

If County seriously intends to claim the Mather Vernal Pool Reserve as mitigation for Swainson's Hawk habitat loss, it should be stated as a mitigation measure for loss of foraging habitat and the DEIR recirculated so that it can be reviewed by the public, and after adoption, monitored and enforced.

On Page 6-54, the DEIR discusses BR 12 as if it were a mitigation measure for reducing impacts to loss of foraging habitat. (p. 6-53, BR-12. Avoid Swainson's Hawk Nests). In fact, nothing in BR 12, or anywhere else in the DEIR, addresses foraging habitat mitigation.

RESPONSE 11-1

The Mather South project is a portion of the larger Mather Field Specific Plan area, which includes the 1,383 acre Mather Preserve. The Mather Preserve was required to be set aside for mitigation of impacts to biological resources as part of the overall redevelopment strategy of the former Air Force base. The preserve contains 76.9 wetted acres of wetlands, vernal pools, vernal swales, and streams, and 1,306.1 acres of upland habitat that is similar to the habitat that exists on the Mather South project site in terms of foraging habitat value. Edits have been made to the Biological Resources chapter of the FEIR in response to this comment.

COMMENT 11-2

2. On page ES-13, the DEIR describes the impact of loss of Swainson's Hawk nesting and foraging habitat as follows.

> "There are numerous trees in the Plan Area that provide potential nest sites for Swainson's hawk. Project implementation would result in removal of these trees and removal of approximately 592 acres of annual grassland foraging habitat, which could result in mortality of individuals and nest abandonment. A pair of Swainson's hawks were observed visiting a nest and defending territory in the Plan Area from April 29 to June 13, 2014 (Mather Stewardship Network 2014). Although eggs and young were not confirmed at the nest, nesting is probable in the Plan Area and has been documented nearby along White Rock Road. The CNDDB (2018) contains 14 nesting records between 1 and 5 miles of the Plan Area and 27 nesting records between 5 and 10 miles of the Plan Area.
>
> According to the Sacramento County methodology for determining impacts to foraging areas, development of the Plan Area would result in a total loss of habitat suitable for Swainson's Hawk." (DEIR pg. ES-13.)

Failure to mitigate for loss of foraging habitat suitable for Swainson's Hawk is a clear violation of CEQA.

The Plan area is described as 848-acres of vernal pool grassland. The DEIR should include a mitigation measure providing for the permanent protection and management of 848 acres of vernal pool grassland.

RESPONSE 11-2

It is assumed that permanent habitat loss would occur in all land use designations except for the Nature Preserve (33 acres), Mather Preserve (53.2 acres), and Open Space Drainage Corridor (55.6 acres) designations, which comprise a total of approximately 142 acres of the 848-acre Plan Area. Page 6-54 of the DEIR acknowledges that while mitigation is provided to reduce impacts on Swainson's Hawk, the impact remains significant and unavoidable because of regional impacts. The Board of Supervisors will weigh the merits of the project against this impact as a part of the decision-making process.

COMMENT 11-3

3. The analysis concludes that impacts to Swainson's Hawk would be significant and unavoidable, but the DEIR has not included all reasonably available mitigation measures to avoid and to mitigate for impacts. We recommend consultation with the California Department of Fish and Wildlife to determine what the CDFW would recommend to lessen impacts, increase avoidance efforts, and enhance mitigation values in the Mather Preserve. We recommend including all CDFW guidance in the FEIR to ensure that County includes all reasonable mitigation measures. Typically CDFW recommends permanent protection of one acre of SWH foraging habitat for each acre eliminated by urban development in south Sacramento County.

RESPONSE 11-3

Refer to Response 11-1.

COMMENT 11-4

4. Swainson's Hawks are loyal to their nesting territories and more could be done to preserve existing nesting territories if threatened with removal by development. Many Swainson's Hawks nest in urban areas and forage in nearby open space so preservation of existing nesting trees can help mitigate for impacts of development on nesting habitat. Nest sites in Davis, Sacramento, Stockton and Elk Grove are well documented. BR 12 should be expanded to include identification of nesting territories in the Plan area in advance of entitlements so that an effort can be made to preserve in perpetuity any such trees in the Plan area.

RESPONSE 11-4

The DEIR includes mitigation for nesting Swainson's hawks consistent with CDFW guidance. The comment is requesting expansion of Mitigation Measure BR-12 for the purpose of preserving nesting trees in the Plan area. However, as noted in Response 11-5, the majority of the trees in the Plan area are not suitable for retention due to their incompatibility with an urban environment. In addition, preservation of nesting trees could result in Swainson's hawks or other raptors nesting in an urban environment, where they could be subject to greater threats.

COMMENT 11-5

4. The Plan requires removal of many mature trees. (P. ES-18 A comprehensive tree inventory was conducted in the Plan Area in 2014 and identified 455 native trees with a DBH of 4 inches or greater (assumed to be 6 inches or greater now) of which 453 are Fremont cottonwood and two are Pacific willow. The Plan Area also contains 22 nonnative trees with a DBH of 6 inches or greater.). BR 21 and BR 22 address mitigation for these impacts. However, BR 21 and BR 22 do not specify how many trees will be retained in the Plan area, how many will be mitigated in the Plan area (replaced there), and how many will be planted in the Mather Preserve. Please consider that Fremont cottonwood is a preferred nesting tree for Swainson's Hawk and identify areas to retain mature trees. Please evaluate the potential for tree replacement in the Mather Preserve and include a reasonable mandatory number of trees to be planted and stewarded (for at least three years) in the Preserve.

RESPONSE 11-5

Based on BIO-1: Arborist Report, which was conducted in 2014, 61 trees have been recommended for removal from the project area due to the nature and extent of defects, compromised health and/or structural instability noted at the time of field inventory. According to the arborist, at this early stage of the project, it was not recommended the removal of these trees since development plans, including proposed home sites, building footprints, have not yet been finalized, and the precise location of these trees in proximity to planned improvement activities is not known. At that time, it was recommended that these trees be monitored and thoroughly inspected by a qualified ISA Certified Arborist on at least an annual basis to keep abreast of the trees' changing condition(s) and to assess the trees' ongoing structural integrity and potential for hazard in a developed environment. Then prior to initiating development projects, the applicant would be required to be compliant with Mitigation Measure BR-21.

Although Fremont cottonwood is a native tree species, they are not suitable to be retained in an urban environment due to their weak branch strength, high root damage potential, and high allergy health hazard (https://selectree.calpoly.edu/tree-detail/Populus-fremontii).

LETTER 12 – EVA BUTLER

Eva Butler; written correspondence; February 20, 2019

COMMENT 12-1

First, I wish to express my appreciation for the time and energy expended by Lewis Planned Communities (Proponent) and Sacramento County (County) for investing in the process of collaborative, community-based problem solving that led to many improvements evident in the Project. As a result of this investment the Project contributes substantively to the protection of the natural resources of the site by: Setting aside additional vernal pools (the Critter Pool and the Spadefood Pool); Maintaining and enhancing surface water resources through innovative stormwater management technology; Designing roads to decrease human and wildlife impacts; and creatively visioning opportunities for job creation, innovation, and education through an Environmental Campus. This project will be a better neighbor to the adjacent preserve and the wildlife we seek to protect than a less visionary proponent might have conjured. For all of this I join many others in gratitude.

RESPONSE 12-1

This comment does not identify any deficiencies in the DEIR analysis. Comment noted.

COMMENT 12-2

The drainage plan seems to lack a name or identifying for the creek corridor in the southern half of the project area, making it difficult to reference that feature. With respect to that main channel, I recommend that the EIR include a mitigation measure that requires habitat restoration of this Morrison Creek tributary, consistent with site-specific characteristics of the corridor, to maximize natural resource values, aesthetic and passive recreation values, while managing low-flow and high-flow drainage events.

RESPONSE 12-2

This comment does not identify any deficiencies in the DEIR analysis within the project area. The comment is requesting for mitigation for impacts that would not result from the Project, and therefore, cannot be applied in this document.

COMMENT 12-3

This DEIR lacks specificity in mitigation measures. While alternatives are discussed and minimums are proposed, there are no analyses and recommendations of preferred methods. Most of the mitigation measures rely on preparation of future documents, which will not be subject to public disclosure and comment. This inappropriately defers mitigation and prevents interested citizens from participating in the process. As evidenced by the many improvements to the Project through public participation, the public has the ability to improve design and mitigation implementation.

The mitigation measures for potentially significant impacts to biological resources are unnecessarily vague at this point in the approval process. By putting this off to another time in

the future, the DEIR review process essentially asks the public to trust that these yet-to-be-developed plans will provide sufficient mitigation to achieve the proposed less than significant impacts. These plans should be drafted by the County and made public to allow the public to review whether they are indeed sufficient to achieve the promised outcome. In this respect, and for reasons outlined in more detail below, the DEIR is deficient.

Over the past few years the public has commonly seen that the mitigation plans and/or their implementation in Sacramento County fall far short of protecting the public interest in natural resources and species. After the environmental review documents are deemed complete, the process to identify and implement specific mitigation processes referenced in the DEIR take place outside the public purview. This black box, government-to-government consultation, often produce plans that fall short of effective resource protection. With respect to Mather Field specifically, the concerned public has seen the USFWS set low expectations and maintain minimal oversight to ascertain whether the proposed environmental benefits and mitigation goals are attained.

This has been abundantly evident in the creation of the Mather Preserve Management Plan development and implementation. The public comments during the plan development process declared that the funding was insufficient to complete the necessary actions to achieve the desired outcomes. Moreover, the plan lacked specificity and performance metrics. It is abundantly clear to anyone willing to look, that too little is being done to manage the burgeoning problem with invasive plants within the preserve that is supposed to mitigate for the loss of resources on the site of the Project. Actual wetted acreage of vernal pools and habitat for listed species has already substantially diminished, which could result in the County being short of the acreage required to mitigate for projects at Mather Field, including this Project.

Given that both the County and the regulatory agencies are already failing to prevent degradation of the resources intended to mitigate for the Project, the public has no reason to trust that future plans and their implementation will be successful. For these reasons the DEIR cannot simply defer discussion and disclosure of the environmental consequences of the mitigation portion of the project to some future plan. I urge the County to become more proactive in ensuring that the natural resources of the Mather Preserve are being well preserved and managed.

RESPONSE 12-3

The purpose of this EIR is to inform decision makers and the public about the project's significant environmental effects and feasible ways to reduce or mitigate them. Mitigation Measure BR-2 contains appropriate performance standards that must be satisfied prior to groundbreaking activity within 250 feet of vernal pool invertebrate habitat.

Formulation of mitigation measures should not be deferred until some future time; however, measures may specify performance standards which would mitigate the significant effect of the project (CEQA Guidelines, Section 15126.4(a)(1)(B)). Mitigation

Measure BR-2 establishes a minimum mitigation ratio of 1:1, and describes the interface between this requirement and the regulatory permitting process. It is possible that the mitigation plan will involve construction of created wetlands, but it is also possible that it will be achieved through other means (such as purchase of mitigation credits from wetlands which have already been created). Measures which defer these particular details to a later time have been challenged in the courts numerous times, but these challenges have failed. An example in the region is the Clover Valley Foundation v. City of Rocklin (2011) 197 Cal.App.4th 200, in which it was stated that "a condition requiring compliance with environmental regulations is a common and reasonable mitigating measure". This statement was, in fact, a quote from yet another court case: *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 308. Courts have approved deferring the formulation of the details of a mitigation measure where another regulatory agency will issue a permit for the project and is expected to impose mitigation requirements independent of the CEQA process, so long as the EIR included performance criteria and the lead agency committed itself to mitigation. Mitigation Measure BR-2 commits the County to ensuring that mitigation is provided at a minimum 1:1 mitigation ratio, which is a sufficient and common performance standard and is also consistent with County policy.

In reviewing draft EIRs, persons and public agencies should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated. Comments are most helpful when they suggest additional specific alternatives or mitigation measures that would provide better ways to avoid or mitigate the significant environmental effects. At the same time, reviewers should be aware that the adequacy of an EIR is determined in terms of what is reasonably feasible, in light of factors such as the magnitude of the project at issue, the severity of its likely environmental impacts, and the geographic scope of the project. CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commentors. When responding to comments, lead agencies need only respond to significant environmental issues and do not need to provide all information requested by reviewers, as long as a good faith effort at full disclosure is made in the EIR.

COMMENT 12-4

Mitigation for increased traffic impacts on wildlife – I recommend that the fairly recently adopted new name for Eagle's Nest Road (Zinfandel Drive) be dropped and replaced with the original name. Better than the name of a wine grape, Eagle's Nest Road captures the essence of the nature preserve landscape. By re-establishing the original name north of the preserve, the Project can mitigate the future impacts of more traffic on adjacent wildlife in the preserve by giving motorists a trigger to increase awareness of natural areas through which they are traveling. A commitment by the County to execute this name change, together with roadside signage that alerts motorists to a lower speed limit and risk of wildlife crossings, should be included as a mitigation measure.

RESPONSE 12-4

This comment does not identify any deficiencies in the DEIR analysis, but it will be forwarded to the Board of Supervisors for their consideration. Comment noted.

COMMENT 12-5

Mitigation Measure BR-2. (pages 6-40 through 6-41): This mitigation measure is simply a plan to make a plan that satisfies the regulatory agencies. It fails to disclose the environmental impacts of the mitigation itself. This circumvents public disclosure and the public's ability to comment upon the mitigation.

Additionally, any restoration or creation within the Mather Preserve for the purposes of compensatory mitigation must include monitoring of adjacent natural vernal pool habitat and appropriate remediation should these activities result in degradation of the adjacent natural vernal pool habitats. I recommend that the restoration plan elements be modified to include monitoring and potential remediation of adjacent natural vernal pool habitat.

RESPONSE 12-5

See Response 12-3. Mitigation Measure BR-2 requires project applicants to purchase habitat creation credits at a USACE and USFWS approved mitigation bank, record a conservation easement over lands that include created/restored/rehabilitated vernal pool habitat and implement a final preserve management plan. The combination of habitat creation credits and restoration shall be equivalent to 14.53 acres, at a minimum, to compensate for the direct loss of vernal pool habitat within the Plan Area. Additional preservation credits shall be purchased to compensate for indirect impacts if it is determined during ESA Section 7 consultation that onsite preservation and preservation within the Mather Preserve is not sufficient to satisfy the 2:1 preservation ratio necessary to compensate for direct and indirect impacts. The acreage and function of all wetlands that would be removed because of project implementation shall be replaced and restored on a "no-net-loss" basis.

COMMENT 12-6

Mitigation Measure BR-9. (page 6-47). The DEIR acknowledges that both direct and indirect impacts to Western Spadefoot will occur. It goes on to highlight all of the potential indirect impacts including water quality, domestic animals, litter, traffic, noise, etc. Then this mitigation measure goes on to say that the salvage of adults, larvae and eggs, if encountered within the project construction footprint, constitutes mitigation which would render impacts to less than significant. More specificity regarding monitoring and measurable outcomes needs to be made for Western Spadefoot mitigation.

RESPONSE 12-6

As stated on page 6-47, a condition of project approval and before ground disturbing activities, the County shall require future project proponents to retain a qualified biologist to conduct surveys for western spadefoot in areas of potential habitat that would be eliminated by the project. The surveys shall be conducted at the appropriate time of year to detect western spadefoot, generally the breeding season, according to

methods approved by CDFW. If western spadefoot is found in habitat that will be eliminated or made unsuitable for western spadefoot, then adult and larval western spadefoot and egg masses shall be collected and relocated to suitable habitat in the Mather Preserve by a qualified biologist in coordination with CDFW. This mitigation highlights the monitoring and measureable outcomes feasible within the County's process and ensures appropriateness by utilizing CDFW.

COMMENT 12-7

Mitigation Measure BR-15. (page 6-38). The DEIR states on page 6-56 that Western Burrowing Owls (WBO) have not been documented in the plan area. However, WBO have been regularly observed for years, immediately west of the westernmost fence between the Weapons Storage Area and the preserve, in and around ground squirrel burrows. The most recent siting was on 2-21-19.

The Mather Airport has historically been home to many breeding pairs of WBO, which coexisted well with airport operations for decades. Over the last several years breeding pairs of WBO have decreased at Mather Field and throughout the County. An opportunity exists to provide more safe space for WBO within the airport fences. It is recommended that the County review and adopt a plan like the Burrowing Owl Management Plan used at San Jose Airport, which was found to be compatible with safe operation of the airport and improving outcomes for this severely at-risk species.

RESPONSE 12-7

The DEIR correctly states that burrowing owls have not been reported in the Plan Area, but that nesting has been documented on the Mather Preserve west of the Plan Area and there are ground squirrel burrows and debris piles (from former military facilities) in the Plan Area that could be used by burrowing owls. It is important to note the distinction between the words "reported", "documented", and "observed". The EIR preparers must rely on special status species studies and the California Natural Diversity Database (CNDDB) for documented occurrences as a starting point for the analysis. If local observations of special status species are not reported to the CNDDB or to the EIR preparers, the analysis suffers.

According to Mitigation Measure BR-15, if active burrowing owl burrows, or burrow surrogates (e.g., debris piles, culvert pipes) are found on the site, the project applicant shall mitigate the loss of occupied habitat in accordance with guidance provided in the CDFW 2012 Staff Report or the most recent CDFW protocols. In addition, Mitigation Measure BR-14 requires before any ground disturbing activities within 500 feet of potential burrowing owl habitat (i.e., annual grassland containing ground squirrels or debris piles, banks of streams/creeks) the project proponent shall hire a qualified biologist to conduct surveys in accordance with Appendix D of CDFW's Staff Report on Burrowing Owl Mitigation (2012).

COMMENT 12-8

Storm Drainage Master Plan Appendix **HY-1**

The plan details related to Hydromodification (Section Page 39 of 51) and Stormwater Quality (Page 40 of 51) reveal an attempt to go above and beyond the measures typically required to attenuate flood and stormwater pollution. As explained in Section 4.2, the project's ten (10) multi-purpose detention basins will be designed to attenuate peak flow and hydromodification flow duration control storage as well as provide stormwater quality treatment as permanent pool wet basins. The hydromodification strategy that will be employed for the Project includes plans to utilize flow duration control structures in each of the detention basins to accomplish flow matching in the downstream creek systems.

While the project proponent acknowledges that "*the future HMP standards [might] differ from the assumptions built into this master plan*," which could obviate the proponent's ability to implement this superior approach, the County should accept and acknowledge in the final EIR that the proponent may implement the approach that best preserves the quantity and quality of surface waters within the project area, regardless of its alignment with any future County HMP that might be completed. Given the location of this project and the high priority to protect aquatic resources on site, the plan proposed in this DEIR should be the one adopted for implementation, subject to approval by the regulatory agencies.

RESPONSE 12-8

The Mather South Storm Drainage Master Plan was developed to demonstrate at a master plan level how storm water could be managed in the proposed development. Subsequent detailed hydrology analyses will be required as phases of the project move forward through the tentative subdivision map process. At each phase, compliance with the County's Stormwater Quality Design Manual will be verified. The Design Manual is updated periodically to comply with source control, hydromodification control, treatment control, and low impact development measures that are intended to minimize water quality impacts. Comment noted.

LETTER 13 – SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT

Rachel DuBose; written correspondence; February 25, 2019

COMMENT 13-1

Measure AQ-1, Construction Mitigation: Consistent with our CEQA Guide, the construction mitigation fee should be calculated and disclosed based on the DEIR analysis[1]. The mitigation fee should be included in the Final EIR's Executive Summary and Air Quality Chapter, as well as the Mitigation Monitoring and Reporting Plan.

RESPONSE 13-1

Based on modeling completed for the project, NOx emissions exceeding 85 lbs/day would occur in three years over the course of the anticipated 14-year buildout period: the first year of Phases 1, 2, and 3, modeled as 2019, 2023, and 2026. The project would result in total emissions of 4.529 tons of emissions over the threshold, which would result in a total fee of $131,870, plus a 5% administrative fee of $6,794, for a total of $142,664 that would be payable to the Air District. This information, and modifications to Mitigation Measure AQ-1 to reflect this, have been made in Chapter 4 beginning on page 4-26.

COMMENT 13-2

Sacramento Rendering Company (SRC): Since the year 2000, the Sac Metro Air District has responded to 60 complaints per year (on average) from residents located in nearby development projects regarding SRC odors. To provide additional disclosure to new residents, we recommend the FEIR include the attached statement regarding our role in regulating the SRC. Additionally, we request that the County consider including funds in the project's financing plan to reimburse the Sac Metro Air District for increased complaint response anticipated by locating additional sensitive receptors in close proximity to the SRC. Sac Metro Air District staff is available to work with County staff on complaint response funding needs.

RESPONSE 13-2

This comment does not identify any deficiencies in the DEIR analysis. However, the suggested text has been added to the FEIR. The project's financing plan is specific to the public facilities and infrastructure necessary to serve the project; it is not appropriate to include funding in the financing plan for purposes not related to public facilities and infrastructure. However, this comment is part of the administrative record and will be considered by the decision makers.

COMMENT 13-3

Mather South Community Master Plan Air Quality Mitigation Plan (AQMP): We find that the operational AQMP (January 2019) is technically adequate for CEQA purposes. I have attached a copy of our Letter of Technical Adequacy (January 25, 2019). However, we have two concerns with measure SDT-3, Implement NEV Network.

- The measure effectiveness would increase if the network has direct access to Mather Regional Park, including Mather Golf Course. Currently NEVs cannot travel on Zinfandel Drive due to the speed limit, so another pathway is needed to allow the NEV connection to Mather Regional Park. Consider requiring a separate NEV connection in the Master Plan.
- The NEV network as currently planned would share the class II bike lane. Most bicyclists would be discouraged from using the bike lane if NEVs are in the bike lane traveling 35 miles per hour. Consider providing class IV bike lanes to separate NEVs from bikes.

RESPONSE 13-3

This comment does not identify any deficiencies in the DEIR analysis. Comment noted. The adjacent property between Mather South and Mather Regional Park is owned by the County, and includes the Mather Golf Course which is managed by County Regional Parks. Discussions with County Regional Parks regarding a potential connection have occurred in the past and will continue with the goal of expanding the NEV and trail connectivity to the north.

COMMENT 13-4

Greenhouse Gas Offsets: We recommend the County remove reference to the CAPCOA GHG Rx on page 7-26 since it is not a functioning offset program. Existing CARB-accredited offset registries provide both regulatory- and non-regulatory-grade carbon offsets, the latter of which may be more suitable to project needs.

RESPONSE 13-4

The reference to the CAPCOA GHG Rx has been removed from page page 7-26.

COMMENT 13-5

Greenhouse Gas Mitigation Measures: Mitigation Measure CC-2 – Building Energy (page 7-24) discusses the implementation of Tier 1 or 2 of the California Green Building Standards, which includes all-electric space and water heating. We encourage this measure as feasible mitigation and provide the attached technical memorandum discussing the available technologies, costs, and feasibility.

RESPONSE 13-5

Mitigation Measure CC-2 has been updated to prohibit the use of natural gas for space or water heating and cooking appliances in residences.

LETTER 14 – JEFFER-MANGELS BUTLER & MITCHELL, LLP

Kerry Shapiro; written correspondence; February 22, 2019.

COMMENT 14-1

As discussed below, the DEIR traffic analysis proposes to implement the "Jackson Corridor Transportation Mitigation Strategy" (Mitigation Strategy) as mitigation for the Project's significant traffic impacts, even though the Mitigation Strategy is still in draft form.

Throughout the DEIR, the County discusses the significant cumulative traffic and transportation impacts that will result from the four Jackson Corridor Projects.[1] In order to mitigate those impacts, including the Project's individual impacts, the County proposes the implementation of the "Jackson Corridor Transportation Mitigation Strategy". The Mitigation Strategy serves as the basis for mitigation measures TR-1, TR-2, TR-3, and TR-4, all of which are interrelated and dependent upon one another. For example, TR-3 implements the substance of TR-1.[2]

Absent from the DEIR is a specific discussion of how the Mitigation Strategy will work. Nor does the DEIR attach a copy of the Mitigation Strategy. Presumably, the reason for this critical omission is the fact that the Mitigation Strategy is still in draft form.[3] In fact, the operative draft of the Mitigation Strategy—version 5—was not circulated until after the DEIR was released. Until the Mitigation Strategy is final, the substance of mitigation measures TR-1, TR-2, TR-3, and TR-4 is mere speculation.

It was poor practice for the County to have released the DEIR, which relies upon the Mitigation Strategy as mitigation for the Project's significant and unavoidable traffic and transportation impacts, without having first finalized the Mitigation Strategy. This suggests the County is trying to cut corners to expedite the processing of its own DEIR and make sure its project is the first of the four Jackson Corridor projects approved.

However, until the Mitigation Strategy is final, the DEIR's traffic and transportation analysis is incomplete and speculative. Once the Mitigation Strategy is final, the DEIR's traffic and transportation analysis should be updated to reflect the final terms of the Mitigation Strategy and recirculated.

RESPONSE 14-1

The final Jackson Highway Corridor Transportation Mitigation Strategy was approved by the Board of Supervisors on July 23, 2019. The FEIR has been revised to incorporate the final strategy.

COMMENT 14-2

As discussed below, the DEIR: (1) improperly concludes that compliance with Mather Field Special Planning Area Ordinance (Ordinance) Policy 603-19 will reduce the Sacramento Rendering Plant's (Plant) significant odor impacts on future Project residents to a level less than significant; (2) improperly concludes that compliance with Ordinance Policy 603-19 will reduce the land use incompatibility impacts caused by the Plant to a level less than significant; and (3) fails to adequately consider the Project Alternatives that would remove or reduce the development of residential uses within the southern area of the Project.

The DEIR recognizes that the Plant generates odors that many residents of the Project will find objectionable, even at great distances.[4] The Plant's emission of objectionable odors has been a problem for decades. Nevertheless, the County asserts in the DEIR that the imposition of Policy 603-19 of the Ordinance will mitigate the Plant's significant odor impacts on future residents of the Project.[5]

Ordinance Policy 603-19 requires that all future sales or lease agreements for homes or apartments in the Project include a notice provision regarding the Plant's odor impacts. The provision will also include a "hold harmless" clause that will preclude legal action against the Plant by the future residents. Ordinance Policy 603-19 is a measure intended to provide future residents with notice of the Plant's objectionable odor impacts, not a measure intended to reduce those impacts. Accordingly, the County's conclusion that compliance with Ordinance Policy 603-19 would somehow mitigate the Plant's significant odor impacts on future residents to a level less than significant lacks merit. The County should acknowledge the Plant's odor impacts will be significant and unavoidable, notwithstanding the inclusion of a notice provision in the sales and lease agreements.

Furthermore, as discussed in the DEIR, the Plant is statutorily exempt from regulation by the Sacramento Metropolitan Air Quality Management District because the Plant predates any nearby urban uses, such as those proposed through the Project.[6] The DEIR also states the Plant will cause noise, traffic, and aesthetics impacts that would affect residents of the Project on a 24/7 basis, seven days per week.[7] The significant impacts caused by the Plant emphasize the reality that the use of the Project area, or at least the southern portion thereof, for residential purposes, would cause an obvious land use conflict. Nevertheless, the DEIR again concludes that compliance with Ordinance Policy 603-19 would somehow reduce significant land use incompatibility impacts to a level less than significant.[8] This conclusion also lacks merit.

There is no mitigation that would protect future residents of the Project from the odor, noise, traffic, and aesthetics impacts that would occur on a 24/7 basis, 365 days per year. Accordingly, the siting of new homes downwind[9] of a longstanding rendering facility that causes objectionable odors, even at great distances, cannot be justified, until there is a confirmed date for the Plant's closure. This is not a situation in which the overriding of significant and unavoidable impacts would be appropriate. Rather, this is a situation where the County should avoid placing its residents in the path of harm that would be caused by the Plant's known impacts, which are detrimental to human health and well-being.

It is for these reasons why the County must give more serious consideration to the Project Alternatives that would remove or reduce the development of residential uses within the southern area of the Project. As discussed in the DEIR, several of the Alternatives would reduce the Plant's impacts on future Project residents, including the 24/7 impacts related to objectionable odors, traffic, noise, and aesthetics.[10] However, the County concludes that these Alternatives would not satisfy the goals of the 2016 amendment to the Mather Field Specific Plan. But the County must remember that the EIR prepared for the Mather Field Specific Plan assumed that the southern portion would be zoned commercial-recreation, not residential, a fact acknowledged in the DEIR.[11]

It is deeply concerning that the County would consider developing residential uses on County-owned property located downwind of the Plant, given the history of complaints and litigation related to the development of other areas downwind of the Plant. If the County intends to develop the Project as presently designed, then the County must wait until after the Plant is closed.

COMMENT 14-2

The site of the Sacramento Rendering Plant is currently the subject of an application for the NewBridge Specific Plan, which proposes a master-planned community similar to the proposed project. The NewBridge Specific Plan project is currently going through public hearings, and is anticipated to be considered by the Board of Supervisors in 2020. If the Newbridge project is approved, the Rendering Plant would be relocated and the existing facilities would be decommissioned and removed.

As shown in the Project's PFFP, the southern portions of the Mather South project make up Phases 3 and 4. These phases are not likely to begin for several years, at which point the Rendering Plant would likely be decommissioned. In the event that the Rendering Plant is still present, Mitigation Measures LU-1 and LU-2 are sufficient to minimize the noise and odor impacts identified in the EIR. In addition, a condition of approval has been included to require the Board of Supervisors review of the status of the Rendering Plant decommissioning prior to approval of tentative subdivision maps for residential uses in Phases 3 and 4.

Furthermore, as the commenter notes, the Rendering Plant is existing and part of the environmental baseline. According to California Building Industry Assoc. v. Bay Area Air Quality Management District (August 12. 2016, 2 Cal. App. 5th 1057), "CEQA generally does not require an analysis of how existing environmental conditions will impact a project's future users or residents."

LETTER 15 – RANCHO CORDOVA PLANNING DEPARTMENT

Darcy Goulart; written correspondence; February 22, 2019.

COMMENT 15-1

The City believes that there are many benefits to providing adequate parks and recreational facilities for residents within a community. The Mather South Community Master Plan includes various parks, as well as open space areas that provide an opportunity for pedestrian and bike pathways. Upon review of the Mather South Community Master Plan Public Facilities Financing Plan, park construction cost estimates were determined by utilizing the Cordova Recreation and Park District (CRPD) Impact Fee Nexus Study and funding for the park improvements will be through the payment of the CRPD impact fee. Adopting the CRPD Park Impact fee will ensure that a similar level of park and recreational facilities enjoyed by the residents for the City of Rancho Cordova will also be constructed for the residents of the Mather South community.

RESPONSE 15-1

This comment does not identify any deficiencies in the DEIR analysis, but it has been provided to the Board of Supervisors for their consideration. Comment noted.

LETTER 16 – CHP SOUTH SACRAMENTO AREA OFFICE

Captain E.L. Robinson; written correspondence; February 26, 2019.

COMMENT 16-1

The California Highway Patrol (CHP) South Sacramento Area office recently received a "Notice of Completion," Environmental Impact Report for the proposed Mather South Community Masterplan Project, State Clearing House #2014062087. After our review, we have concerns with the potential impact this project may have on traffic congestion

Our concerns relate to the proposed construction of a master planned community to include up to 3,522 residential dwelling units, an environmental education campus with 200 multi-family units, a 21-acre research and development park, two elementary schools, 21 acres of commercial retail with up to 225,000 square feet of retail space, 26 acres of neighborhood parks and a 17 acre community park, along with multi-use pedestrian and bicycle trails. This project is located along the Jackson Road corridor in Sacramento County. There are several major roadways that will be impacted by the increased traffic congestion this development will create. Jackson Highway, State Route 16 (SR-16), is a two-lane undivided highway with minimal shoulders, surrounded by agricultural fields and vacant land. SR-16 already experiences significant traffic delays/congestion during commute hours and heavy commercial traffic due to the commercial businesses within the area and the County Landfill. All unincorporated roadways south of SR-16 are the responsibility of the South Sacramento Area and are significant ingress and egress routes that will be used to access the proposed community from both US Highway 50 and State Route 99.

The aforementioned roadways already experience traffic congestion during commute hours, and without adequate traffic management engineering and improvement prior to the development of the proposed community, traffic congestion will significantly increase. This project could have a negative impact on our operations due to the increased traffic congestion, which could lead to a potential increase in traffic collisions, calls for service, and traffic related incidents as well as our bordering CHP East Sacramento Area.

RESPONSE 16-1

The purpose of this EIR is to inform decision makers and the public about the project's significant environmental impacts and ways to reduce or mitigate them. Chapter 17 contains a full analysis of the traffic and circulation impacts of the project and provides mitigation as needed. Thus, no changes to the document are necessary. This comment will become part of the administrative record and will be considered by the decision makers.

LETTER 17 – CAROL WITHAM

Carol Witham, written correspondence; February 21, 2019

COMMENT 17-1

I also concur with comments from the Mather Alliance and others regarding the name of the primary road which will abut the Mather Preserve. Eagle's Nest Road has been the name of this road for many decades. The change in 2013 to Zinfandel Drive was made while the County envisioned major development along its north-south transportation corridor. Following the changes related to road alignment and traffic calming in the proposed Mather South project, it is more appropriate that the road retain its original name. Eagle's Nest Road captures the essence of the nature preserve landscape. The name will also give motorists a heightened awareness of natural areas through which they are traversing. Appropriate roadside signage should also be required as part of this project's mitigation package.

RESPONSE 17-1

This comment does not identify any deficiencies in the DEIR analysis, but the comment has been forwarded to the Board of Supervisors for their consideration. Comment noted.

COMMENT 17-2

There is general concern within the Sacramento environmental community that the Mather Preserve is not being properly managed and funded. In particular, the site continues to degrade as a result of weed invasions and human trespass. I urge the County to become more proactive in ensuring that the natural resources of the Mather Preserve are being preserved and managed. This requires development of a comprehensive Weed Management Plan and a Public Access Plan. While spelled out in the Wetlands Management Plan approved by the agencies in 2014 and adopted by the County Board of Supervisors in 2015, these additional plans have yet to be developed but are urgently needed.

RESPONSE 17-2

This comment does not identify any deficiencies in the DEIR analysis, but the comment has been forwarded to the Board of Supervisors for their consideration. Comment noted.

COMMENT 17-3

I believe that the administrative record for this proposed action is incomplete. There was a Notice of Preparation (NOP) issued on June 27, 2014 for Control Number PLNP2013-00065. No copy of that NOP and resulting comment letters have been incorporated into the DEIR. Only the comment letters received from the revised NOP issued on January 5, 2017 have been included as an appendix to the DEIR. I have attached a comment letter from the California Native Plant Society (CNPS) dated July 28, 2014 written in response to the original NOP. That letter gives CNPS standing in this environmental review process. The letter and attachment are hereby incorporated.

RESPONSE 17-3

An EIR is not the same as the administrative record. There is no requirement for an EIR to be the complete administrative record but instead the EIR is one part of the administrative record. Additionally, the purpose of a revised NOP is to let agencies know that the project description has substantially changed and thereby initiates new comments as to the suggested scope of analysis to be contained in the EIR.

COMMENT 17-4

Most of the mitigation measures for potentially significant impacts to biological resources are pretty vague. They rely on yet-to-be-developed plans or actions. The DEIR then assumes that a regulatory approved plan constitutes adequate mitigation and will result in less than significant impacts. The project cannot simply defer discussion and disclosure of the environmental consequences of the mitigation portion of the project to some future plan. Exactly what are the environmental impacts of creating or restoring >14 acres of vernal pool invertebrate habitat? Given the Record of Decision on the Sunridge Projects, where within the Mather Core Recovery Area will this mitigation occur? And, will use of these lands preclude the South Sacramento Habitat Conservation Plan from achieving its conservation strategy?

RESPONSE 17-4

The purpose of this EIR is to inform decision makers and the public about the project's significant environmental effects and feasible ways to reduce or mitigate them. The EIR identifies the environmental impacts on vernal pool invertebrate habitat in Plate BR-4, Table BR-4 and page 6-37 through 6-38. Mitigation Measure BR-2 contains appropriate performance standards that must be satisfied prior to groundbreaking activity within 250 feet of vernal pool invertebrate habitat.

Formulation of mitigation measures should not be deferred until some future time; however, measures may specify performance standards which would mitigate the significant effect of the project (CEQA Guidelines, Section 15126.4(a)(1)(B)). Mitigation Measure BR-1 establishes a minimum mitigation ratio of 1:1, and describes the interface between this requirement and the regulatory permitting process. It is possible that the mitigation plan will involve construction of created wetlands, but it is also possible that it will be achieved through other means (such as purchase of mitigation credits from wetlands, which have already been created). Measures, which defer these particular details to a later time, have been challenged in the courts numerous times, but these challenges have failed. A recent example in our region is the Clover Valley Foundation v. City of Rocklin (2011) 197 Cal.App.4th 200, in which it was stated, "a condition requiring compliance with environmental regulations is a common and reasonable mitigating measure". This statement was, in fact, a quote from yet another court case: *Sundstrom v. County of Mendocino* (1988) 202 Cal.App.3d 296, 308. Courts have approved deferring the formulation of the details of a mitigation measure where another regulatory agency will issue a permit for the project and is expected to impose mitigation requirements independent of the CEQA process, so long as the EIR included performance criteria and the lead agency committed itself to mitigation. Mitigation Measures BR-1 and BR-7 commit the County to ensuring that mitigation is provided at a minimum 1:1 mitigation ratio, which is a sufficient and common performance standard and is also consistent with County policy.

In reviewing draft EIRs, persons and public agencies should focus on the sufficiency of the document in identifying and analyzing the possible impacts on the environment and ways in which the significant effects of the project might be avoided or mitigated. Comments are most helpful when they suggest additional specific alternatives or mitigation measures that would provide better ways to avoid or mitigate the significant environmental effects. At the same time, reviewers should be aware that the adequacy of an EIR is determined in terms of what is reasonably feasible, in light of factors such

as the magnitude of the project at issue, the severity of its likely environmental impacts, and the geographic scope of the project. CEQA does not require a lead agency to conduct every test or perform all research, study, and experimentation recommended or demanded by commentors. When responding to comments, lead agencies need only respond to significant environmental issues and do not need to provide all information requested by reviewers, as long as a good faith effort at full disclosure is made in the EIR.

COMMENT 17-5

Mitigation Measure BR-2. (pages 6-40 through 6-41): This mitigation measure is simply a plan to make a plan that satisfies the regulatory agencies. It fails to disclose the environmental impacts of the mitigation itself. This circumvents public disclosure and the public's ability to comment upon the mitigation.

Additionally, any restoration or creation within the Mather Preserve for the purposes of compensatory mitigation must include monitoring of adjacent natural vernal pool habitat and appropriate remediation should these activities result in degradation of the adjacent natural vernal pool habitats. I recommend that the restoration plan elements be modified to include monitoring and potential remediation of adjacent natural vernal pool habitat.

Mitigation Measure BR-7. (pages 6-44 through 6-46): Again this mitigation measure is simply a plan to make a plan that satisfies the regulatory agencies. On one hand, using reference populations for determining success of re-established populations is appropriate. On the other, where have any analyses of the feasibility of transplantation or other measures been provided? What remediation will be required if the transplantation is unsuccessful?

RESPONSE 17-5

Refer to Response 17-4.

COMMENT 17-6

Mitigation Measure BR-9. (page 6-47). The DEIR acknowledges that both direct and indirect impacts to Western Spadefoot will occur. It goes on to highlight all of the potential indirect impacts including water quality, domestic animals, litter, traffic, noise, etc. Then this mitigation measure concludes that the salvage of adults, larvae and eggs, if encountered within the project construction footprint, constitutes mitigation which would render impacts to less than significant. More detailed mitigation requirements regarding monitoring and measurable outcomes needs to be made for Western Spadefoot mitigation.

RESPONSE 17-6

As stated on page 6-47, a condition of project approval and before ground disturbing activities, the County shall require future project proponents to retain a qualified biologist to conduct surveys for western spadefoot in areas of potential habitat that would be eliminated by the project. The surveys shall be conducted at the appropriate time of year to detect western spadefoot, generally the breeding season, according to methods approved by CDFW. If western spadefoot is found in habitat that will be eliminated or made unsuitable for western spadefoot, then adult and larval western spadefoot and egg masses shall be collected and relocated to suitable habitat in the Mather Preserve by a qualified biologist in coordination with CDFW. This mitigation highlights the monitoring and measureable outcomes feasible within the County's process and ensures appropriateness by utilizing CDFW. The comment provides no

evidence to the assertion that the recommended mitigation in measure BR-9 is insufficient to reduce impacts to a less than significant level.

COMMENT 17-7

This DEIR lacks specificity in mitigation measures. While alternatives are discussed and minimums are proposed, there are no analyses and recommendations of preferred methods. Most of the mitigation measures rely on preparation of future documents which will not be subject to public disclosure and comment. This inappropriately defers mitigation and prevents interested citizens from participating in the process. This is unfortunate because public participation can and often does improve design and mitigation implementation.

RESPONSE 17-7

See response to comment 17-4.

LETTER 18 – COUNTY OF SACRAMENTO DEPARTMENT OF REGIONAL PARKS

Mikki McDaniel; written correspondence; February 22, 2019

COMMENT 18-1

I am submitting one comment below on the Mather South DEIR on behalf of the Department of Regional Parks.

Plate PD-12: Existing and Proposed Bikeway Master Plan – The regional trail on the north end of the project area along the golf course is missing from the proposed bikeway master plan.

RESPONSE 18-1

This comment is correct and revision has been made to the FEIR.

LETTER 19 – DEPARTMENT OF FISH AND WILDLIFE

Kevin Thomas; written correspondence; March 14, 2019

COMMENT 19-1

Biological Resources (Section 6, Page 23) defines the Regulatory Setting under the California Fish and Game Code for animals and plants. This paragraph should reference Section 4150 of the Fish and Game Code, which defines nongame mammals and identifies that a nongame mammal may not be Taken or possessed except as provided elsewhere in the Fish and Game Code.

RESPONSE 19-1

The requested reference to Section 4150 of the Fish and Game Code has been made.

COMMENT 19-2

The Biological Resources Report for the draft EIR states that only the Folsom USGS quad was searched in CNDDB. It is common practice to do a 9-quad search when compiling the species list for this type of report. Thus, CDFW recommends using the 9-quad search results to determine which special-status species have the potential to be impacted by the Project. A 9-quad search from CDFW's BIOS online tool identifies at least 17 additional special-status species not analyzed under Table BR-3 and subsequent sections:

Table 1. Additional Species from a 9-quad Search

Common Name	Scientific Name
double-crested cormorant	*Phalacrocorax auritus*
dwarf downingia	*Downingia pusilla*
ferruginous hawk	*Buteo regalis*
great blue heron	*Ardea herodias*
great egret	*Ardea alba*
Heckard's pepper-grass	*Lepidium latipes var. heckardii*
merlin	*Falco columbarius*
Northern California black walnut	*Juglans hindsii*
pallid bat	*Antrozous pallidus*
Peruvian dodder	*Cuscuta obtusiflora var. glandulosa*

pincushion navarretia	*Navarretia myersii ssp. myersii*
purple martin	*Progne subis*
saline clover	*Trifolium hydrophilum*
song sparrow	*Melospiza melodia*
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*
woolly rose-mallow	*Hibiscus lasiocarpos var. occidentalis*
yellow-headed blackbird	*Xanthocephalus xanthocephalus*

The list in Table 1 should be reviewed and analyzed. CDFW recommends Sacramento County perform its own to 9-quad search to further strengthen the impact analysis of the final EIR. If additional species are identified with the potential to be impacted by the proposed Project, then the draft EIR should be revised to include this analysis as well. CDFW considers adverse Project-related impacts to sensitive species and habitats to be significant to both local and regional ecosystems, and the final EIR should include appropriate mitigation measures for adverse Project-related impacts to these resources. Mitigation measures should emphasize avoidance and reduction of Project impacts. For unavoidable impacts, onsite preservation, habitat restoration, and/or enhancement

should be evaluated and discussed in detail. If onsite mitigation is not feasible or would not be biologically viable and therefore not adequately mitigate the loss of biological functions and values, offsite mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed in the final EIR.

RESPONSE 19-2

As noted in page 6-11 of the Draft EIR, up to twelve quads were reviewed for occurrences of special status species known to occur or with potential to occur in the project area. Some of the species listed by the comment do not have potential to occur on the project site, others do not qualify as special status under CEQA. For example, the double crested cormorant is no longer listed as a species of special concern by CDFW and will not be addressed in the EIR. The Final EIR has been updated to include any referenced species qualifying for special status under CEQA (see Table BR-3) and where necessary additional information and analysis is provided appropriate to each species if the species has potential to occur in the project area. With the exception of additional recommended mitigation for special status bats, the existing recommended mitigations for nest surveys and protection, botanical surveys and other species protections contained in the DEIR adequately mitigate impacts for any additional species covered in the FEIR.

With regard to avoidance and reduction of on-site impacts, the Department is reminded that the DEIR for the proposed Project (Mather South) incorporated the Mather Field Final EIR (SCH 2013072073) by reference. The Mather Field FEIR described in detail the background and long-term collaborative process of transferring the Mather Air Force Base to local control (Pgs. 2-5 to 2-9). As part of that process, avoidance and minimization measures have already been included in the Mather Field Special Planning Area Ordinance. The current project (Mather South) is subject to the

Ordinance. Additionally, as discussed on page 6-29 of the DEIR, the Mather Field Special Planning Area Ordinance requires that, "individual developments within the Specific Plan area shall implement the mitigation strategies of any area-wide mitigation plans prepared by Sacramento County to avoid or reduce impacts upon wetlands and special status species to a less than significant level".

The choice of the current project site for development was informed by past analysis and study that set out the framework to preserve the larger Mather Preserve which contains the highest value habitat and to develop the project site which contained lower value habitat which had been modified by the construction of the Folsom South Canal and the placement of spoils on-site. The Mather Field FEIR analyzed program level impacts related to the planned development of the Mather South site including preserve configuration. In fact, through that process, another 53 acres of important lands were added to the preserve and mitigation measures were adopted for the programmatic impacts to vernal pool habitat that include requirements for a comprehensive drainage plan, best management practices for erosion and sediment control, worker awareness, and a two-step adaptive management plan consisting of an Interim Wetlands Management Plan (IWMP) and a Long Term Management Plan (LTMP). It was recognized by the stakeholders involved in the Mather Stakeholder process, that the two-step active management process would be a significant benefit to the values and functions of the natural resources (Mather Field Revised FEIR Page 7-94). The County hopes that comments presented by the Department do not constitute "another bite at the apple" after the County has proceeded with a collaborative process that has resulted in substantial increases of protected and/or avoided acreage.

COMMENT 19-3

Species such as bats are included in the definition of nongame mammals referenced above, but not assessed through the draft EIR. The riparian habitat within the Plan Area may contain suitable roosting habitat and the grassland may contain suitable foraging habitat for bat species that may be adversely affected by the Project. Since the Project covers considerable area, other mammalian species may also be impacted. CDFW recommends analysis such as bat habitat assessment or a mammal study to identify impacts.

The draft EIR is not clear about the methodology used, for determining whether a species was present. The list of reports on pages 6-2 and 6-3 does not describe the methodology of Project-specific surveys, if conducted, or when surveys were conducted. CDFW recommends including clear descriptions of the surveys completed and the survey results for species present or with the potential to be present. Species such as Valley Elderberry Longhorn Beetle (*Desmocerus californicus dimorphus*)(VELB), Bogg's Lake Hedge-hyssop (*Gratiola heterosepala*), etc. are discussed but need further survey detail.

RESPONSE 19-3

As noted in Response 19-2, additional species have been included in the analysis in response to CDFW's request. An additional analysis of impacts to the western red bat

and pallid bat has been added to the FEIR including recommended mitigation measures to assure impacts are less than significant.

COMMENT 19-4

The draft EIR only references surveys by WRA (2004) and for focused species in 2006-2008 by Carol Whitham. Plant survey methodology was not described, and it is unknown whether the Project biologists conducted rare plant surveys according to established protocol before determining that certain species were not present. Due to the high number of potential special-status plants within the Project area, CDFW recommends conducting a new set of surveys that are more recent and that demonstrate use of the *Protocol for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (see http://www.dfg.ca.gov/wildlife/nongame/survey_monitor.html) to identify rare plants that may occur on the Project site or otherwise be impacted by Project activities. Failure to locate a plant during the floristic surveys of one field season does not constitute evidence that the plant is absent from the surveyed location. The timing and number of visits necessary to conduct a floristic survey should be determined by geographic location, the natural communities present and the weather patterns of the year, with the understanding that more than one field visit, or field season may be necessary to accurately survey the floristic diversity of a site and detect the presence of special-status plant taxa. To conduct a new survey or reach compliance for an existing survey. CDFW recommends:

- **Botanical surveys be floristic (every plant taxon that occurs on a site is identified to the taxonomic level necessary to determine rarity and listing status)**
- **Surveys be conducted in the field at the time of year when target plant taxa are both evident and identifiable (usually during flowering or fruiting), and multiple visits to a site be made (e.g. in early, mid, and late-season) to accurately survey the floristic diversity of the site and detect the presence of all special-status plant taxa that are evident and identifiable**
- **Nearby reference populations be visited whenever possible to determine if known special status plant populations are evident and identifiable this year, and to obtain a visual image of the target species, associated habitat, and associated natural community. Reference populations may be particularly important to ensure that the timing of surveys is appropriate and to help substantiate negative findings in adverse conditions**

Again, additional field seasons of surveys may be necessary to accurately survey the floristic diversity of a site and substantiate negative findings. This may be particularly true because of the high diversity of plants in the vicinity and high potential for annual or short-lived perennial plant taxa.

RESPONSE 19-4

The comment states the current protocol for conducting rare plant surveys and states that past surveys are not enough to substantiate an absence determination. The Draft EIR concluded the same regarding absence determination stating on page 6-43 that, "Because the surveys are over 15 years old, they cannot be relied upon to make an

absence determination for special status plants for which suitable habitat exists in the Plan Area." The Draft EIR goes on to list the species previously found and known to be in the area and concludes that because they have been found in the past and other populations are nearby that they are considered to be potentially present for the purpose of the analysis. A magnitude of the potential impact is disclosed and the Draft EIR concludes that the impact would be potentially significant. The Draft EIR then recommends several mitigation measures starting with protocol-level floristic surveys consistent with what the comment describes above. If the surveys confirm the presence of special status plants, the Draft EIR contains a rigorous mitigation measure which includes preservation where feasible and adequate compensation where preservation is not possible. The mitigation measure contains extensive performance criteria and the Draft EIR concludes that with mitigation, impacts would be less than significant.

COMMENT 19-5

The draft EIR suggests that some surveys are to be completed immediately prior to groundbreaking. Phasing of the projects in the Project area could change the hydrology of the system which could irrevocably and adversely affect vernal pool/swale ecosystems that are hydrologically connected. Changing the hydrology of the area could affect special-status species that may be present in subsequent phasing areas or within the onsite/offsite preserves that will not be surveyed according to the draft EIR. Further discussion of potentially significant impacts is provided in the California Endangered Species Act section below, but CDFW recommends completion of comprehensive surveys prior to circulation of the final EIR. The final EIR should provide the results along with a clear explanation of where, when, and how many surveys were conducted along with a rationale for this determination.

RESPONSE 19-5

For the reasons discussed in Response 19-4, no new surveys will be required prior to circulation of the Final EIR. However, in response to the phasing comment and potential for each phase to change hydrologic conditions, mitigation measure BR-7 has been modified to require survey of the entire project site prior to the first disturbance within 250 feet of any vernal pools, swales, and seasonal wetlands. Furthermore, permits from resource agencies including CDFW will be required

COMMENT 19-6

Analysis of Direct, Indirect, and Cumulative Impacts to Biological Resources

Upland habitat adjacent to streams and wetlands, provide critical habitat to semi-aquatic reptiles and amphibians, in addition to their importance to aquatic habitat function. A summary of 65 wetland-dependent amphibian and reptile species shows their core upland habitats ranged more than 100 meters (328 feet) from wetlands.[3] Amphibians, which are dependent on wetlands for reproduction and juvenile life stages, are demonstrated to depend upon and range widely in adjacent uplands as adults.[4] Wetland buffers of 15 to 30 meters (~50 to 100-feet) wide have been shown to provide inadequate habitat protection for amphibians and reptiles.[3] Buffers help maintain important microclimate characteristics such as air temperature, relative humidity, and wind speed in adjacent wetlands and riparian forest habitats. Many amphibians and reptiles, for example, rely on a certain microclimate range for all or some of their habitat needs[5] [6] as do bird species[7] and mammals.[8] It has been concluded that at a minimum, a 45-meter (~147 foot) buffer (as measured along each side of a stream) is necessary to maintain a natural microclimate along streams.[9]

The draft EIR does not analyze the viability of the open space drainage preserves. Although the draft EIR protects watercourses, narrow open space drains are surrounded by development. The exact size of the open space drains and the reason why that size was determined should be identified in the final EIR. Likewise, CDFW questions which species would still benefit from these narrow open space drainages. Narrow natural habitats are often indicative of habitat fragmentation that reduces the ecological function of the current drainage regime. Through development, high density human influence increases in these drainage corridors, where there is currently little to no human impact. Risk of trash and chemical pollution, domestic pets, and habitat obstruction all decrease the functionality of the habitat. CDFW recommends an analysis of these impacts and how design changes or mitigation measures can be enacted to reduce impacts.

RESPONSE 19-6

The high value wetlands on the project site (the spadefoot pool and critter pool) have been protected through the collaborative Mather Stakeholder process described on page 6-33 of the DEIR. This process was described in the Mather Field Final EIR (SCH 2013072073) which, as previously mentioned, has been incorporated by reference. The Mather Field Revised FEIR described in detail the background and long-term collaborative process of transferring the Mather Air Force Base to local control (Pgs. 2-5 to 2-9) and described the numerous project enhancements that came from the Mather Stakeholder process, including but not limited to a re-alignment of Zinfandel Drive to avoid sensitive habitat and add 53 acres to the Mather Preserve, preservation of the Critter Pool and Spadefoot Pool, avoidance of on-site drainage corridors, and elimination of the college campus for a smaller environmental education hub consistent with the biological values of the Mather Field area.

COMMENT 19-7

Residential and commercial development within areas identified for their high value as habitat for fish and wildlife can result in significant cumulative impacts due to habitat fragmentation. Adverse effects of roads and structures placed in or near preserve/natural areas include increased wildlife road-kill, increased garbage and roadside dumping, light and noise disturbances, the introduction of invasive species, harassment and killing of wildlife by domestic animals, and an increase in predator fauna such as corvids (jays, crows, and ravens). These affect the long-term sustainability of wildlife populations in wetland and vernal pool resources within areas known for their high value as ecologically diverse ecosystems. Likewise, there is potential for impact to sensitive plant communities and the integrity of woodlands as habitat for diverse species of reptiles, mammals and migratory and non-migratory birds including raptors. Furthermore, the placement of residential developments in natural areas typically leads to human conflict with wildlife.

RESPONSE 19-7

The comment states the general impacts known to occur at the boundary between the developed environment and the natural environment and does not identify any inadequacy in the Draft EIR analysis. The Draft EIR identifies and discusses the significant cumulative effects that Sacramento County's past, present and foreseeable urbanization has and will create.

COMMENT 19-8

As with the open space drainages, onsite open space preserves are also subject to a drastic increase in human influence. The draft EIR states there will be two open space areas. CDFW is concerned with the integrity of the 53-acre extension of the Mather Preserve area within the Project footprint. The rerouting of Zinfandel Drive will border this area where it previously has not, and development of the site will bring thousands of new residences and commuters through the roadway. In addition, the onsite preserve will be largely isolated. Habitat islands such as this serve ecological benefit, but functionality may decrease. These factors should be considered when evaluating alternatives and choosing mitigation.

When a habitat is fragmented, the amount of edge habitat - the zone along the boundary of a habitat - increases while the amount of interior core habitat decreases. Species dependent on interior habitat suffer, while edge dependent species, including invasive species and predators, thrive. The increase of edge habitat impacts the habitat's microclimate, including light, soil, temperature, moisture, and wind conditions, which, in turn, alters the composition of plant communities.[10] For birds, predators such as crows and raccoons, and nest parasites, find target nests more easily in edge habitats.[11] Because different plant communities support different collections of wildlife and rare plant species, changes in habitat also shift and displace wildlife. These changes disrupt the pollination mechanisms plants depend upon, and without animal pollinators or seed dispersers, plant communities slowly lose species.[12] Peripheral plant populations in edge habitats also tend to exhibit unique traits from the core populations: they tend to be smaller, have more variable densities, restricted gene flow, less genetic variation, greater extirpation risk and be morphologically similar.[13]

CDFW therefore recommends the final EIR specifically evaluate the potential for indirect and cumulative impacts due to fragmentation of sensitive plant community and wildlife habitat areas that will result from the Project. The final EIR should examine options for effective mitigation for such effects, which could include avoidance by prudent refinement of Project design that tends to preserve contiguous habitats and limit fragmentation. The final EIR's alternative analysis must also evaluate alternatives that would serve to decrease impacts due to habitat fragmentation.

RESPONSE 19-8

The comment explains in detail the concepts of edge effects and habitat fragmentation and goes on to express concern about Zinfandel Drive being routed around the 53-acre extension of the preserve. The comment is puzzling to the County because the 53-acre preserve was added specifically to protect high-value vernal pool habitat by routing Zinfandel Drive around it instead of having it bisect the 53-acre area from the preserve as it does in its current configuration. There is a balance between on-site preserves, off-site mitigation and development that is not acknowledged by the commenter. When preserves and avoided areas are included in a project, comments often attack the DEIR on edge effects and habitat fragmentations. When areas are not preserved and compensatory mitigation is instead required, comments often complain that there should be more preservation. The letter from CDFW contains both types of comments, yet no

alternative designs or specific recommendations as to what modifications should be made to protect a particular resource are provided. The comments states that the edge effect factors and human conflicts should be evaluated when determining mitigation and that, "prudent refinement of Project design that tends to preserve contiguous habitats and limit fragmentation" should be examined. The addition of the 53-acre high-value habitat to the preserve is just that, a "prudent refinement" and was an outgrowth of the Program Level Mather Field EIR (which has been incorporated by reference) and serves to help minimize fragmentation of the important habitat.

Additionally, as part of the process that added the 53-acre preserve, the land use plan concept was revised to include a new east/west open space corridor in the northern portion of the property as well as a new north/south connecting corridor from the new east/west corridor to the critter pool area. These new corridors provide an open space/trail amenity in the northern portion of the site, which will provide trail connectivity to the previously identified corridors in the mid and southern portions of the site. The new east/west corridor also avoids development of the drainage swale that is identified on the wetland delineation. Additionally, the original university concept has been replaced with an approximately 25-acre environmental education campus concept in the vicinity of the critter pool and in proximity to a neighborhood elementary school, park, and community center. This represents a major de-intensification of uses and brings in a use that will more appropriately and gently integrate with the important habitat to help minimize impacts and human wildlife conflicts. Additionally, the revised Mather South land use plan concept does not include the original regional sports park.

COMMENT 19-9

Impacts to hydrology and physical habitat are magnified in sensitive ecotypes such as vernal pools. The Project footprint lies between two existing and extensive vernal pool complexes, the Mather Preserve and the Sunrise Douglas (Anatolia) Mitigation Bank. The draft EIR does not analyze potentially significant effects to surrounding these two preserves. Due to the nature of the Project, the hydrologic character of the site will change drastically, which can decrease the habitat value of the preserve sites. As mentioned above, use of Zinfandel Drive will also increase which will bring many new travelers directly through the Mather Preserve. Critical conservation in the local region is already tied to these two sites, so further steps should be taken to ensure that impacts to these sites are reduced.

CDFW suggests more detail be included on fencing for any preserves or designated habitat areas. Perimeter fencing should be restricted to 3-4 strand wire with a bottom strand a minimum of 16 inches above ground and not to exceed 48 inches in total height. The bottom strand should be barbless wire. Other fence designs that allow for unobstructed animal movement are also acceptable.

RESPONSE 19-9

The DEIR for the proposed Project (Mather South) incorporated the Mather Field Final EIR (SCH 2013072073) by reference. The Mather Field FEIR dealt with program level impacts related to the planned development and preserve configuration at Mather Field,

including the development of the current Project. Hydrologic impacts were well studied and disclosed. A micro watershed analysis was conducted to help determine indirect impacts and was used to help determine the size and configuration of the additional 53 acres added to the preserve. Mitigation measures were adopted for the programmatic impacts to vernal pool habitat that include requirements for a comprehensive drainage plan, best management practices for erosion and sediment control, worker awareness, and a two-step adaptive management plan consisting of an Interim Wetlands Management Plan (IWMP) and a Long Term Management Plan (LTMP). It was recognized by the stakeholders involved in the Mather Stakeholder process, that the two-step active management process would be a significant benefit to the values and functions of the natural resources (Mather Field Revised FEIR Page 7-94).

The Sunrise Douglas Mitigation Bank referenced by the Department is located up gradient of the project site and is separated from the project site by Sunrise Boulevard and the concrete lined, trapezoidal Folsom South Canal. In fact, drainage from Sunrise Douglas enters the project site by flowing across concrete causeways crossing the Folsom South Canal. There is no evidence that project development will affect the Sunrise Douglas Mitigation bank hydrologically. The depth of the Folsom South Canal and its concrete lining further the argument that no-sub surface connection exists between the vernal pool resources of the up-gradient Sunrise Mitigation Bank and the Mather South Project. See Response to comment 19-18 for additional information regarding speculation about hydrologic changes.

COMMENT 19-10

CDFW recognizes the draft EIR discusses the need for and significance level of offsite improvements; however, there is a distinction between Project impacts on surrounding environment and offsite improvement impacts on the environment. CDFW recommends Sacramento County provide complete plans for offsite improvements and perform a complete study on both impacts for the final EIR, as highly sensitive ecotypes will be impacted in both cases.

RESPONSE 19-10

The proposed project is a community level Master Plan and as such, complete plans are not available for off-site improvements. Such plans are made later in the development process when project level mapping is completed. As discussed on pages 6-68 and 6-69 of the DEIR there are potentially significant impacts from offsite improvements and because specific impacts cannot be determined at this time, the impact is considered significant and unavoidable.

COMMENT 19-11

The draft EIR often references the Mather Preserve as a location for where mitigation for both special-status species and aquatic resources will occur. The Mather Preserve has already been designated for conservation purposes in the U.S. Fish and Wildlife Service Biological Opinion for the Disposal of the Former Mather Air Force Base (81420-2008-F-1567-3) provided to Sacramento County in 2012. Project mitigation is not available at the Mather Preserve; therefore, CDFW recommends a new mitigation proposal to offset impacts to fish and wildlife resources at the Project site. The new proposal should address its feasibility with varying mitigation standards for regulatory approval, should specifically discuss each species and habitat type, and address potential adverse effects to the South Sacramento Habitat Conservation Plan.

RESPONSE 19-11

The County understands the commenter's concerns given that the Mather Air Force Base re-use process has spanned decades. Following receipt of CDFW's comment letter, County staff met with CDFW staff to discuss the history and the fact that the 2012 Biological Opinion does not indicate that the preserve cannot be used for project mitigation. In fact, the County's development plans were part of the considerations made in the Biological Opinion. As stated on page 1 of the Biological Opinion, the transfer of Mather Field to the County was for continued operation of the commercial airport, biological resource preservation, and future development. The proposed future development of Mather Field was assumed as an indirect effect of the transfer (page 2 of the Biological Opinion). As summarized in the consultation history, conversations were occurring over several years with regulatory agencies regarding future development plans, endangered species compensation, and permitting and mitigation requirements. The Biological Opinion describes the Mather Preserve as containing vernal pool grasslands along with the vernal pools, vernal swales, and seasonal wetlands (pages 6-7). The DEIR for the proposed Project (Mather South) incorporated the Mather Field Final EIR (SCH 2013072073) by reference. The ongoing process of transferring the base to the County and of placing the Mather Preserve into conservation easement was discussed in that FEIR. Because the federal permitting process was ongoing, the FEIR presented two mitigation scenarios, one in which enhancements and augmentations to the preserve; its management plans would allow it to be used as mitigation, and another based on CEQA compliance using standard programmatic consultation and mitigation measures should the enhanced methodology of the first approach not be approved.

COMMENT 19-12

The classification of Fully Protected was the State's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish, mammals, amphibians and reptiles, birds and mammals. Fully Protected species may not be Taken or possessed at any time and no licenses or permits may be issued for their Take except for collecting these species for necessary scientific research, through a Natural Community Conservation Plan, and relocation of the bird species for the protection of livestock.

The draft EIR, CNDDB records, and a search on CDFW BIOS indicate that one Fully Protected Species, white-tailed kite (*Elanus leucurus*), is present within the Project area. The draft EIR does not include any discussion of specific impacts to white-tailed kite. Because of the species' status, any impact could be considered significant under CEQA. CDFW is concerned that the project, as designed, could result in Take of white-tailed kite and thus, would not be compliant with State regulations regarding Fully Protected Species.

RESPONSE 19-12

The comment is incorrect that the DEIR does not discuss the white-tailed kite because it is discussed on page 6-59 of the DEIR and mitigation is provided to avoid any take of birds or their active nests. Additionally, the DEIR for the proposed Project (Mather South) incorporated the Mather Field Final EIR (SCH 2013072073) by reference. The white-tailed kite is also discussed on pages 7-71 and 7-72 of that document and foraging habitat is discussed. The preservation of the Mather Preserve and the protections for active nests and required raptor surveys that are recommended as mitigation will assure impacts are less than significant.

COMMENT 19-13

CDFW is responsible for ensuring appropriate conservation of fish and wildlife resources including threatened, endangered, and/or candidate plant and animal species, pursuant to CESA. CDFW recommends that a CESA Incidental Take Permit (ITP) be obtained if the Project has the potential to result in Take[2] of State-listed CESA species or rare plants either through construction or over the life of the Project.

The Project area as shown in the draft EIR includes habitat for State-listed species. Environmental analysis should determine whether the project may have the potential to result in Take of a State-listed species. If there is potential for Take, CDFW recommends the final EIR disclose that an ITP or a consistency determination (Fish & G. Code, §§ 2080.1 & 2081) be obtained prior to starting construction activities. To receive authorization for Take, the final EIR must include all avoidance and minimization measures to fully mitigate the Take (Cal. Code Regs., tit. 14, § 783.2, subd.(a)(8)). CDFW encourages early consultation with staff to determine appropriate measures to fully mitigate impacts of the Taking. Project modifications may be needed to demonstrate compliance with CESA.

RESPONSE 19-13

Page 1-39 of the DEIR identifies that the California Department of Fish and Wildlife is one of several Responsible Agencies that will use the EIR for subsequent permitting processes. The language above regarding Sections 2080.1 and 2080 of the Fish and Game Code has been added to the regulatory setting section of the FEIR. The development rules for the Mather Field Special Planning Area Ordinance (the Project is subject to the Ordinance) require avoidance and minimization measures as discussed on page 6-29 of the DEIR. Specifically, the Mather Field Special Planning Area Ordinance requires that, "individual developments within the Specific Plan area shall implement the mitigation strategies of any area-wide mitigation plans prepared by Sacramento County to avoid or reduce impacts upon wetlands and special status species to a less than significant level". The County acknowledges that consultation may be required to fine-tune project details with regard to avoidance and minimization as specific development phases are defined.

COMMENT 19-14

Tricolored blackbird (*Agelaius tricolor*): The draft EIR suggests that the surrounding area is sufficient for foraging, but further evidence is needed to support this claim. Tricolored blackbird may rely solely on or heavily depend on the foraging habitat present in the Project area. More than 10 active breeding colonies are known to exist within 3 miles (average maximum foraging distance) of the Project site. CDFW recommends the draft EIR provide a survey and analysis of tricolored blackbird foraging behavior on the Project site and any proposed mitigation locations.

Furthermore, protecting actively used-foraging habitat during the nesting season will help to enable the tricolored blackbird nesting colony to complete its nesting cycle, as loss of valuable foraging habitat could cause the nesting colony to fail. Loss or alteration of breeding habitat or nest site disturbance may ultimately result in the Take (killing) of nestling or fledgling tricolored blackbirds incidental to otherwise lawful activities through: 1) nest abandonment; 2) loss of young; or 3) reduced health and vigor of eggs and/or nestlings (resulting in reduced survival rates). Hazing (predator calls, light reflecting objects, falconry, etc.) could be considered Take depending on the method used and when it is employed. Tricolored blackbirds rely heavily on an insect prey base when breeding. Tricolored blackbirds may rely heavily on using productive foraging habitat to obtain enough food to feed their young during the nesting season.

RESPONSE 19-14

Both the DEIR (pages 6-54 and 6-55) and the Mather Field Final Revised EIR (SCH 2013072073) (pages 7-68 and 7-69) which has been incorporated by reference into the DEIR, discuss and analyze impacts to the tricolored blackbird. These documents both conclude that the Mather Preserve will continue to provide adequate foraging habitat.

COMMENT 19-15

Swainson's hawk (*Buteo swainsoni*): There are numerous occurrence records within a 10-mile radius of the Project (CDFW 2019, CNDDB layer in BIOS). The loss of nesting habitat due to agricultural and urban expansion has greatly reduced the breeding range and abundance of Swainson's Hawk in California (CDFW 1993; 5-year Status Review: Swainson's Hawk). Mitigation Measure BR-12 does fully address the loss of a nest or nest tree, or discontinuation of use of the nest tree during Project implementation, which could be considered Take. CDFW recommends providing a full tree removal inventory along with Swainson's hawk nest survey results for said trees. Surveys should be conducted prior to the circulation of the final EIR and in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000). With survey results, the final EIR should evaluate the potential for Take and mitigation options for Swainson's hawk.

The draft EIR also lacks sufficient analysis on impacts to Swainson's hawk foraging habitat. CDFW recommends including a discussion of Swainson's hawk foraging behaviors within the Project area and functionality information on the quality of impacted habitat. As stated above, mitigation for lost habitat does not appear to be available at the Mather Preserve. CDFW recommends proposing a revised mitigation strategy to adequately reduce impacts to foraging habitat to a less than significant level.

RESPONSE 19-15

As discussed on page 6-64 of the DEIR, a complete tree inventory is provided as Appendix BIO-1. The DEIR assumed that nearly all of the existing trees in the project area would be removed by development. Mitigation Measure BR-21 was presented to require tree replacement consistent with County policy. Combined with mitigation BR-12 which specifically calls for Swainson's hawk nest surveys consistent with the protocols described by the commenter and mitigation measure BR-16 requiring pre-construction surveys for all nesting birds, impacts to nesting Swainson's hawks are avoided. Because the project is a community level master plan and specific development plans and lotting patterns are not available at this time, trees that can possibly be saved will be addressed through avoidance and minimization when specific development plans are available consistent with the existing avoidance and minimization requirements of the Mather Field Special Planning Area Ordinance.

The DEIR as well as the Mather Field Final Revised EIR (SCH 2013072073) which has been incorporated by reference into the DEIR, describe the Swainson's hawk and its foraging habitat in detail and analysis is provided consistent with long-standing methodology for Sacramento County that was collaboratively developed with and approved by CDFW in 2006. With regard to the use of the Mather Preserve as mitigation please see response to comment 19-11.

COMMENT 19-16

Bogg's Lake Hedge-Hyssop, Slender Orcutt Grass, and Sacramento Orcutt Grass: CDFW recommends revising the draft EIR to specifically discuss these three State-listed plants that have documented CNDDB occurrences on or adjacent to the Project site. Surveys should be conducted prior to circulation of the final EIR and in accordance with the above-referenced protocol so a more complete analysis can be performed. Due to the proximity of species occurrences, the discussion should evaluate potential for Take either in Project implementation or offsite improvements. Currently, CDFW does not have enough information to fully vet the significance of impact to these species.

The Project as described may cause Take of CESA-listed species, so CDFW recommends obtaining a multi-species ITP; however, these sections are not exhaustive, and recommendations may be influenced by Project modifications, updated surveys, and/or the revised 9-quard search.

The Native Plant Protection Act (NPPA) (Fish & G. Code §1900 *et seq.*) prohibits the Take or possession of state-listed rare and endangered plants, including any part or product thereof, unless authorized by CDFW in certain limited circumstances. Take of state-listed rare and/or endangered plants due to Project activities may only be permitted through an ITP.

The CNDDB contains records of several plants that fall under the NPPA. Other special-status plant species may also be present. Subsequently, the draft EIR should identify how the Project is compliant with NPPA and any species specifically related to NPPA.

RESPONSE 19-16

These species are specifically discussed on page 6-43 and 6-44 of the DEIR and mitigation measure BR-7 specifically addresses the NPPA. See responses to Comments 19-2, 4, 5 and 13.

COMMENT 19-17

CDFW 2012 guidelines state that "the survey methods used and results including the information described in the Summary Report and to include the reports within the CEQA documentation." As such, CDFW recommends following survey methodology below to determine burrowing owl (*Athene cunicularia*) use of the Project area prior to circulation of the final EIR. Activities (e.g. relocation) described in the draft EIR are a potentially significant impact and can be more properly evaluated with survey results.

The draft EIR states that suitable habitat for burrowing owl is present on and adjacent to the Project site. CDFW recommends a qualified biologist complete surveys for burrowing owl in accordance with the *Staff Report on Burrowing Owl Mitigation* (CDFG 2012). The survey includes: 1) at least one site visit between 15 February and 15 April, and 2) a minimum of three survey visits, at least three weeks apart, between 15 April and 15 July, with at least one visit after 15 June. Surveys will be conducted on the Project site and within 150 meters of areas that will be directly or indirectly impacted by the Project, where feasible. Surveys shall not be conducted during inclement weather, when burrowing owls are typically less active and visible. If burrowing owls or evidence of burrowing owls (e.g. whitewash or pellets) are not observed during any surveys, no additional mitigation is necessary. If the birds are present, Take could occur. If any new burrowing owl colonizes the Project site after the CEQA document has been adopted, it may constitute changed circumstances that should be addressed in a re-circulated CEQA document (CDFG 2012) if those potential impacts have not been disclosed. Passive relocation is considered an impact to the species unless there is adjacent natural habitat nearby. CDFW recommends that Burrowing Owl sections, including BR-14 and BR-15 are amended so they are consistent with the *Staff Report on Burrowing Owl Mitigation*. Namely, the Project proponent should develop a Burrowing Owl Exclusion Plan approved by the CDFW. In addition, the impact analysis does not include compensatory mitigation for the loss of occupied burrowing owl habitat. CDFW recommends that temporary and permanent loss of habitat is mitigated as outlined in the CDFW's staff report to include permanent protection of mitigation land, a management plan, and endowment.

RESPONSE 19-17

The County disagrees that additional surveys are needed prior to FEIR distribution with regard to Burrowing Owl. The DEIR identifies that Burrowing Owls, while not identified on the project site, are known to nest in the area and that the project site contains suitable nesting and wintering habitat. The DEIR identifies that site disturbance would be an impact to burrowing owl if they were present and recommends mitigation requiring surveys and the development of an exclusion and relocation plan prior to any disturbance. If the County conducted protocol level surveys for burrowing owl prior to the release of the FEIR and no owls were identified, the Department would still recommend additional surveys stating that owls may occupy the site in the intervening time. Therefore, and consistent with past practice, pre-construction surveys are required.

Mitigation measure BR-14 specifically calls for consistency with the CDFW Staff Report on Burrowing Owl Mitigation and specifies that an exclusion plan be prepared and subsequently be approved by the County and CDFW (DEIR pg. 6-56 and 6-57) and mitigation measure BR-15 specifically calls for compensation for the loss of occupied burrowing owl habitat.

COMMENT 19-18

BR-1 discusses preservation of open space drainages as a part of the Mather Preserve. CDFW recommends including our department in the conservation easement (third-party beneficiary) discussion and subsequent management plans. Without doing so, using the open space drainages as mitigation for CDFW permits may not be feasible. Subsequent measures or impact analysis should include communication, approval, etc. with CDFW.

BR-1a mitigation measure does not cite the scientific viability or effectiveness. The hardpan restoration plan does not state any performance measure that must be met or if there is any monitoring after the plan is implemented to ensure the functionality. CDFW is concerned that alterations to the hardpan may have regional impacts to the preserved onsite features, the Mather Preserve, and/or the Sunrise Douglas (Anatolia) Mitigation Bank. Additional mitigation may be needed if hardpan restoration is unsuccessful or if hardpan alterations have impacts on non-impacted vernal pools

RESPONSE 19-18

As currently proposed, the open space drainages are not part of the larger Mather Preserve located west of Zinfandel Drive and are being set aside as a project amenity which contains a biological component. Page 6-35 of the Draft EIR describes these open space drainages as 56 acres of drainage corridors that connect to the Mather Preserve. They are not currently proposed as project mitigation; therefore, Mitigation Measure BR-1 has been modified to remove the requirement that the open space drainages be placed under a conservation easement.

The addition of a hardpan restoration plan was included as an outgrowth of the Mather Stakeholder process described in numerous responses above. The hardpan restoration plan comes from the Mather Field FEIR, which as previously mentioned has been incorporated by reference, and was included because of the controversy surrounding expert opinion with regard to perched aquifers and vernal pool systems. Please see the detailed discussion in the Mather Field FEIR on pages 7-46 through 7-48 and additionally on pages 7-54 to 7-55. Contrary to the comment, mitigation measure BR-1 includes the performance measures of requiring a qualified hydrogeologist and geotechnical expert to prepare the plan, and that the plan include identification of hardpan depths as well as appropriate backfill materials to restore hardpan functionality. The hardpan restoration plan is only for the sewer trunk line, which occurs very near the Mather Preserve. As described below there is no reason to expect subsurface hydrologic effects up gradient on the east side of the Folsom South Canal.

There has been no evidence presented that any development of the Mather South project would have indirect effects up gradient on the Sunrise Douglas (Anatolia) preserve/mitigation bank. In fact, the Sunrise Douglas Mitigation Bank referenced by the

Department is not only located up gradient of the project site but is separated from the project site by Sunrise Boulevard and the concrete lined, trapezoidal Folsom South Canal. In fact, drainage from the Sunrise Douglas project enters the Mather South project site by flowing across concrete causeways crossing the Folsom South Canal.

As discussed in the DEIR, the Mather South project occurs primarily on Red Bluff and Redding soil complexes. According to the South Sacramento Habitat Conservation Plan (Chapter 2 Physical Setting), the soils of the project area occur on the High Terrace Landform associated with the Laguna Formation and the claypan/hardpans of these soils occur from two to four feet deep. The Folsom South Canal is a trapezoidal concrete canal with an average bottom width of 34 feet and an average depth of 17.8 feet.

The depth of the Folsom South Canal and its concrete lining combined with the shallow hardpan layer of the Project soils further the argument that no-sub surface connection exists between the vernal pool resources of the up-gradient Sunrise Mitigation Bank and the Mather South Project.

COMMENT 19-19

BR-2 states that mitigation may occur at the existing Mather Preserve, please see above for why this cannot occur. It also stated that the applicant can mitigate for the loss of vernal pool habitat by creating habitat within designated preserve areas. Doing so can have its own adverse impacts that are not analyzed in this document. In addition, it is not stated that CDFW would be involved in the approval process. In the likely event that these features are connected to the stream system, a Lake or Streambed Alteration Notification would be required and CDFW should be included in the approval process.

Impact analysis for Loss of Venal Pool Invertebrates suggests the standard ratio would either be 1:1 or the total preservation required for indirect impacts should be 8.86 acres for a 2:1 ratio. Given the presence of special-status species, stressors on vernal pool systems in south Sacramento, and its proximity to critical habitat areas, the final EIR should disclose how the mitigation will reduce impacts to a less than significant level.

RESPONSE 19-19

See response to comments 19-9 and 19-11.

COMMENT 19-20

CDFW recommends revising BR-4 and subsequent measures to include agency approvals for qualified biologist(s). CDFW also recommends specifying that work handouts will include images of sensitive plants and animals that may be encountered.

CDFW recommends that biological monitors ensure that no Take of sensitive resources occur (not just listed species). For instance, several rare plants have the potential to be present and be impacted but are not necessarily "listed" under an Endangered Species Act.

RESPONSE 19-20

The County understands the need to assure that qualified biologists conduct worker awareness training and such a requirement is already included in measure BR-4. The County will coordinate with CDFW regarding biologist qualifications during implementation and enforcement of County-adopted mitigation measures; however, the County is not able to require that CDFW provide agency approval when no official procedure at CDFW exists for approving biologists.

The Draft EIR properly evaluates the project's impacts to sensitive resources, discloses the impacts and provides mitigation where feasible. There is no nexus to require "no Take" of sensitive resources and the comment from CDFW may overreach the agency's regulatory authority.

COMMENT 19-21

BR-7 is not sufficient given the potential number and diversity of special-status plants in the Project area and impact of Project activities. As stated above, a full suite of surveys should be conducted prior to circulation of the final EIR. Following the completion of the surveys, more detail should be provided on species, mitigation, and monitoring, so that CDFW can assess impacts more effectively. Mitigation should be focused to species and provide more specifics on mitigation approaches. CDFW recommends that evaluation of mitigation sites and/or transplanting be supported by adequate scientific evidence. Gathering seeds may also be an option for this section if transplantation is not scientifically viable. Regardless, CDFW recommends specifying that all activities will be carried out by a qualified botanist with adequate scientific collecting permit(s). "Comparable habitat" should be revised to "same quality or better habitat".

RESPONSE 19-21

See response to comment 19-4 regarding surveys prior to the final EIR. The mitigation measure requires the project proponent to prepare a mitigation and monitoring plan. The measure requires the proponent submit the plan to CDFW for review and comment. This process will allow for the scientific review of the proposal. The existing mitigation measure already explicitly lists seed collection as an option for re-establishment.

COMMENT 19-22

BR-9 lacks information needed to effectively minimize Take. Further minimization measures such as exclusion fencing, Project phasing, etc. should be included. As with BR-7, scientific evidence for relocation should be provided as the basis for choosing this approach. Survey method choice and relocation coordination with CDFW should be described in more detail, given the reasonable probability that Western Spadefoot Toad (*Spea hammondii*) toad may utilize the Project area habitat beyond the single vernal pool identified. The final EIR should discuss the potential for transfer of diseases, common in situations where amphibian populations are mixed. BR-9 currently reads that relocations could happen during the breeding season when egg masses are present. CDFW is concerned that this timing may substantially compromise the breeding season at impacted habitat. Breeding behavior and egg masses could be disrupted if this occurs. CDFW recommends more specifics on relocation timing and more concrete measures on impact avoidance methods.

RESPONSE 19-22

Consistent with the County response to comment 19-20 regarding the nexus required to prohibit take, the Spadefoot Toad is only a California Species of Concern. As such, it is not afforded California Endangered Species Act protections and no incidental take permit is required from CDFW. The species is required to be considered as part of the California Environmental Quality Act (CEQA) process. Consistent with the public disclosure and input aspects of CEQA and the County's public outreach process, the project has already been modified through a stakeholder process to preserve the "spadefoot pool" as discussed in response to comment 19-6. In compliance with CEQA, the EIR provides analysis of impacts to spadefoot toad, and has concluded that the existing recommended mitigation will reduce impacts to less than significant levels.

COMMENT 19-23

The removal of VELB habitat in the Project area may result in significant impacts even if Mitigation Measure BR-10 is followed. The document does not analyze the effect of the loss of the habitat in the regional context. Since "all, or nearly all" of the shrubs would be removed, this is especially relevant. CDFW is concerned that the Project site connects two populations. As a metapopulation, removal of the habitat may prevent the species from migrating to adjacent areas and result in significant impacts to VELB.

RESPONSE 19-23

The comment speculates that the project "may" prevent migration of the species through removal of habitat and cites "two populations" connected by the project site but does not provide any identification of the populations or scientific evidence supporting the concern. The VELB is not a State Listed Endangered Species but is a federally threatened species. As such, the mitigation measure appropriately identifies the U.S. Fish and Wildlife Service (USFWS) as the appropriate permitting agency and cites the USFWS Framework as a guiding document for mitigation, surveying, avoidance and minimization. The mitigation measure specifically requires compliance with the federal Endangered Species Act including consultation with the USFWS. As quoted in the mitigation measure: "Implementation of Mitigation Measure BR-10 would reduce

impacts on valley elderberry longhorn beetle to less than significant with mitigation because project applicants would be required to identify and avoid direct and indirect impacts to the extent feasible or provide compensation for loss of valley elderberry longhorn beetle habitat through USFWS-approved mitigation measures such that project implementation would not inhibit recovery of the species or result in loss of viability of the species in the region."

COMMENT 19-24

BR-11 states that surveys will be conducted within 1650 feet of Mather Lake. There is no biological reason given for the 1,650-foot buffer survey distance. Western pond turtle (*Actinemys marmorata*) is terrestrial and can be found in the surrounding upland habitats as well as the surrounding swales, wetlands, and streams. Turtles may bask on land or near water on logs, branches or boulders and terrestrial habitat may be just as important as aquatic habitat for this turtle. In some populations, turtles can be found on land 10-12 months of the year.[14] CDFW recommends that this measure be refined to more adequately address and reduce impacts.

RESPONSE 19-24

As identified in the Draft EIR, the 1,650-foot buffer is based on conservative guidance provided by CDFW. Typically, the turtle basks within 650 feet but up to 1,300 feet from aquatic habitats. There is no suitable aquatic turtle habitat on the project site. The comment does not suggest any alternative buffer size but instead speculates that turtles "may" be present elsewhere including the project site. The turtle is not afforded any state or federal endangered species act protections but is a California Species of Special Concern. As such, pursuant to CEQA, the County has determined that pre-construction surveys, utilizing the conservative buffer around Mather Lake and the mitigation contained in BR-11 that includes consultation with CDFW will be sufficient to assure that impacts are less than significant.

COMMENT 19-25

BR-13 CDFW recommends using the 15-day lapse in construction activities described in Bullet 3 throughout the draft EIR.

RESPONSE 19-25

Comment noted.

COMMENT 19-26

BR-14, Bullet 5 suggests a 150-1500-foot buffer for active burrows. CDFW recommends providing information on how buffer sizes will be determined and the justification for those buffer sizes. Starting with a larger buffer, monitoring, and then reducing buffer size would reduce impacts but also allow flexibility in construction.

RESPONSE 19-26

The mitigation, which is based on years of work with CDFW on appropriate mitigation for burrowing owl, requires coordination with CDFW and references the CDFW staff

report on Burrowing Owl Mitigation. The buffer will be based on the site-specific circumstances, published CDFW guidance and consultation with CDFW.

COMMENT 19-27

BR-16 states that two American Badger (*Taxidea taxus*) dens are within the Project area. Since this has been identified, more descriptive mitigation measures are needed. The final EIR should identify where the dens are located and how the Project will avoid (or impact) existing dens. CDFW also questions how large the exclusion zones will be, timing for den monitoring, and how the loss of a den would be mitigated. As with other measures above, CDFW cannot fully evaluate potential impacts given the information currently presented in the draft EIR.

RESPONSE 19-27

There is no need to identify the potential den locations at this time since mitigation will require pre-construction surveys of the project site. Furthermore, since site access is currently uncontrolled, identification of the dens could pose a risk to the badger if it is present on-site due to poaching or other disturbance. The comment suggests that the draft EIR must describe how the dens will be impacted or avoided. The draft EIR already does that, stating, "… there is high potential for this species to den and forage in the Plan Area and project development could result in direct mortality of individuals or loss of natal dens resulting in death of young either directly through destruction of the den or indirectly through disturbance that causes the mother to abandon her kits." The Draft EIR goes on to say, "Loss of individuals within the project site could diminish the local population of this species and lower reproductive potential, which could contribute to further declines. This impact would be potentially significant." Therefore, the County is proposing mitigation that active dens not be disturbed and has concluded that this will reduce impacts to less that significant. See response to comment 19-20 and 19-22 regarding species of special concern.

COMMENT 19-28

BR-19 states that a "no net loss of functions and values" will be achieved through a 1:1 ratio. CDFW is concerned that no net loss strategy may not reduce impacts to a less than significant level because of the sensitivity and uniqueness of vernal pool habitats. CDFW recommends a higher standard of mitigation that considers the value of the impacted ecosystems.

RESPONSE 19-28

The comment is misleading because it is provided out of context and does not reference the fact the BR-19 leads off by stating, "Compensate for Loss of Wetlands/Waters not Compensated under BR-2." The purpose of the mitigation measure is to capture any impacts that are not mitigated under the vernal pool and associated wetland habitat impact mitigation associated with the State and federally listed species addressed in BR-2 and other mitigation measures. BR-19 works in conjunction with BR-1 thorough BR-5 to assure impacts to waters and wetlands are less than significant. Impacts to the important vernal pool ecosystem are evaluated and mitigated at substantially higher

levels as indicated by BR-2 through BR-5 and the separate and distinct impact evaluation for vernal pool ecosystems provided in the EIR.

COMMENT 19-29

BR-21 3. states that equipment will be used when necessary; however, 5. states that no equipment will used at any time. CDFW recommends revising these two bullets to allow sufficient equipment use while still protecting trees. 8. Suggests boring may be needed. For any boring project, CDFW recommends an associated frac-out plan.

RESPONSE 19-29

BR-21 (3) is addressing equipment to be actively used for demolition under a dripline while BR-21 (5) is addressing storage, transport or parking of equipment under a dripline. The type of tunneling and boring generally contemplated by the mitigation measure is for the routing of small drain, irrigation or utility lines and is not associated with large equipment that would be utilizing drilling fluids.

COMMENT 19-30

As stated in the draft EIR, Notification under section 1600 of the Fish and Game Code will be required. CDFW recommends that a complete list of crossings, bridges, culverts, etc. be provided and analyzed as it relates to substantial adverse effects to fish and wildlife resources. In addition, grading and infrastructure improvements that alter the hydrology of the site have both an effect on nearby resources as well on adjacent properties.

Further information is needed in the discussion of tree removal in respect to section 1600. Given the unique nature of the Project site's cottonwood woodland, CDFW recommends providing biological evidence for why these trees are not associated with the stream system. Activities that remove these trees may be subject to Notification.

RESPONSE 19-30

Please refer to the Draft EIR, page 6-61 which states the following:

> The Plan Area does not contain designated sensitive natural communities other than vernal pool communities, which are addressed under impacts to vernal pool invertebrate habitat and impacts to wetlands. Additionally, while cottonwood woodland is traditionally a riparian community, the cottonwood woodland in the Plan Area is not associated with the bed and bank of a river, stream, or other water body and is not connected to the active floodplain of the American River. While the cottonwood woodland provides some habitat values of traditional riparian habitats (primarily nest trees), the hydrology that supports regeneration of riparian vegetation is lacking from cottonwood woodland habitat areas, the community does not support the structural diversity of typical riparian habitats, and the riparian vegetation is not associated with streambeds and banks as generally required for

jurisdiction under Section 1602 of the California Fish and Game Code. Therefore, the project would not have a substantial adverse effect on riparian habitats and this impact is **less than significant**.

COMMENT 19-31

Issuance of a Lake or Streambed Alteration Agreement (LSAA) is facilitated by comprehensive review through the CEQA process. CDFW must make a Notice of Determination when executing the LSAA, and adequate mitigation measures are needed to reduce adverse impacts to Fish and Wildlife resources. CDFW is concerned that a Statement of Overring Considerations may be needed for Project impacts because mitigation measures may not reduce impacts to a less than significant level. CDFW recommends the final EIR address these concerns prior to final certification.

RESPONSE 19-31

The County is puzzled why the need for a Statement of Overriding Considerations is a concern for CDFW when in fact it is required by law when impacts cannot be reduced to less than significant levels (CEQA Guidelines Section 15093) and serves to document for the public and decision makers why in spite of significant and unavoidable effects, the project was approved. As noted in the Draft EIR Summary of Impacts Chapter (19), "The evaluation of resources in Chapters 3 through 18 of this draft EIR identifies significant impacts in aesthetics, air quality, biological resources, noise, traffic and circulation that remain significant and unavoidable after mitigation". It is expected that most, if not all, of these impacts will remain significant and unavoidable in the Final EIR and that a Statement of Overriding Considerations will be prepared and adopted consistent with CEQA, should the Board of Supervisors decide to approve the project.

COMMENT 19-32

The draft EIR outlines goals of existing community plans which are pertinent to discussion of fish and wildlife resources. The Sacramento County General Plan seeks to "encourage development that complements the aesthetic style and character of existing development nearby to help build a cohesive identity for the area." Vernal pool and wetland ecosystems are a significant part of the character of south Sacramento County, something that previous developments have incorporated into project design. Surrounding developments such as Independence at Mather, Anatolia Subdivision, and developments within of the SunCreek Specific Plan often balance significant onsite preserves within urbanized areas (e.g. Anatolia is split directly in two). Past developments have recognized the unique character of the natural features of the region and made it part of their own. The Cordova Community Plan "encourage[s] infill development and redevelopment to strengthen and improve the character of existing development as it means to avoid sprawl in other areas… and to complement and complete existing neighborhoods." Again, existing developments reflect this goal by dispersing houses within large sections of preserve. This serves to complement and complete other neighborhoods by moving with natural features and maintaining consistency. CDFW is concerned that, as designed, the Project does not provide large, contiguous preserve sections that balance natural corridors with development. Therefore, the Project can contribute to sprawl in the south county and diminish the strong character that previous projects have set out to achieve. CDFW encourages consideration of the "biological resources alternative" or project modifications that will more effectively synchronize with previous developments.

RESPONSE 19-32

The Independence at Mather project was former Mather Air Force Base Housing built on a military installation in the late 1940's in response to the U.S. Air Force expanding their capabilities. The base housing was placed in the middle of an open area on the former Base before the importance of vernal pools was understood, before CEQA and before Endangered Species Act protections. It was not subject to environmental review and does not serve as an example of a project that was built to address sprawl or biological conservation. The comment expresses concern that the project does not disperse houses within large sections of preserve and that this can contribute to sprawl. This is contrary to modern planning principles and the State's own guidance that indicates density is one method to address sprawl. The comment is also contradictory with previous comments regarding the Project's impacts due to habitat fragmentation, human influence, introduced species and indirect effects in that the previous comments highlight the impacts development has on small preserves and set-asides yet this comment wants exactly that. Furthermore, the comment cites the Cordova Community plan and its call for infill development and then infers that other developments like SunCreek and Anatolia meet this goal. That is in fact false, both Anatolia and SunCreek were green-field developments and required movement of urban boundaries. The Mather South project has been within the County's urban growth area since the base conversion and does not require movement of any urban limit line or growth boundary. This is reflected in the Mather Field Specific Plan adopted in 1997. The Mather South project represents the adaptive re-use of a former Air Force base and is not green-field

development. The comment also infers that by dispersing housing within large sections of preserve that it "serves to complement and complete other neighborhoods". This is again false; dispersing housing around preserves, while biologically prudent in some circumstances does not make neighborhoods complete. It instead divides communities and creates barriers to movement and integration as noted by the commenter's own statement that, "Anatolia is split directly in two" by a preserve. While the County disagrees with the land-use planning aspects of the comment and reminds the Department that CEQA guidelines 15204 (d) states "…Each responsible agency and trustee agency shall focus its comments on environmental information germane to that agency's statutory responsibility", the concern for on-site preserves is noted. See response to Comment 19-6 and 19-8 for a discussion of the collaborative planning process that has resulted in current project configuration including additions of on-site protected areas (critter pool and spadefoot pool), expansion of the Mather Preserve, additional avoidance areas and reduction in intensity of uses.

COMMENT 19-33

CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database, which may be used to make subsequent or supplemental environmental determinations (Pub. Resources Code, § 21003, subd. (e)). Accordingly, please report any special-status species and natural communities detected during Project surveys to CNDDB. The CNNDB field survey form can be found at the following link: https://www.wildlife.ca.gov/Data/CNDDB/Submitting-Data. The completed form can be submitted online or mailed electronically to CNDDB at the following email address: CNDDB@wildlife.ca.gov.

RESPONSE 19-33

The comment does not pertain to the adequacy of the analysis contained in the EIR. The County is aware of the CNDDB database and reporting criteria.

COMMENT 19-34

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the Lead Agency and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required in order for the underlying project approval to be operative, vested, and final. (Cal. Code Regs, tit. 14, § 753.5; Fish & G. Code § 711.4; Pub. Resources Code, § 21089.)

RESPONSE 19-34

The comment does not pertain to the adequacy of the analysis contained in the EIR. As CDFW is aware, the County routinely collects this fee on behalf of CDFW.

LETTER 20 – SACRAMENTO MUNICIPAL UTILITY DISTRICT

Nicole Goi; written correspondence; February 21, 2019.

COMMENT 20-1

We have no comments to offer at this time, but would appreciate if Sacramento County would continue to keep SMUD facilities in mind as environmental review of the Project moves forward. Please reroute the Project analysis for SMUD's review if there are any changes to the scope of the Project.

RESPONSE 20-1

Comment noted.

LETTER 21 – CITY OF SACRAMENTO PARK PLANNING AND DEVELOPMENT SERVICE

Dana Mahaffey; written correspondence; February 8, 2019

COMMENT 21-1

We don't have any comments on the NOA at this time. Can you put me on your notification list for upcoming hearings on the project please?

Thanks!

RESPONSE 21-1

Comment noted. The commenter has been added to the project notification list.

LETTER 22 – STATE CLEARINGHOUSE

Scott Morgan; written correspondence; February 22, 2019

COMMENT 22-1

The State Clearinghouse submitted the above named Draft EIR to selected state agencies for review. The review period closed on February 21, 2019, and no state agencies submitted comments by that date. This letter acknowledges that you have complied with the State Clearinghouse review requirements for draft environmental documents, pursuant to the California Environmental Quality Act.

RESPONSE 22-1

The comment acknowledges the end of the public review period and does not address the analysis of the EIR. Comment noted.

LETTER 23 – CARL WERDER

Carl Werder; written correspondence; November 20, 2019. Follow up from oral comments on November 17, 2019.

COMMENT 23-1

You requested this information at the Vineyard meeting last Thursday. The point of my presentation was to alert everyone to the fact that there may not be water available for all of this development along Jackson Hwy. Sacramento Central Groundwater Agency (SCGA) is now tasked with developing a Groundwater Sustainability Plan (GSP) by January 2022. (See Draft Plan Schedule)

RESPONSE 23-1

A Water Supply Assessment was prepared by Sacramento County Water Agency (Appendix WS-2 to the EIR) pursuant to California Water Code Sections 10910-10915 and demonstrates that water supply is available for the project. The comment raises a concern regarding the availability of water for the proposed project, as well as the three other proposed master plans concurrently in the entitlement process along Jackson Highway. The four projects are within Sacramento County Water Agency's Zone 40 service area and the South American Sub-Basin. The comment is correct that Sacramento Central Groundwater Authority is responsible for submitting a Groundwater Sustainability Plan (GSP) for the Sub-basin to the California Department of Water Resources by January 2022.

COMMENT 23-2

SCGA originally submitted an Alternative Plan to DWR that was shot down this year. The primary reason for the denial of the Alternative Plan is the reliance on the negotiated groundwater extraction amount of 273,000 AF/yr. There is no scientific bases for this amount of groundwater extraction. Therefore, SCGA has until January 2022 to develop a GSP that scientifically determines a groundwater sustainability amount to insure that the basin remains at historical groundwater levels.

RESPONSE 23-2

The comment questions the validity of the 273,000 acre-feet per year sustainable yield that is the basis of the Water Forum Agreement, citing SCGA's Alternative submittal to CA DWR (that also relied on 273,000 AF/year) which was not approved. CA DWR was not able to determine from the information presented in the Alternative whether the 273,000 acre-feet per year (AFY) sustainable yield, is equivalent to the sustainable yield defined by the Sustainable Groundwater Management Act (SGMA). Therefore SCGA will be preparing a SGMA compliant GSP that will determine the sustainable yield of the Sub-basin to avoid undesirable results, as defined by SGMA. Until the time of an approved GSP by CA DWR there is no other sustainable yield number to use besides the 273,000 AFY.

COMMENT 23-3

As part of your office's documents in support of development along Jackson Hwy is the attached Water Supply Assessment dated January 9, 2018. (See attached File) If you look at page 18 of this document you will see the paragraph I marked that talks about the Central Basin GMP. SCGA must address trigger points from the plan, but they have yet to do so. I've included one page showing these trigger points from the 2006 GMP. (See GMP 2006 trigger Points)

As you can see by SCGA-6 monitoring well located on Eagles Nest Road between Florin and Grantline Roads the groundwater has dropped 50 feet in 15 years. (See attached SCGA-6 2019 and Monitoring Well Location Map) Note that the groundwater elevation has been below the WF low threshold for many years, a trigger point. This is just one example as a cone of depression exists under the Vineyard area. (See Fall 2018 GW Elevations) The red lines I've added are Jackson Hwy, Florin and Excelsior Roads. I've included an existing Supply Facilities map from 2014 so you can see the problem if additional wells are developed at the Excelsior Wellfield. Additional wells will only increase the problem we already have in this area.

RESPONSE 23-3

The comment cites trigger points from the 2006 Central Basin Groundwater Management Plan as potential thresholds for action consistent with the Basin Management Objective No. 2, which is to maintain specific groundwater elevations within all areas of the basin consistent with the Water Forum "solution". The comment also cites a 2018 groundwater elevation exhibit showing the groundwater elevation decline over the last 15 years, and refers to additional wells in the Excelsior Road well field which are included in SCWA's Zone 40 Water Supply Master Plan (WSMP). However, the comment does not reference the Technical Memorandum regarding Groundwater Elevation BMO Threshold Development prepared for SCGA (RMC, 2015) which is publicly available on SCGA's website (https://scgah2o.saccounty.net/pages/reports.aspx, accessed December 2, 2019). As stated in the Technical Memorandum, BMO No. 2 was established in the GMP with defined actions, but without fully quantified thresholds. Threshold values were based on percentages of a range of groundwater elevations, but that range of groundwater elevations was not defined in the GMP. Instead, a methodology was presented to define the groundwater elevation range, termed the bandwidth, relative to specific wells. The effort outlined in the Technical Memorandum implements that methodology, adjusting for changes that have occurred in the basin from both a management and technical standpoint, to fully implement BMO No. 2.

The 273,000 AFY sustainable yield is supported by the Water Forum Agreement Final Environmental Impact Report (https://www.waterforum.org/wp-content/uploads/2015/09/FEIR_WF_RES.pdf, accessed December 2, 2019) and the SCWA Zone 40 WSMP Final EIR (https://waterresources.saccounty.net/Pages/Reports-Z40-EIR.aspx, accessed December 2, 2019). Both of these EIRs identified the environmental effects associated with the groundwater extraction of 273,000 AFY, and are hereby incorporated by reference. The WFA's sustainable yield is the best currently

available information; identifying an alternative sustainable yield for the South American Sub-basin would be speculative and is outside the scope of this EIR. The SCGA will prepare a GSP and submit it for CA DWR's review by January 2022. Following submittal, CA DWR has two years to review and approve the GSP. Through that process, a new sustainable yield may be identified.

COMMENT 23-4

As I stated on Thursday, the problem is that this area is not being recharged due to Aerojet's extraction wells to contain their contaminates. Any plans to use surface water at the Vineyard Treatment Plant are subject to USBR available quantities of water under contract. I understand that this water is third tear water subject to ups and downs of mother nature.

RESPONSE 23-4

The comment is correct that surface water treated by the Sacramento County Water Agency delivered to them through the Freeport Regional Water Authority is subject to curtailment during dry years. Surface water deliveries are thoroughly analyzed in the Freeport Regional Water Project EIR {reference can be found here - Freeport Regional Water Project CEQA: https://ceqanet.opr.ca.gov/Project/2002032132 (State Clearinghouse) and http://www.freeportproject.org/nodes/explore/environmental.php (FRWA Website)} which is hereby incorporated by reference. Surface water and groundwater availability are the basis for SCWA's conjunctive use program as explained in SCWA's Zone 40 Water Supply Master Plan and associated EIR. The subsequent water supply planning process for each of the four master plans will include written verification from SCWA consistent with SCWA's first come, first served policy at the tentative subdivision map stage (SB 610 and SB 221, 2001) as each project is developed over time . These subsequent steps in conjunction with SCGA's SGMA compliant GSP will ensure the Sub-basin is sustainably managed.

COMMENT 23-5

If you have any additional questions please respond to this email. Also, please accept this document and it's attachments as my comments to any and all environmental documents for these Jackson Hwy development projects.

RESPONSE 23-5

Comment noted.

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Office of Planning and
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COUNTY OF SACRAMENTO

OFFICE OF PLANNING AND ENVIRONMENTAL REVIEW

MITIGATION MONITORING AND REPORTING PROGRAM

CONTROL NUMBER: PLNP2013-00065

NAME: Mather South Community Master Plan

LOCATION: The project site is located on the west side of Sunrise Boulevard and north of Kiefer Boulevard in the Cordova Community.

ASSESSOR'S PARCEL NUMBER(S): 067-0090-034; 067-0050-057; 067-0030-045, -072, -074, -076, and -077.

OWNER:

Sacramento County
Office of Economic Development
700 H Street, Suite 6750
Sacramento, CA 95814
Attention: Clark Whitten

APPLICANT:

Mather South, LLC
9216 Kiefer Boulevard, Suite 4
Sacramento, CA 95826
Attention: Phil Rodriguez

PROJECT DESCRIPTION:

The Mather South Project includes an 848-acre master plan community with up to 3,522 residential dwelling units of various densities (multi-family, detached, and attached single-family), a 28-acre environmental education campus including 200 multi-family dwelling units, a 21-acre research and development park, two elementary schools, a 6-

acre community center, 21 acres of commercial-retail with up to 225,000 square feet of retail space, 44 acres of parkland including 26 acres of neighborhood parks and a 17-acre community park, and 210 acres of open space areas that include a 53-acre portion of the Mather Preserve west of Zinfandel Drive, as well as other natural preserves and drainage corridors, stormwater quality and detention basins, landscape buffers, and public utility corridors all connected by multi-use pedestrian and bicycle trails.

The Mather South Project would modify the Sacramento County General Plan, the Mather Field Specific Plan and the Mather Field Special Planning Area Ordinance to reflect a level of detail applicable to a master planning and specific plan effort for an 848-acre portion of the more than 5,200 acre Mather Field Specific Plan Area. The following entitlements would result from approval of the project:

1. A **General Plan Amendment** to amend the Land Use Diagram from Urban Development Area (795 acres) to Low Density Residential (622 acres), Medium Density Residential (17 acres), Natural Preserve (86 acres) Commercial and Offices (42 acres), and Public/Quasi-Public (28 acres).

2. A **General Plan Amendment** to change the Transportation Plan to reflect proposed roadway alignments and transit systems.

3. A **General Plan Amendment** to change the Bicycle Master Plan to add internal and external bicycle facilities within and through the project area as shown in the Bicycle Master Plan Amendment Diagram.

4. A **Specific Plan Amendment** to change the Mather Field Specific Plan, specifically a portion of the South Base Area (795 acres) from Urban Development Area (795 acres) to Mather South Community Master Plan (795 acres).

5. Adoption of the **Mather South Community Master Plan** as an amendment to the Mather Field Specific Plan including text, a master plan land use diagram, design guidelines and development standards.

6. A **Zoning Ordinance Amendment** of the Mather Field Special Planning Area Ordinance (SZC 97-0021, Section 603) to incorporate the Mather South Community Master Plan, design guidelines, and development standards.

7. Acceptance of an **Affordable Housing Strategy** for the Mather South Community Master Plan consisting of on-site dedication of land for construction of affordable units.

8. Adoption of a **Development Agreement** for the Mather South Community Master Plan by and between the County of Sacramento and Applicants.

9. Amendment of the Mather Field **Public Facilities Financing Plan**.

10. Adoption of the Mather South **Urban Services Plan.**

TYPE OF ENVIRONMENTAL DOCUMENT: Environmental Impact Report

PREPARED BY: Sacramento County
Office of Planning and Environmental Review
827 7th Street, Room 225
Sacramento, CA 95814

PHONE: (916) 874-6141

MITIGATION MONITORING AND REPORTING PROGRAM

ADOPTED BY: **DATE:**

ATTEST:_____
SECRETARY/CLERK

California All-Purpose Acknowledgment

Pursuant to SB 1050 (Chapter 197, Statutes of 2014), Civil Code section 1189 has been amended to provide that any certificate of acknowledgment taken within the State of California shall be in the following form:

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
)
County of _____)

On _____ before me, _____ , Notary Public,
(Insert name and title of officer)
personally appeared _____ who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal.

_____ (Seal)
(Signature)

DECLARATION OF AGREEMENT

This Mitigation Monitoring and Reporting Program applies to certain real property, a Legal Description of which is attached as Exhibit A. I (We) the undersigned agree that this Mitigation Monitoring and Reporting Program applies to the real property described in Exhibit A. I (We) the undersigned am (are) the legal owner(s) of that property, and agree to comply with the requirements of this Mitigation Monitoring and Reporting Program (Summary and Mitigation Measures attached).

IN WITNESS WHEREOF, this declaration is hereby executed by the undersigned named legal owner(s) of the subject property on this ____ day of _____, 20_____.

OWNER(S): _____ _____
(Print name and title above) (Signature above)

_____
(Print company, corporation, or organization name above, if applicable)

California All-Purpose Acknowledgment

Pursuant to SB 1050 (Chapter 197, Statutes of 2014), Civil Code section 1189 has been amended to provide that any certificate of acknowledgment taken within the State of California shall be in the following form:

> A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California)
)
County of _____)

On _____ before me, _____ , Notary Public,
(Insert name and title of officer)
personally appeared _____ who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

Witness my hand and official seal.

_____ (Seal)
(Signature)

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PURPOSE AND PROCEDURES

Pursuant to Section 21081.6 of the Public Resources Code and Chapter 20.02 of the Sacramento County Code, a Mitigation Monitoring and Reporting Program has been established for the project entitled Mather South Community Master Plan (Control Number: PLNP2013-00065).

PURPOSE

The purpose of this program is to assure diligent and good faith compliance with the Mitigation Measures which have been recommended in the environmental document, and adopted as part of the project or made conditions of project approval, in order to avoid or mitigate potentially significant effects on the environment.

NOTIFICATION AND COMPLIANCE

It shall be the responsibility of the project applicant/owner to provide written notification to the Environmental Coordinator, in a timely manner, of the completion of each Mitigation Measure as identified on the following pages. The Environmental Coordinator will verify that the project is in compliance with the adopted Mitigation Monitoring and Reporting Program (MMRP). Any non-compliance will be reported to the project applicant/owner, and it shall be the project applicant's/owner's responsibility to rectify the situation by bringing the project into compliance and re-notifying the Environmental Coordinator. Any indication that the project is proceeding without good-faith compliance could result in the imposition of administrative, civil and/or criminal penalties upon the project applicant/owner in accordance with Chapter 20.02 of the Sacramento County Code.

PAYMENT

TIME AND MATERIALS

It shall be the responsibility of the project applicant/property owner to reimburse the County for all expenses incurred in the implementation of the Mitigation Monitoring and Reporting Program (MMRP), including any necessary enforcement actions. The applicant/property owner shall pay an initial deposit of $10,000.00. This deposit includes administrative costs of $900.00, which must be paid to the Office of Planning and Environmental Review Division prior to recordation of the MMRP and prior to recordation of any final parcel or subdivision map. The remaining balance will be due prior to review of any plans by the Environmental Coordinator or issuance of any building or grading permits. Over the course of the project, Office of Planning and Environmental Review will regularly conduct cost accountings and submit invoices to the applicant/property owner when the County monitoring costs exceed the initial deposit.

RECORDATION

In order to record the adopted Mitigation Monitoring and Reporting Program with the County Recorder as required by Section 20.02.050(b)(2) of the Sacramento County Code, the project applicant/owner shall provide to the Office of Planning and Environmental Review a Legal Description for the real property that is the subject of the project.

COMPLETION

Pursuant to Section 20.02.060 of the Sacramento County Code, upon the determination of the Environmental Coordinator that compliance with the terms of the approved Mitigation Monitoring and Reporting Program has been achieved, and that there has been full payment of all fees for the project, the Environmental Coordinator shall record and issue a Program Completion Certificate for the project.

PROPERTY TRANSFER

The requirements of this adopted Program run with the real property that is the subject of the project, as described in Exhibit A. Successive owners, heirs and assigns of this real property are bound to comply with all of the requirements of the adopted Program.

Prior to any lease, sale, transfer or conveyance of any portion of the real property that is the subject of the project, the record owner(s) at the time of the application for the project, or his or her successor's in interest, shall provide a copy of the adopted Program to the prospective lessee, buyer, transferee, or one to whom the conveyance is made.

PENALTIES

Chapter 20.02 of the Sacramento County Code permits civil remedies and criminal penalties to be imposed in the event of non-compliance with an adopted Mitigation Monitoring and Reporting Program. The civil remedies, which are found in Section 20.02.090 of the Sacramento County Code, include injunctive relief, stop work orders, revocation of any special permit granted concurrently with the approval of a Program, and the abatement of any resulting nuisance. The criminal penalties, which are found in Section 20.02.080 of the Sacramento County Code, include a fine not to exceed five hundred dollars or imprisonment in the County jail not to exceed six months, or both.

Plans that are inconsistent with the adopted Mitigation Measures will not be approved.

In the event of an ongoing, serious non-compliance issue, the Environmental Coordinator may call for a "stop work order" on the project.

STANDARD PROVISIONS

Page one of all Project Plans must include the following statement in a conspicuous location:

> "All Plans associated with this project are subject to the conditions of Mitigation Monitoring and Reporting Program PLNP2013-00065. For any questions regarding compliance with the MMRP document, contact MMRP staff at (916) 874-6141."

All Project Plans and any revisions to those Plans shall be in full compliance with the adopted Mitigation Monitoring and Reporting Program (MMRP). The project applicant/owner shall submit one copy of all such Plans and any revisions to the Environmental Coordinator prior to final approval by the Sacramento County Building Permits and Inspection Division (BPID) or Site Improvement and Permit Section (SIPS). If the Environmental Coordinator determines that the Plans are not in full compliance with the adopted MMRP, the Plans shall be returned to the project applicant/owner with a letter specifying the items of non-compliance, and instructing the applicant/owner to revise the Plans, and then resubmit one copy of the revised Plans to the Environmental Coordinator, for determination of compliance, prior to final approval by BPID or SIPS.

Additionally, the project applicant/owner shall notify the Environmental Coordinator no later than 48 hours prior to the start of construction and no later than 24 hours after its completion. The applicant/owner shall notify the Environmental Coordinator no later than 48 hours prior to any/all Final Inspection(s) by the County of Sacramento.

☐ MITIGATION MEASURE AE-1: NEW SOURCES OF LIGHT OR GLARE

The Community Master Plan shall be amended to require all lighting applications to use fixtures approved by the International Dark Sky Association.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE AQ-1: PROGRAMMATIC LEVEL CONSTRUCTION EMISSIONS

Construction exhaust and fugitive dust emissions controls. All individual public and private subsequent projects within the project area shall implement SMAQMD's Basic Construction Emission Control Practices and SMAQMD's Enhanced Exhaust Control Practices during any construction or ground disturbance activities to reduce construction-related fugitive dust emissions, diesel PM, and NO_X emissions. These measures are included below.

BASIC CONSTRUCTION EMISSIONS CONTROL PRACTICES (BEST MANAGEMENT PRACTICES)

The following Basic Construction Emissions Control Practices are considered feasible for controlling fugitive dust from a construction site. The practices also serve as best management practices (BMPs), allowing the use of the non-zero particulate matter significance thresholds.

Control of fugitive dust is required by District Rule 403 and enforced by District staff.

- Water all exposed surfaces two times daily. Exposed surfaces include, but are not limited to soil piles, graded areas, unpaved parking areas, staging areas, and access roads.
- Cover or maintain at least two feet o**f** free board space on haul trucks transporting soil, sand, or other loose material on the site. Any haul trucks that would be traveling along freeways or major roadways should be covered.
- Use wet power vacuum street sweepers to remove any visible trackout mud or dirt onto adjacent public roads at least once a day. Use of dry power sweeping is prohibited.
- Limit vehicle speeds on unpaved roads to 15 miles per hour (mph).
- All roadways, driveways, sidewalks, parking lots to be paved should be completed as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used.

The following practices describe exhaust emission control from diesel powered fleets working at a construction site. California regulations limit idling from both on-road and off-road diesel powered equipment. The California Air Resources Board enforces the idling limitations.

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes [required by California Code of Regulations, Title 13, sections 2449(d)(3) and 2485]. Provide clear signage that posts this requirement for workers at the entrances to the site.

Although not required by local or state regulation, many construction companies have equipment inspection and maintenance programs to ensure work and fuel efficiencies.

- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.

Lead agencies may add these emission control practices as Conditions of Approval (COA) or include in a Mitigation Monitoring and Reporting Program (MMRP).

ENHANCED ON-SITE EXHAUST CONTROL PRACTICES

1. The project applicant, or its designee, shall provide a plan for approval by the Sac Metro Air District that demonstrates the heavy-duty off-road vehicles (50 horsepower or more) to be used 8 hours or more during the construction project will achieve a project wide fleet-average 10% NOX reduction compared to the most recent California Air Resources Board (CARB) fleet average. The plan shall have two components: an initial report submitted before construction and a final report submitted at the completion.

    - Submit the initial report at least four (4) business days prior to construction activity using the Sac Metro Air District's Construction Mitigation Tool (http://www.airquality.org/businesses/ceqa-land-use-planning/mitigation).
    - Provide project information and construction company information.
    - Include the equipment type, horsepower rating, engine model year, projected hours of use, and the CARB equipment identification number for each piece of equipment in the plan. Incorporate all owned, leased and subcontracted equipment to be used.
    - Submit the final report at the end of the job, phase, or calendar year, as pre-arranged with Sac Metro Air District staff and documented in the approval letter, to demonstrate continued project compliance.

2. The Sac Metro Air District may conduct periodic site inspections to determine compliance. Nothing in this mitigation shall supersede other air district, state or federal rules or regulations.

3. This mitigation will sunset on January 1, 2028, when full implementation of the CARB In-Use Off-Road Regulation is expected.

OFF-SITE CONSTRUCTION MITIGATION FEES

1. The environmental document identified that construction-generated emissions of nitrogen oxide (NO_x) will exceed the Sac Metro Air District's threshold of significance

The project applicant, or its designee, shall pay a mitigation fee and an administrative fee to the Sac Metro Air District to reduce the project impacts from construction NO_X emissions to a less than significant level.

2. The project applicant, or its designee, shall pay the mitigation and administrative fees in full prior to the lead agency issuing a grading permit that would allow activity that would exceed Sac Metro Air District's threshold.

3. An alternative payment plan may be negotiated by the project applicant, or its designee, based on the timing of construction phases that are expected to exceed the Sac Metro Air District's threshold of significance. Any alternative payment plan must be acceptable to the Sac Metro Air District and agreed upon in writing prior to issuance of a grading permit by the lead agency.

4. In coordination with the lead agency and the Sac Metro Air District, the project applicant, or its designee, may reanalyze construction NO_x emissions from the project prior to starting construction to account for any changes to CARB's In-Use Off-Road Diesel Equipment Regulation and/or statewide equipment emissions factors that form the baseline assumptions in the Sac Metro Air District's construction mitigation program, or any changes to the assumptions in the construction analysis in the EIR.

   a. The analysis must be conducted using Sac Metro Air District approved emissions model(s) and the fee rates published at the time of reanalysis.

   b. The analysis may include on-site measures to reduce construction emissions if deemed feasible by the lead agency and project applicant. All on-site measures assumed in the analysis must be included in the construction contracts and be enforceable by the lead agency.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE AQ-2: LONG-TERM OPERATION EMISSIONS OF NO_X, ROG, PM_{10}, AND $PM_{2.5}$

Implement provisions of the Air Quality Mitigation Plan (AQMP) to reduce operational emissions. Implementation of the following measures requires compliance with the project's AQMP, which would reduce the project's mobile-source operational ozone precursors by 15 percent in comparison to the unmitigated project.

The Mather South Community Master Plan shall include the following reduction measures, which are detailed within the AQMP (Appendix AQ-2 of the EIR), as conditions of approval:

- Incorporate traffic calming measures.
- Implement neighborhood electric vehicle (NEV) network.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE AQ-3: LONG-TERM OPERATION EMISSIONS OF NO_X, ROG, PM_{10}, AND $PM_{2.5}$

Implement Mitigation Measure CC-2. The project developer shall incorporate the following mitigation measures into the project to reduce operational emissions of criteria air pollutants and precursors to the extent feasible.

TRANSPORTATION

- For each single-family residential unit, install a listed raceway, associated overcurrent protective device and the balance of a dedicated 208/240-volt branch circuit at 40 amperes (amp) minimum. The raceway shall not be less than the trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or unit subpanel and shall terminate into a listed cabinet, box, or other enclosure near the proposed location of an electric vehicle (EV) charger. Raceways are required to be continuous at enclosed, inaccessible, or concealed areas and spaces. The service panel and/or subpanel shall provide capacity for a 40-amp minimum dedicated branch circuit. All electrical circuit components and Electric Vehicle Service Equipment (EVSE), including a receptacle or box with a blank cover, related to Section A4.106.8 of the California Green Building Standards Code shall be installed in accordance with the California Electrical Code.
- Multifamily residential buildings shall design at least 10 percent of parking spaces to include EVSE, or a minimum of two spaces to be installed with EVSE for buildings with 2-10 parking spaces. EVSE includes EV charging equipment for each required space connected to a 208/240-volt, 40-amp panel with conduit, wiring, receptacle, and overprotection devices.
- Nonresidential buildings shall design at least 10 percent of parking spaces to include EVSE, or a minimum of two spaces to be installed with EVSE for buildings with 2-10 parking spaces. EVSE includes EV charging equipment for each required space connected to a 208/240-volt, 40-amp panel with conduit, wiring, receptacle, and overprotection devices.
- Nonresidential land uses with 20 or more on-site parking spaces shall dedicate preferential parking spaces to vehicles with more than one occupant and ZEVs (including battery electric vehicles and hydrogen fuel cell vehicles). The number of dedicated spaces should be no less than two spaces or 5 percent of the total parking spaces on the individual project site, whichever is greater. These dedicated spaces shall be in preferential locations such as near the main entrances to the buildings served by the parking lot and/or under the shade of structures or trees. These spaces shall be clearly marked with signs and pavement markings. This measure shall not be implemented in a way that

prevents compliance with requirements in the California Vehicle Code regarding parking spaces for disabled persons or disabled veterans.

BUILDING ENERGY

- All project buildings shall be designed to include Cool Roofs in accordance with the requirements set forth in Tier 2 of the California Green Building Energy Code, Sections A4.106.5 and A5.106.11.2.
- All project buildings shall comply with requirements for water efficiency and conservation as described in the California Green Building Standards Code, Divisions 4.3 and 5.3.
- Multiple electric receptacles shall be included on the exterior of all nonresidential buildings and accessible for purposes of charging or powering electric landscaping equipment and providing an alternative to using fossil-fuel-powered generators. The electrical receptacle shall have an electric potential of 100 volts. There should be a minimum of one electrical receptacle on each side of the building and one receptacle every 100 linear feet around the perimeter of the building.
- Ensure that all appliances and fixtures installed in buildings developed under the project are Energy Star®-certified if an Energy Star®-certified model of the appliance is available. Types of Energy Star®-certified appliances include boilers, ceiling fans, central and room air conditioners, clothes washers, compact fluorescent light bulbs, computer monitors, copiers, consumer electronics, dehumidifiers, dishwashers, external power adapters, furnaces, geothermal heat pumps, programmable thermostats, refrigerators and freezers, residential light fixtures, room air cleaners, transformers, televisions, vending machines, ventilating fans, and windows (EPA 2018). If EPA's Energy Star® program is discontinued and not replaced with a comparable certification program before appliances and fixtures are selected, then similar measure which exceed the 2016 California Green Building Standards Code may be used.
- Require all space and water heating to be solar- or electric-powered.
- All cooking appliances shall be solar- or electric-powered. Natural gas usage for any household appliance shall be prohibited.
- Provide incentives to future residents to purchase electric vehicles.
- Install high-efficiency lighting (i.e., light emitting diodes) in all streetlights, security lighting, and all other exterior lighting applications.
- Create a local composting program for residents to achieve the statewide 75 percent waste diversion target.

☐ MITIGATION MEASURE AQ-4: EXPOSURE OF SENSITIVE RECEPTORS TO TACS

Incorporation of design features for retail center to address TACs. To reduce exposure of existing or future receptors to diesel PM exhaust emissions at commercial and educational loading docks, the following design measures shall be incorporated into the MSCMP.

- Proposed commercial and educational, land uses that have the potential to emit TACs or host TAC-generating activity (e.g., loading docks) shall be located as far away from existing and proposed on-site sensitive receptors as possible such that they do not expose sensitive receptors to TAC emissions that exceed an incremental increase of 10 in 1 million for the cancer risk and/or a noncarcinogenic Hazard Index of 1.0.
- Loading dock design may incorporate the use of buildings or walls to shield commercial activity from nearby residences or other sensitive land uses.
- Signs shall be posted at all loading docks and truck loading areas which indicate that diesel-powered delivery trucks must be shut off when not in use for longer than 5 minutes on the premises to reduce idling emissions.
- Sensitive receptors, such as residential units and daycare centers, shall not be located in the same building as dry-cleaning operations that use perchloroethylene. Dry-cleaning operations that use perchloroethylene shall not be located within 300 feet of any sensitive receptor. A setback of 500 feet shall be provided for operations with two or more machines.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE AQ-5: EXPOSURE OF SENSITIVE RECEPTORS TO ODORS

Incorporation of design features for retail establishments to address potential odor sources. The project developer shall implement the following measures to reduce exposure of sensitive receptors to odorous emissions. These measures shall be incorporated into the Mather South Community Master Plan Design Guidelines.

- Land uses have that the potential to emit objectionable odorous emissions (e.g., dry cleaning establishments and gasoline stations) shall be located as far away as possible from existing and proposed sensitive receptors or downwind of nearby receptors.
- If an odor-emitting facility is to occupy a retail space, odor control devices shall be installed to reduce the exposure of receptors to objectionable odorous emissions. SMAQMD shall be consulted to determine applicable/feasible control devices to be installed. Use of setbacks, site design considerations, and emission controls are typically sufficient to ensure that receptors located near retail uses would not be exposed to odorous emissions on a frequent basis.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE AC-1: SAFETY HAZARD TO PEOPLE LIVING AND WORKING IN THE VICINITY OF AN AIRPORT/AIRSTRIP

In accordance with the Mather Field Project Development Standards, the project would be required to be reviewed by the Airport Land Use Commission prior to approval or issuance of building permits to ensure that it is compatible with the Mather Airport safety zones.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE AC-2: SAFETY HAZARD TO PEOPLE LIVING AND WORKING IN THE VICINITY OF AN AIRPORT/AIRSTRIP

Development applications that result from the Mather South Project that are located within Mather Airport safety zones shall be reviewed by the Airport Land Use Commission prior to approval or issuance of building permits in order to ensure that proposed projects are compatible with the safety zones.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE AC-3: EXPOSURE TO EXCESSIVE NOISE LEVELS ASSOCIATED WITH AIRPORT OPERATIONS

Development related to the Mather South Project shall be in compliance with the uses and standards included in Table 4: Land Use Compatibility for Airport Noise found within the Noise Element of the Sacramento County General Plan prior to approval or issuance of building permits.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-1: OPEN SPACE PRESERVATION AND OPEN SPACE DRAIN CONSERVATION EASEMENTS

Before issuance of grading permits, approval of improvement plans, or building permits, whichever occurs first, the Open Space Mather Preserve and Nature Preserve land use areas identified on the proposed land use plan shall be placed within a permanent conservation easement granted to a registered 501 (c)(3) conservation organization and incorporated into the existing Mather Preserve network as approved by the County, USACE, and USFWS. The County shall be the owner of preserved lands and shall establish an endowment to fund management of the wetland preserves and easement compliance monitoring. All wetland preserve areas shall be managed to maintain habitat suitability for vernal pool invertebrates, particularly vernal pool fairy shrimp and vernal pool tadpole shrimp, benefit plants and animals native to California, as well as to protect and enhance hydrologic functions and processes consistent with the final wetlands management plan. Habitat management of the preserve shall include managing invasive plant species by reducing existing infestations and preventing establishment of new infestations consistent with the final wetlands management plan. Fencing and signage shall be installed at the boundary between the developed portions of the Plan Area and the Mather Preserve to identify the preserve as a protected sensitive resource area and prevent unauthorized trespassing into the preserve.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-1A: PREPARE A HARDPAN RESTORATION PLAN

Prior to the start of construction activity for the sewer trunk line and the water transmission main line (within Zinfandel Drive), a hardpan restoration plan shall be developed by a qualified hydrogeologist and geotechnical expert and implemented for sewer trunk line and water transmission main line construction adjacent to the Mather Preserve. The detailed plan shall include identification and documentation of the hardpan depths during excavation of the sewer trench and water line, and appropriate backfill material to restore the hardpan functionality. The detailed hardpan restoration plan shall be included in the construction specifications for the proposed sewer trunk line.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-2: COMPENSATE FOR LOSS OF VERNAL POOL INVERTEBRATE HABITAT AND TAKE OF FEDERALLY LISTED VERNAL POOL INVERTEBRATES

Before any groundbreaking activity within 250 feet (or lesser distance deemed sufficiently protective through site-specific watershed analysis with approval from USFWS) of vernal pool invertebrate habitat, project applicants for each distinct project phase shall purchase habitat creation credits at a USACE and USFWS approved mitigation bank, record a conservation easement over lands that include created/restored/rehabilitated vernal pool habitat and implement a final preserve management plan approved by the County, USACE, and USFWS, and or restore vernal pool habitat within the designated preserve areas, upon USFWS approval, to fully compensate for the project's direct and indirect impacts to habitat for federally listed vernal pool species. The combination of habitat creation credits and restoration shall be equivalent to 14.53 acres, at a minimum, to compensate for the direct loss of vernal pool habitat within the Plan Area. Additional preservation credits shall be purchased to compensate for indirect impacts if it is determined during ESA Section 7 consultation that onsite preservation and preservation within the Mather Preserve is not sufficient to satisfy the 2:1 preservation ratio necessary to compensate for direct and indirect impacts. The acreage and function of all wetlands that would be removed as a result of project implementation shall be replaced and restored on a "no-net-loss" basis.

If restoration within the Mather Preserve is implemented as part of compensatory mitigation, the restoration goal shall be to restore and enhance habitat for vernal pool species such that their ultimate functions and services are equal to or greater than the wetland features directly or indirectly affected by project implementation. This effort could include restoring vernal pools and/or other suitable aquatic features that have been damaged by prior activities such that a functional lift is achieved. If restoration is proposed as part of mitigation, the project applicant shall submit a vernal pool habitat restoration plan to the County, USACE, and USFWS for review and approval before any ground disturbance within 250 feet (or lesser distance deemed sufficiently protective through site-specific watershed analysis with approval from USFWS) of vernal pool invertebrate habitat. The restoration plan must demonstrate how the aquatic functions that would be lost through project implementation will be replaced. The plan shall identify in-kind reference wetland habitats for comparison with restored wetlands (using performance standards and success criteria) to document success. The restoration plan shall include the following elements:

- monitoring protocol, including responsible parties, schedule, and annual report requirements;
- ecological performance standards, based on the best available science, that can be assessed in a practicable manner (e.g., performance standards proposed by Barbour et al. 2007). Performance standards must be based on attributes that are objective and verifiable;

- monitoring of plant communities as performance criteria (annual measure of success, during monitoring period) and success criteria (indicative of achievement of mitigation habitat requirement at end of monitoring period) for hydrologic function have become established and the creation site "matures" over time;
- GIS analysis of compensatory wetlands to demonstrate actual acreage of functioning wetland habitat;
- adaptive management measures or corrective measures to be applied if performance standards and acreage requirements are not being met;
- responsible parties for receiving and reviewing reports and for verifying success or prescribing implementation or corrective actions.

The restoration plan shall be approved by USFWS and USACE before completion of Section 7 consultation under ESA and issuance of any permits under Section 404 of the CWA for fill of wetlands.

Final mitigation ratios will be determined by USACE using their mitigation ratio checklist process and will be coordinated with USFWS during the ESA Section 7 consultation between USACE and USFWS; however, the minimum compensation ratios for impacts on federally listed vernal pool invertebrate habitat shall be as follows:

- 2 acres of preservation and 1 acre of creation/restoration/rehabilitation for each acre of direct impact
- 2 acres of preservation for each acre of indirect impact

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-3: SECURE TAKE AUTHORIZATION FOR FEDERALLY LISTED VERNAL POOL INVERTEBRATES AND IMPLEMENT ALL CONDITIONS IN THE BIOLOGICAL OPINION

Before any groundbreaking activity within 250 feet (or lesser distance deemed sufficiently protective through site-specific watershed analysis with approval from USFWS) of vernal pool invertebrate habitat, project applicants for each distinct project phase shall secure take authorization from USFWS through ESA section 7 consultation between USACE and USFWS as part of the CWA Section 404 permit process. The applicant shall implement all conditions of the Section 404 permit and the biological opinion issued for the project, including compensatory mitigation at the ratios described under Mitigation Measure BR-2 or as required in the biological opinion, whichever is greater.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-4: IMPLEMENT WORKER ENVIRONMENTAL AWARENESS PROGRAM

Project applicants shall retain a qualified biologist to conduct a worker environmental awareness program (WEAP) for construction crews before each phase of project construction. The WEAP training will be provided to all construction personnel regarding the need to avoid effects on sensitive biological resources (i.e., wetlands, non-wetland waters, special-status species habitats in and adjacent to the construction area, and active bird nests). The WEAP will include a brief review of the special-status species with the potential to occur on the project site (including their life history, habitat requirements, and photographs of the species). The training shall identify the portions of the project site in which the species may occur, as well as their legal status and protection. The program shall also cover the relevant permit conditions, BMPs, and mitigation measures that must be followed by all construction personnel to reduce or avoid effects on these resources during project construction. During WEAP training, construction personnel shall be informed of the importance of avoiding ground-disturbing activities outside of designated work areas. Training shall identify the steps to be taken if a special-status species is found within the construction area (i.e., notifying the crew foreman, who will inform the designated biologist). In addition, construction employees shall be educated about the importance of controlling and preventing the spread of invasive plants. An environmental awareness handout that describes and illustrates sensitive resources to be avoided during project construction and identifies all relevant permit conditions shall be provided to each crew member. The crew foreman will be responsible for ensuring that crew members adhere to the guidelines and restrictions. Education programs will be conducted for appropriate new personnel as they are brought on the job during the construction period.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-5: PROTECT HABITAT IN PRESERVE AREAS AND AVOIDED HABITATS DURING CONSTRUCTION

Avoided and protected habitat in the Mather Preserve, Nature Preserves, and Open Space Drain areas shall be protected during construction activities through implementation of the following measures:

- A biological monitor approved by USFWS and CDFW shall be onsite during construction within 250 feet of vernal pool invertebrate habitat to be preserved to ensure no unauthorized take of listed species or destruction of habitat to be preserved occurs. The biologist shall have the authority to stop any activities that may result in such take or destruction until appropriate corrective measures have been completed. The biologist also shall be required to report immediately any unauthorized impacts to the USFWS or CDFW, as appropriate depending on agency jurisdiction over the affected resource.
- The project applicant shall install fencing, stakes/flagging, or other appropriate barrier between the active construction work area and adjacent sensitive biological resource areas outside the work area, including in the Mather Preserve area and any sensitive resources that are to be retained onsite, to prevent inadvertent encroachment into these sensitive areas. The location of barrier installation shall be directed by the onsite biological monitor.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-6: SPECIAL STATUS PLANTS

Implement BR-1 through BR-5

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-7: CONDUCT FLORISTIC SURVEYS AND COMPENSATE FOR LOSS OF SPECIAL-STATUS PLANTS

The County shall require project applicants, as a condition of project approval, before any groundbreaking activity within 250 feet of vernal pools, swales, and seasonal wetlands, to retain a qualified biologist familiar with the vernal pool flora of the region to conduct floristic surveys of wetland habitats on the entire Mather South project site with potential to support slender orcutt grass, Sacramento orcutt grass, Ahart's dwarf rush, Bogg's Lake hedge-hyssop, dwarf downingia, pincushion navarretia and legenere. The surveys shall be carried out during the time of year when the target species are easily identified (generally, the blooming period) and at least two survey rounds, one in spring and one in summer, shall be conducted. Nearby reference populations shall be visited before surveys, if available, to confirm the target species have emerged and are in an identifiable state. All plants encountered during surveys shall be identified to the taxonomic level necessary to determine rarity status. Floristic surveys shall be conducted no more than 5 years prior and no later than the blooming period immediately preceding the approval of a grading or improvement plan or any ground disturbing activities, including grubbing or clearing in areas that could directly or indirectly affect potential habitat for target special-status plants.

If special-status plants are identified on the project site, the project applicants shall be required to implement the following measures to mitigate the potential loss of special-status plant species:

- Avoid special-status plant occurrences through project design to the extent technically feasible and appropriate. Avoidance shall be deemed technically feasible and appropriate if the habitat occupied by special-status plants may be preserved onsite while still obtaining the project purpose and objectives and if the preserved habitat features could reasonably be expected to continue to function as suitable habitat for special-status plants following project implementation.
- If after examining all feasible means to avoid impacts to potential special-status plant species habitat through project site planning and design, adverse effects cannot be avoided, then impacts shall be mitigated in accordance with guidance from the appropriate state or federal agency charged with the protection of the subject species (USFWS or CDFW). Wetlands that have been previously documented to support legenere and Ahart's dwarf rush have been identified for removal in the southern portion of the Plan Area and mitigation for loss of these plant occurrences shall be mitigated.
- Notify CDFW, as required by the California Native Plant Protection Act, of any special-status plants found on the project site. Notify the USFWS if any plant species listed under the Endangered Species Act are found.
- Develop a mitigation and monitoring plan to compensate for the loss of known legenere and Ahart's dwarf rush, and any additional special-status plant species found during preconstruction surveys. The mitigation and monitoring

plan shall be submitted to CDFW or USFWS, as appropriate depending on species status, for review and comment. The County shall consult with these entities, as appropriate depending on species status, before approval of the plan to determine the appropriate mitigation measures for impacts on any special-status plant population. Mitigation measures may include preserving and enhancing existing onsite populations, creation of off-site populations on project mitigation sites through seed collection or transplantation, and/or preserving occupied habitat off-site in sufficient quantities to offset loss of occupied habitat or individuals. The preservation of existing occurrences of legenere and Ahart's dwarf rush in the Mather Preserve may be used as compensation for loss of habitat occupied by these species within the Plan Area; however, additional mitigation may be required, including transplantation of the plants to be removed, if the County, in consultation with CDFW determines that preservation of the Mather Preserve occurrences is not sufficient to fully compensate for losses resulting from project implementation.

- If transplantation is part of the mitigation plan, the plan shall include a description and map of mitigation sites, details on the methods to be used, including collection, storage, propagation, receptor site preparation, installation, long-term protection and management, monitoring and reporting requirements, remedial action responsibilities should the initial effort fail to meet long-term monitoring requirements, and sources of funding to purchase, manage, and preserve the sites. Transplantation to suitable wetland habitats within the Mather Preserve may be used as part of the mitigation plan for legenere and Ahart's dwarf rush, as well as any other special-status plants found in the Plan Area, if a qualified restoration ecologist determines through site-specific analysis, in consultation with CDFW or USFWS, depending on species status, that currently unoccupied wetlands in the preserve are suitable to support the affected species. The following performance standards shall be applied:
    - The extent of occupied area and the flower density in compensatory re-established populations shall be equal to or greater than the affected occupied habitat and shall be self-producing. Re-established populations shall be considered self-producing when:
        - plants re-establish annually for a minimum of 5 years with no human intervention, such as supplemental seeding; and
        - re-established populations contain an occupied area and flower density comparable to existing occupied habitat areas in similar reference habitat types.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-8: LOSS OF WESTERN SPADEFOOT HABITAT

Implement BR-1 through BR-5

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-9: MINIMIZE TAKE OF WESTERN SPADEFOOT

As a condition of project approval and before ground disturbing activities, the County shall require future project proponents to retain a qualified biologist to conduct surveys for western spadefoot in areas of potential habitat that would be eliminated by the project. The surveys shall be conducted at the appropriate time of year to detect western spadefoot, generally the breeding season, according to methods approved by CDFW. If western spadefoot is found in habitat that will be eliminated or made unsuitable for western spadefoot, then adult and larval western spadefoot and egg masses shall be collected and relocated to suitable habitat in the Mather Preserve by a qualified biologist in coordination with CDFW.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-10: COMPENSATE FOR THE LOSS OF VALLEY ELDERBERRY LONGHORN BEETLE HABITAT

- As a condition of project approval, a qualified biologist shall determine whether future project sites contain valley elderberry longhorn beetle habitat (i.e., elderberry shrubs). If so, a preconstruction survey shall be conducted by a qualified biologist within 165 feet of project disturbance areas before any construction activity. The surveys shall be conducted according to the protocol outlined in USFWS *Framework for Assessing Impacts to the Valley Elderberry Longhorn Beetle* (USFWS 2017b) (Framework).
- If elderberry shrubs are located 165 feet or more from project activities, direct or indirect impacts are not expected. Shrubs 165 feet or more away shall be protected during construction by establishing and maintaining a high visibility fence at least 165 feet from the drip line of each elderberry shrub to prevent inadvertent encroachment into valley elderberry longhorn beetle habitat.
- If elderberry shrubs located within 165 feet of project activities can be retained, project activities may occur up to 20 feet from the dripline of elderberry shrubs if precautions are implemented to minimize the potential for indirect impacts. An avoidance area shall be established at least 20 feet from the drip line of an elderberry shrub for any activities that may damage or kill the elderberry shrub (e.g., trenching, paving, etc.). The project applicant shall implement avoidance and minimization measures specified in the USFWS Framework (USFWS 2017b).
- To the extent feasible, all activities that could occur within 165 feet of an elderberry shrub, shall be conducted outside of the flight season of the valley elderberry longhorn beetle (March - July).
- Herbicides shall not be used within the drip line of shrubs to be retained. Insecticides shall not be used within 100 feet of elderberry shrubs. All chemicals shall be applied using a backpack sprayer or similar direct application method.
- If trimming elderberry shrubs is proposed for shrubs to be retained, trimming shall be conducted between November and February and shall not result in the removal of elderberry branches that are ≥1 inch in diameter. If trimming results in removing branches that are ≥1 inch in diameter, the project proponent shall mitigate for the loss of the valley elderberry beetle habitat according to the USFWS 2017 Framework.
- The project applicant shall comply with ESA and consult with USFWS and will compensate for the unavoidable loss of elderberry shrubs according to the USFWS 2017 Framework. The Framework uses presence or absence of exit holes, and whether the affected elderberry shrubs are in riparian habitat to determine the number of elderberry seedlings or cuttings and associated riparian vegetation that would need to be planted as compensatory mitigation for affected valley elderberry longhorn beetle habitat. Compensatory mitigation may include purchasing credits at a USFWS-approved

conservation bank, providing onsite mitigation, or establishing and protecting habitat for valley elderberry longhorn beetle as follows:

- For elderberry shrubs in riparian habitat:
    - For each shrub that is trimmed, the project proponent shall purchase two credits at a USFWS-approved bank.
    - For each shrub removed, the entire shrub may be transplanted to a USFWS-approved location in addition to the purchase of two credits.
- For elderberry shrubs in non-riparian habitat:
    - The project proponent shall purchase one credit at a USFWS-approved bank for each shrub that will be trimmed if exit holes have been found in any shrub on or within 165 feet of the project area.
    - If no exit holes are present and the shrub is not in riparian habitat, no further action is required.
    - If the shrub will be completely removed by the activity, the entire shrub shall be transplanted to a USFWS-approved location in addition to the purchase of one credit.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-11: CONSTRUCT PRECONSTRUCTION SURVEYS FOR WESTERN POND TURTLE AND AVOID INDIVIDUALS AND NESTS

Before any ground disturbing activities within 1,650 feet of Mather Lake, the project applicant shall consult with CDFW to establish appropriate avoidance procedures and procedures to apply if a western pond turtle, or active nest, is found within the construction area. The developer shall submit written evidence of the consultation and its conclusions to the County Environmental Coordinator. Unless CDFW recommends alternative mitigation through the consultation, the following measures shall apply:

- Twenty-four hours before the commencement of ground-disturbing activity (i.e. clearing, grubbing, or grading) within 1,650 feet of Mather Lake, a qualified biologist shall perform a survey for western pond turtle. The survey shall include all suitable upland and aquatic habitat which is within 1,650 feet of all proposed construction areas. The biologist shall supply a brief written report (including date, time of survey, survey method, name of surveyor and survey results) to the County before ground disturbing activity.
- If western pond turtles are found during the survey, activities shall not commence until the animal has moved out of the construction area on its own or CDFW grants permission for a qualified biologist to move the animal out of the construction area and into a suitable habitat area.
- If a western pond turtle is encountered during active construction, all construction shall cease until the animal has moved out of the construction area on its own or CDFW grants permission for a qualified biologist to move the animal out of the construction area and into a suitable habitat area. California Fish and Wildlife and the County Environmental Coordinator shall be notified within 24-hours that a turtle was encountered.
- If a nest with eggs or hatchlings is found during surveys or construction, all activity shall cease until appropriate procedures for avoidance or handling established during consultation with CDFW can be implemented. CDFW and the County Environmental Coordinator shall be notified within 24 hours of nest discovery.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-12: AVOID SWAINSON'S HAWK NESTS

- Implement Mitigation Measure BR-4: Worker Environmental Awareness Program
- Tree removal shall be conducted during the non-breeding season for Swainson's hawk (generally between September 1 and February 28)
- Before initiating any construction activities during the Swainson's hawk breeding season (March 1 through August 31), project proponents shall retain a qualified wildlife biologist with knowledge of Swainson's hawk to conduct nesting surveys to identify active nests on and within 0.5 mile of the Plan Area.
- Surveys shall be conducted in accordance with the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000) or according to updated methodologies issued by CDFW. According to current guidelines, the biologist will use binoculars during the survey to inspect all large trees and document any Swainson's hawk nests that occur in the Plan Area or within 0.5 mile. If surveys conclude that Swainson's hawk nests occur onsite, and are occupied, the following minimization measures shall be implemented:
    - A no disturbance buffer shall be established around active nest sites. Project activity shall not commence within the buffer areas until a qualified biologist has determined, in coordination with CDFW, that the young have fledged, the nest is no longer active, or reducing the buffer would not likely result in nest abandonment. CDFW guidelines recommend implementation of 0.5-mile-wide buffer for Swainson's hawk, but the size of the buffer may be adjusted if a qualified biologist and the County, in consultation with CDFW, determine that such an adjustment would not be likely to adversely affect the nest. Monitoring of the nest by a qualified biologist during and after construction activities shall be required if the activity has potential to adversely affect the nest.
    - Active nests shall be monitored by a qualified biologist during construction activities that have potential to adversely affect nesting. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases. The exclusionary buffer will remain in place until the chicks have fledged or as otherwise determined appropriate by a qualified biologist. Once the young have fledged, project activities may proceed normally.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-13: AVOID TRICOLORED BLACKBIRD NESTING COLONIES

- Implement Mitigation Measure BR-4: Worker Environmental Awareness Program
- For any construction activities proposed within 0.25 mile of Mather Lake during the tricolored blackbird nesting season (March 15 to August 31), a qualified biologist shall survey Mather Lake and a 0.25-mile buffer no more than 48 hours before the onset of activities for signs of tricolored blackbird individuals or nesting/colonial activity.
- If construction activities are delayed or suspended for more than 15 days, an additional preconstruction tricolored blackbird survey will be conducted. If active tricolored blackbird nests are found within 0.25 mile of the project footprint during the nesting season (March 15 to August 31), then no construction activities shall proceed within 0.25 mile of the nest site until the end of the breeding season or until a qualified biologist, in consultation with CDFW, has determined that the young have fledged and moved out of the disturbance area. The buffer distance may be reduced if a qualified biologist, in consultation with CDFW, determines that such an adjustment would not be likely to affect the nesting colony.
- Monitoring of the nesting colony by a qualified biologist during construction activities shall be required if the biologist determines a particular activity has the potential to adversely affect the nest, particularly if the buffer has been reduced below 0.25 mile. If construction activities cause nesting birds to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-14: CONDUCT BURROWING OWL SURVEYS AND DEVELOP AN EXCLUSION AND RELOCATION PLAN

Before any ground disturbing activities within 500 feet of potential burrowing owl habitat (i.e., annual grassland containing ground squirrels or debris piles, banks of streams/creeks) the project proponent shall hire a qualified biologist to conduct surveys in accordance with Appendix D of CDFW's Staff Report on Burrowing Owl Mitigation (2012). Survey methods shall include the following:

- An initial survey for burrows, owls, or their sign shall be conducted by walking transects through the entire project site and surrounding areas of potential habitat within 500 feet of the project footprint.
- Survey transects shall be spaced to allow 100 percent visual coverage of the ground surface. The distance between transect center lines should be no more than 70 feet and should be reduced as needed to account for differences in terrain, vegetation density, and ground surface visibility. To efficiently survey projects larger than 100 acres, it is recommended that two or more surveyors conduct concurrent surveys. Surveyors should maintain a minimum distance of 160 feet from any owls or occupied burrows. It is important to minimize disturbance near occupied burrows during all seasons.
- If no occupied burrows or burrowing owls are found in the survey area, a letter report documenting survey methods and findings shall be submitted to the County Environmental Coordinator and no further mitigation is necessary.
- If occupied burrows, burrowing owls, or their sign are found, then a complete burrowing owl survey is required. This consists of a minimum of four site visits conducted on four separate days, which must also be consistent with the Survey Method, Weather Conditions, and Time of Day sections of Appendix D of CDFW's Staff Report on Burrowing Owl Mitigation (2012). Submit a survey report to the County Environmental Coordinator which is consistent with the Survey Report section of Appendix D of CDFW's Staff Report.
- If an active burrow is identified near a proposed work area and work cannot be conducted outside of the nesting season (February 1 to August 31), a qualified biologist will establish a no-activity zone that extends 150 to 1,500 feet around the burrow, depending on nesting stage and level of disturbance. If burrowing owls are present at the site during the non-breeding season (September 1 through January 31), a qualified biologist will establish a no-activity zone that extends a minimum of 150 feet around the burrow.
- If the designated no-activity zone for breeding or non-breeding burrowing owls cannot be established because an active burrow is located within the project

work area, a wildlife biologist experienced in burrowing owl behavior will evaluate site-specific conditions and, in coordination with CDFW, recommend a smaller buffer (if possible) that still minimizes the potential to disturb the owls (and is deemed to still allow reproductive success during the breeding season). The site-specific buffer will consider the type and extent of the proposed activity occurring near the occupied burrow, the duration and timing of the activity, the sensitivity and habituation of the owls, and the dissimilarity of the proposed activity to background activities. Additional measures may be identified by the designated biologist or CDFW including regular monitoring of the owls by a qualified biologist, modified construction activity schedule in proximity to the owls, or establishment of a barrier between construction and the occupied burrow.

- If burrowing owls are present within the construction area and cannot be avoided during the non-breeding season (generally September 1 through January 31), owls will be relocated to suitable habitat outside of the project site using passive or active methodologies developed in consultation with CDFW and may include active relocation to the Mather Preserve if approved by CDFW and the County Environmental Coordinator. No burrowing owls shall be excluded from occupied burrows until a burrowing owl exclusion and relocation plan is developed by the project proponent and approved by the County and CDFW. Typically, owls maintain multiple burrows and refuge areas within their foraging area during the non-breeding season.
- Passive or active relocation also may be used during the breeding season (February 1 through August 30) if a qualified biologist, coordinating with CDFW, determines through site surveillance that the burrow is no longer occupied by burrowing owl adults, young, or eggs. Once the fledglings are capable of independent survival, the owls shall be relocated to suitable habitat outside the project site in accordance with a burrowing owl exclusion and relocation plan developed in consultation with CDFW, and the burrow shall be destroyed to prevent owls from reoccupying it. No burrowing owls shall be excluded from occupied burrows until a burrowing owl exclusion and relocation plan is approved by CDFW and the County Environmental Coordinator. Passive relocation shall be accomplished by installing one-way doors (e.g., modified dryer vents or other CDFW-approved method). The one-way doors shall be left in place for a minimum of 3 days and will be monitored daily to verify that the one-way door stays in place and that at the end of the 3 days, the owls have left the burrow. The burrow shall be excavated using hand tools, and a section of flexible plastic pipe (at least 3 inches in diameter) will be inserted into the burrow tunnel to maintain an escape route for any animals that may be inside the burrow.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-15: COMPENSATE FOR LOSS OF OCCUPIED BURROWING OWL HABITAT

If active burrowing owl burrows, or burrow surrogates (e.g., debris piles, culvert pipes) are found on the site and are destroyed by project implementation, the project proponent shall mitigate the loss of occupied habitat in accordance with guidance provided in the CDFW 2012 Staff Report or the most recent CDFW protocols, which states that permanent impacts to nesting, occupied and satellite burrows, and burrowing owl habitat shall be mitigated such that habitat acreage, number of burrows, and burrowing owls impacted are replaced through permanent conservation of comparable or better habitat with similar vegetation communities and burrowing mammals (e.g., ground squirrels) present to provide for nesting, foraging, wintering, and dispersal. The project proponent shall retain a qualified biologist to develop a burrowing owl mitigation and management plan that incorporates the following goals and standards:

- Mitigation lands shall be selected based on comparison of the habitat lost to the compensatory habitat, including type and structure of habitat, disturbance levels, potential for conflicts with humans, pets, and other wildlife, density of burrowing owls, and relative importance of the habitat to the species range wide. The Mather Preserve may be used as mitigation habitat if it is demonstrated to support comparable habitat values and functions for burrowing owl as the habitat lost as a result of the project.
- If feasible, mitigation lands shall be provided adjacent or proximate to the site so that displaced owls can relocate with reduced risk of take. Feasibility of providing mitigation adjacent or proximate to the project site depends on availability of sufficient suitable habitat to support displaced owls that may be preserved in perpetuity. The Mather Preserve may be used as mitigation habitat if it is demonstrated to support comparable habitat values and functions for burrowing owl as the habitat lost as a result of the project and is sufficient to support owls displaced from the project site.
- If suitable habitat is not available in the Mather Preserve, or is not sufficient to fully compensate for the loss of habitat from the project site, additional mitigation may be accomplished through purchase of mitigation credits at a CDFW-approved mitigation bank, if available. If mitigation credits are not available from an approved bank, alternative mitigation sites and acreage shall be determined in consultation with CDFW.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-16: CONDUCT PRECONSTRUCTION SURVEYS FOR NESTING BIRDS

- Implement Mitigation Measure BR-4: Worker Environmental Awareness Program
- Vegetation removal shall be carried out during the non-breeding season for birds and raptors (February 1 to August 31) to the extent feasible.
- Before initiating any ground disturbing during the nesting season for these species in the Sacramento area (generally February 1 to August 31), the project applicant shall retain a qualified wildlife biologist with knowledge of the relevant species to conduct nesting surveys within 14 days before the start of construction or vegetation removal.
- Surveys shall include a search of all trees, shrubs, wetlands, and grassland vegetation that provide suitable nesting habitat in the construction area and within 500 feet of the construction area.
- If an active nest is found in the survey area, a buffer shall be established around the nest site to avoid disturbance or destruction of the nest until the end of the breeding season (August 31) or until after a qualified wildlife biologist determines that the young have fledged and moved out of the project site (this date varies by species). The extent of these buffers shall be determined by the biologist and shall depend on the bird species, level of construction disturbance, line-of-sight between the nest and the disturbance, ambient levels of noise and other disturbances, and other topographical or artificial barriers. Suitable buffer distances may vary between species. No project activity shall commence within the buffer areas until a qualified biologist has determined, in coordination with CDFW, the young have fledged, the nest is no longer active, or reducing the buffer would not result in nest abandonment.
- Monitoring of active nests by a qualified biologist during construction activities shall be required if the biologist determines a particular activity has the potential to adversely affect the nest. If construction activities cause the nesting bird to vocalize, make defensive flights at intruders, get up from a brooding position, or fly off the nest, then the no-disturbance buffer shall be increased until the agitated behavior ceases.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the

Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-17: PROTECT ACTIVE AMERICAN BADGER DEN SITES

- Implement Mitigation Measure BR-4: Worker Environmental Awareness Program
- Before construction activities within suitable habitat for American badger, a qualified biologist shall conduct surveys to identify any American badger burrows/dens. These surveys shall be conducted not more than 15 days before the start of construction. If occupied burrows are not found, further mitigation will be not required. If occupied burrows are found, CDFW shall be notified and impacts to active badger dens shall be avoided by establishing exclusion zones around all active badger dens, within which construction-related activities shall be prohibited until denning activities are complete or the den is abandoned. A qualified biologist shall monitor each den once per week to track the status of the den and to determine when a den area has been cleared for construction.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-18: LOSS OF WETLANDS AND WATERS

Implement BR-1 through BR-5

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-19: COMPENSATE FOR LOSS OF WETLANDS/WATERS NOT COMPENSATED UNDER BR-2

All necessary permits under Section 1602 of the California Fish and Game Code (Lake and Streambed Alteration Agreement) and Sections 401 and 404 of the CWA or the state's Porter-Cologne Act shall be obtained and all permit conditions implemented as will the conditions and requirements of all other state and federal permits obtained for the project.

The project applicant of any project that would result in removal of drainage ditches shall compensate for the permanent fill of waters of the United States and waters of the state. The minimum compensation ratio to achieve no net loss of functions and values for will be 1:1 (1 acre of wetland credit for every 1 acre of permanent impact). Compensation may be achieved through one or a combination of the following options:

- Purchase credits for created riparian stream channel at a locally approved mitigation bank. Written evidence will be provided to the resource agencies that compensation has been established through the purchase of mitigation credits.
- Compensate out-of-kind for loss of drainage ditch by implementing other compensatory mitigation for wetlands, as described in Mitigation Measure BR-2. The acreage required for compensation for loss of drainage ditches will be added to the acreage for mitigation of loss of vernal pool invertebrate habitat.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-20: INTERFERE WITH THE MOVEMENT OF ANY NATIVE RESIDENT OR MIGRATORY FISH OR WILDLIFE SPECIES OR IMPEDED USE OF WILDLIFE NURSERY SITES

Implement BR-16

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-21: COMPENSATE FOR NATIVE TREE REMOVAL

Before initiating development projects, project applicants shall submit an arborist report for the project impact areas when appropriate habitat exists. The report shall include the species, diameter, dripline, and health of all trees 6 inches in diameter at breast height or larger and shall be prepared by an ISA certified arborist. The report shall include an exhibit that shows the trees and their driplines in proximity to the project improvements. The report shall identify any tree proposed for removal and shall quantify any encroachment from project equipment or facilities within driplines of native trees.

A) With the exception of the native trees removed and compensated for through Part B below, all healthy native trees that are 6 inches DBH or larger on the project site, all portions of adjacent off-site healthy native trees that are 6 inches DBH or larger which have driplines that extend onto the project site, and all off-site healthy native trees that are 6 inches DBH or larger which may be impacted by utility installation and/or improvements associated with this project, shall be preserved and protected as follows:

1. A circle with a radius measurement from the trunk of the tree to the tip of its longest limb shall constitute the dripline protection area of the tree. Limbs must not be cut back to change the dripline. The area beneath the dripline is a critical portion of the root zone and defines the minimum protected area of the tree. Removing limbs which make up the dripline does not change the protected area.

2. Chain link fencing or a similar protective barrier shall be installed one foot outside the driplines of the native trees before initiating project construction, to avoid damage to the trees and their root systems.

3. Any removal of paving or structures (i.e. demolition) that occurs within the dripline of a protected native tree shall be done under the direct supervision of a certified arborist. To the maximum extent feasible, demolition work within the dripline protection area of the native tree shall be performed by hand. If the certified arborist determines that it is not feasible to perform some portion(s) of this work by hand, then the smallest/lightest weight equipment that will adequately perform the demolition work shall be used.

4. No signs, ropes, cables (except cables which may be installed by a certified arborist to provide limb support) or any other items shall be attached to the native trees.

5. No vehicles, construction equipment, mobile home/office, supplies, materials or facilities shall be driven, parked, stockpiled or located within the dripline of the native trees.

Any soil disturbance (scraping, grading, trenching, and excavation) is to be avoided within the dripline of the native trees. Where this is necessary, an ISA Certified

Arborist will provide specifications for this work, including methods for root pruning, backfill specifications and irrigation management guidelines.

7. Before grading, excavation or trenching within five feet outside the driplines of protected native trees, root pruning shall be required at the limits of grading or excavation to cut roots cleanly to a depth of the excavation or 36 inches (whichever is less). Roots shall be cut by manually digging a trench and cutting exposed roots with a saw, vibrating knife, rock saw, narrow trencher with sharp blades or other approved root-pruning equipment under the supervision of an ISA Certified Arborist.

8. All underground utilities and drain or irrigation lines shall be routed outside the driplines of native trees. If lines must encroach upon the dripline, they should be tunneled or bored under the tree under the supervision of a certified arborist.

9. Any herbicides placed under paving materials must be safe for use around trees and labeled for that use. Any pesticides used on site must be tree-safe and not easily transported by water.

10. Drainage patterns on the site shall not be modified so that water collects or stands within, or is diverted across, the dripline of the native tree.

11. No sprinkler or irrigation system shall be installed in such a manner that it sprays water within the dripline of the native tree.

12. Tree pruning required for clearance during construction must be performed by an ISA Certified Arborist or Tree Worker.

13. Landscaping beneath the native tree may include non-plant materials such as boulders, decorative rock, wood chips, organic mulch, non-compacted decomposed granite, etc. Landscape materials shall be kept two (2) feet away from the base of the trunk. The only plant species which shall be planted within the dripline of the native tree are those which are tolerant of the natural semi-arid environs of the trees. Limited drip irrigation approximately twice per summer is recommended for the understory plants.

B) To the maximum extent feasible, all onsite healthy native trees shall be protected and preserved. Any substantial (>20 percent) encroachment and/or removal of native trees shall be compensated by planting native trees equivalent to the DBH inches lost, based on the ratios listed below, at locations that are authorized by the Environmental Coordinator. On-site preservation of native trees that are less than 6 inches (<6 inches) DBH, may also be used to meet this compensation requirement. Encroachment of over 20 percent within the dripline radius of native trees will require compensatory mitigation based on the percentage of encroachment multiplied by the DBH. Encroachment over 50 percent will require compensation for the entire tree.

Equivalent compensation based on the following ratio is required:

- one preserved native tree < 6 inches DBH on-site = 1 inch DBH (subject to the approval of the Environmental Coordinator)
- one D-pot seedling (40 cubic inches or larger) = 1 inch DBH
- one 15-gallon tree = 1 inch DBH
- one 24-inch box tree = 2 inches DBH
- one 36-inch box tree = 3 inches DBH

Replacement tree planting shall be completed before the issuance of building permits or a bond shall be posted by the applicant to provide funding for purchase, planting, irrigation, and 3-year maintenance period, should the applicant default on replacement tree mitigation. The bond shall be in an amount equal to the prevailing rate of the County Tree Preservation Fund.

Before the approval of Improvement Plans or building permits, a Replacement Native Tree Planting Plan shall be prepared by a certified arborist or licensed landscape architect and shall be submitted to the Environmental Coordinator for approval. The Replacement Native Tree Planting Plan(s) shall include the following minimum elements:

1. Species, size and locations of all replacement plantings and < 6-inch DBH trees to be preserved;

2. Method of irrigation;

3. The Sacramento County Standard Tree Planting Detail L-1, including the 10-foot deep boring hole to provide for adequate drainage;

4. Planting, irrigation, and maintenance schedules;

5. Identification of the maintenance entity and a written agreement with that entity to provide care and irrigation of the trees for a 3-year establishment period, and to replace any of the replacement oak trees which do not survive during that period.

6. Designation of 20-foot root zone radius and landscaping to occur within the radius of oak trees < 6-inches DBH to be preserved on-site.

No replacement tree shall be planted within 15 feet of the driplines of existing native trees or landmark size trees that are retained on-site, or within 15 feet of a building foundation or swimming pool excavation. The minimum spacing for replacement native trees shall be 20 feet on-center. Examples of acceptable planting locations are publicly owned lands, common areas, and landscaped frontages (with adequate spacing). Generally unacceptable locations are utility easements (PUE, sewer, storm drains), under overhead utility lines, private yards of single family lots (including front yards), and roadway medians.

Native trees <6 inches DBH to be retained on-site shall have at least a 20-foot radius suitable root zone. The suitable root zone shall not have impermeable surfaces, turf/lawn, dense plantings, soil compaction, drainage conditions that create ponding, utility easements, or other overstory tree(s) within 20 feet of the tree to be preserved. Trees to be retained shall be determined to be healthy and structurally sound for future growth, by an ISA Certified Arborist subject to the approval of the Environmental Coordinator.

If native tree replacement plantings are demonstrated to the satisfaction of the Environmental Coordinator to be infeasible for any or all trees removed, then compensation shall be through payment into the County Tree Preservation Fund. Payment shall be made at a rate of $325.00 per DBH inch removed but not otherwise compensated, or at the prevailing rate at the time payment into the fund is made.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-22: REPLACE NONNATIVE TREE CANOPY

The removal of nonnative tree canopy shall be mitigated for with the creation of new tree canopy equivalent to the acreage of non-native tree canopy removed. New tree canopy acreage shall be calculated using the Sacramento County Department of Transportation 15-year shade cover values for tree species. Preference is given to on-site mitigation, but if this is infeasible, then funding shall be contributed to the Sacramento Tree Foundation's Greenprint program in an amount proportional to the tree canopy lost (as determined by the 15-year shade cover calculations for the tree species to be planted through the funding, with the cost to be determined by the Sacramento County Tree Foundation).

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE BR-23: BAT ROOST AND COLONY IMPACT MINIMIZATION

The Applicant shall implement the following measures to minimize bat mortality due to roost disturbance or destruction.

- If suitable roosting habitat for special-status bats will be affected by Project construction (e.g., removal of trees or buildings, modification of bridges/box culverts), a qualified wildlife biologist will conduct surveys for special-status bats during the appropriate time of year to maximize detectability to determine if bat species are roosting near the work area no less than 7 days and no more than 14 days before beginning vegetation removal, ground disturbance, and/or construction. Survey methodology may include visual surveys of bats (e.g., observation of bats during foraging period), inspection for suitable habitat, bat sign (e.g., guano), or use of ultrasonic detectors (e.g., Anabat, etc.). Visual surveys will include trees within 0.25 mile of Project construction activities if the potential roost could be disturbed by construction activity. If the potential roost is separated from the construction site by topographic, vegetation, structural, or other visual barriers or by areas of routine human disturbances that are greater than the project construction disturbances, surveys of those potential roosts will not be necessary. The type of survey will depend on the condition of the potential roosting habitat. If no bat roosts are found, then no further study is required.
- If evidence of bat use is observed, the number and species of bats using the roost will be determined. Bat detectors may be used to supplement survey efforts.
- If roosts are determined to be present and must be removed, the bats will be excluded from the roosting site before the facility is removed. A mitigation program addressing compensation, exclusion methods, and roost removal procedures will be developed and submitted to CDFW for approval, before implementation. Exclusion methods may include use of one-way doors at roost entrances (bats may leave, but not reenter), or sealing roost entrances when the site can be confirmed to contain no bats. Exclusion efforts may be restricted during periods of sensitive activity (e.g., during hibernation or while females in maternity colonies are nursing young). Loss of roosting habitat may be compensated with permanent, elevated bat houses or condos installed outside of, but near the construction area. Placement and height shall be determined based on species evicted or as determined by a qualified biologist in consultation with CDFW. Bat houses will be multi-chambered and be purchased or constructed in accordance with CDFW standards. The number of bat houses required will be dependent upon the size and number of colonies found, but at

least one bat house will be installed for each pair of bats (if occurring individually), or of sufficient number to accommodate each colony of bats to be relocated.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

MITIGATION MEASURE BR-24: IMPLEMENT APPLICABLE SSHCP AVOIDANCE AND MINIMIZATION MEASURES.

The Project Applicant shall implement SSHCP AMMs EDGE-8 (Outdoor Lighting), EDGE-10 (Prevent Invasive Species Spread), and BMP-2 (Erosion Control). If equivalent or more effect mitigation is required as part of the Project's State and federal permits, those mitigation measures may be implemented subject to the final determination of the Sacramento County Environmental Coordinator.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE CC-1: IMPLEMENT MITIGATION MEASURE AQ-2

Emissions estimates account for all incorporated design measures (as indicated in the Air Quality Mitigation Plan [AQMP] in Appendix AQ-2 of this EIR). These include traffic calming measures and a neighborhood electric vehicle (NEV) network. The measures of the AQMP would reduce GHG emissions through reduced vehicle idling and fuel consumption, and switching to cleaner fuels (i.e., electricity).

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE CC-2: REDUCE GREENHOUSE GAS EMISSIONS ON-SITE

The project applicant shall incorporate the following mitigation measures into the project to reduce operational emissions of GHGs to the extent feasible.

TRANSPORTATION

Although the project has not committed to implementing Tier 1 or 2 of the California Green Building Standards, it is considered feasible mitigation and would involve the following design features for the project:

- For each single-family residential unit, install a listed raceway, associated overcurrent protective device and the balance of a dedicated 208/240-volt branch circuit at 40 amperes (amp) minimum, to pre-wire the home for electric vehicle charging. The raceway shall not be less than trade size 1 (nominal 1-inch inside diameter). The raceway shall originate at the main service or unit subpanel and shall terminate into a listed cabinet, box, or other enclosure near the proposed location of an Electric Vehicle (EV) charger. Raceways are required to be continuous at enclosed, inaccessible, or concealed areas and spaces. The service panel and/or subpanel shall provide capacity for a 40-amp minimum dedicated branch circuit. All electrical circuit components and Electric Vehicle Service Equipment (EVSE), including a receptacle or box with a blank cover, related to Section A4.106.8 of the California Green Building Standards Code shall be installed in accordance with the California Electrical Code.
- Multifamily residential buildings shall design at least 10 percent of parking spaces to include EVSE, or a minimum of two spaces to be installed with EVSE for buildings with 2-10 parking spaces. EVSE includes EV charging equipment for each required space connected to a 208/240-volt, 40-amp panel with conduit, wiring, receptacle, and overprotection devices.
- Nonresidential buildings shall design at least 10 percent of parking spaces to include EVSE, or a minimum of two spaces to be installed with EVSE for buildings with 2-10 parking spaces. EVSE includes EV charging equipment for each required space connected to a 208/240-volt, 40-amp panel with conduit, wiring, receptacle, and overprotection devices.
- Nonresidential land uses with 20 or more on-site parking spaces shall dedicate preferential parking spaces to vehicles with more than one occupant and zero emission vehicles (ZEVs) (including battery electric vehicles and hydrogen fuel cell vehicles). The number of dedicated spaces should be no less than two spaces or 5 percent of the total parking spaces on the individual project site, whichever is greater. These dedicated spaces shall be in preferential locations

such as near the main entrances to the buildings served by the parking lot and/or under the shade of structures or trees. These spaces shall be clearly marked with signs and pavement markings. This measure shall not be implemented in a way that prevents compliance with requirements in the California Vehicle Code regarding parking spaces for disabled persons or disabled veterans.

- Research the feasibility of a monetary incentive program for future residents to purchase electric vehicles.

BUILDING ENERGY

Although the project has not committed to implementing Tier 1 or 2 of the California Green Building Standards, it is considered feasible mitigation and would involve the following design features for the project:

- All project buildings shall be designed to include Cool Roofs in accordance with the requirements set forth in Tier 2 of the California Green Building Energy Code, Sections A4.106.5 and A5.106.11.2.
- All project buildings shall comply with requirements for water efficiency and conservation as described in the California Green Building Standards Code, Divisions 4.3 and 5.3.
- Multiple electric receptacles shall be included on the exterior of all nonresidential buildings and accessible for purposes of charging or powering electric landscaping equipment and providing an alternative to using fossil fuel-powered generators. The electrical receptacle shall have an electric potential of 100 volts. There should be a minimum of one electrical receptacle on each side of the building and one receptacle every 100 linear feet around the perimeter of the building.
- Ensure that all appliances and fixtures installed in buildings developed under the project are Energy Star®-certified if an Energy Star®-certified model of the appliance is available. Types of Energy Star®-certified appliances include boilers, ceiling fans, central and room air conditioners, clothes washers, compact fluorescent light bulbs, computer monitors, copiers, consumer electronics, dehumidifiers, dishwashers, external power adapters, furnaces, geothermal heat pumps, programmable thermostats, refrigerators and freezers, residential light fixtures, room air cleaners, transformers, televisions, vending machines, ventilating fans, and windows (EPA 2018). If EPA's Energy Star® program is discontinued and not replaced with a comparable certification program before appliances and fixtures are selected, then similar measures which exceed the most current California Green Building Standards Code may be used.

- All residential appliances, including all space and water heating and cooking appliances, shall or electric-powered. Use of natural gas for heating or cooking in residences shall be prohibited.
- Install high efficiency lighting (i.e., light emitting diodes) in all streetlights, security lighting, and all other exterior lighting applications.

WASTE GENERATION

- Create a local composting program for residents to achieve the statewide 75-percent waste diversion target.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE CC-3: PURCHASE CARBON OFFSETS

In addition to Mitigation Measures CC-1 and CC-2, the project developer shall offset the remaining GHG emissions that exceed the transportation mass emission threshold of 301 $MTCO_2e$/year for the lifetime of the project (i.e., 25 years) (SMAQMD 2018) by funding activities that directly reduce or sequester GHG emissions or, if necessary, obtaining carbon credits. This mitigation measure is consistent with guidance recommended by SMAQMD and CARB (SMAQMD 2018:6-12 and CARB 2017:152). This measure is also consistent with the State CEQA Guidelines, which recommend several options for mitigating GHG emissions. State CEQA Guidelines Section 15126.4(C)(3) states that measures to mitigate the significant effect of GHG emissions may include "off-site measures, including offsets that are not otherwise required…"

Mitigation Measure CC-3 requires the project developer to implement an off-site GHG emissions reduction program or to pay GHG offset fees to compensate for the project's transportation-related emissions in excess of 301 $MTCO_2e$/year. Based on the results shown in Table CC-12, the total GHG emissions that would need to be offset by the project would be 7,519 $MTCO_2e$.

SMAQMD and CARB recommend that lead agencies prioritize direct investments in GHG reductions near the project site to provide potential local air quality and economic co-benefits. For example, direct investment in a local building retrofit program can pay for cool roofs, solar panels, solar water heaters, smart meters, energy-efficient lighting, energy-efficient windows, insulation, and water conservation measures for existing buildings within the geographic area of the project. Other examples of local direct investments include financing installation of regional electric vehicle charging stations, paying for electrification of public school buses, and investing in local urban forests. However, it is critical that any such investments in actions to reduce GHG emissions are real and quantifiable, as determined by the County, SMAQMD, or a consultant selected by the County.

Where development of a local offset is not feasible, the County shall allow project proponents to mitigate GHG emissions through the purchase of local or California-only carbon credits issued through a CARB-accredited offset project registry. Carbon offsets purchased through these programs meet the criteria of additionally and represent emissions reduction that would not otherwise occur, satisfying the CEQA mitigation requirements. Establishment of offsets or purchases of carbon credits to offset operation-generated GHG emissions should be made before recordation of small lot final maps and proof of purchase shall be provided by the applicant to the County.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE CR-1: HISTORIC RESOURCES

For any unexpected historic or cultural resources discovered during project construction, work shall be halted until a qualified archaeologist evaluates the resource encountered.

1. In the event of an inadvertent discovery of historic or cultural resources, all work must halt within a 200-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained at the Applicant's expense to evaluate the significance of the find. If it is determined due to the types of deposits discovered that a Native American monitor is required, the Guidelines for Monitors/Consultants of Native American Cultural, Religious, and Burial Sites as established by the Native American Heritage Commission shall be followed, and the monitor shall be retained at the Applicant's expense.

    a. Work cannot continue within the 200-foot radius of the discovery site until the archaeologist and/or tribal monitor conducts sufficient research and data collection to determine that the resource is either 1) not cultural in origin; or 2) not potentially eligible for listing on the National Register of Historic Places or California Register of Historical Resources.

    b. If a potentially-eligible resource is encountered, then the archaeologist and/or tribal monitor, Office of Planning and Environmental Review staff, and project proponent shall arrange for either 1) total avoidance of the resource, if possible; or 2) test excavations or total data recovery as mitigation. The determination shall be formally documented in writing and submitted to the County Environmental Coordinator as verification that the provisions of CEQA for managing unanticipated discoveries have been met.

2. Pursuant to Sections 5097.97 and 5097.98 of the State Public Resources Code, and Section 7050.5 of the State Health and Safety Code, if a human bone or bone of unknown origin is found during construction, all work is to stop and the County Coroner and Office of Planning and Environmental Review (PER) shall be immediately notified. If the remains are determined to be Native American, the coroner shall notify the Native American Heritage Commission within 24 hours, and the Native American Heritage Commission shall identify the person or persons it believes to be the most likely descendent from the deceased Native American. The most likely descendent may make recommendations to the landowner or the person responsible for the excavation work, for means of treating or disposition of, with appropriate dignity, the human remains and any associated grave goods.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE: ARCHAEOLOGICAL RESOURCES

Implement Mitigation Measure CR-1.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE: HUMAN REMAINS

Implement Mitigation Measure CR-1.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE CR-2: TRIBAL CULTURAL RESOURCES

If the lead agency determines that a project may cause a substantial adverse change to a tribal cultural resource, and measures are not otherwise identified in the consultation process provided in Section 21080.3.2 of the Public Resources Code, one of the following measures would be implemented to avoid and/or minimize the impact to tribal cultural resources:

1. Avoidance and preservation of the resources in place, including, but not limited to, planning and construction to avoid the resources and protect the cultural and natural context, or planning greenspace, parks or other open space, to incorporate the resources with culturally appropriate protection and management criteria.
2. Treating the resource with culturally appropriate dignity taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:
    a. Protecting the cultural character and integrity of the resource.
    b. Protecting the traditional use of the resource.
    c. Protecting the confidentiality of the resource.
3. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.
4. Protecting the resource.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE GS-1: PALEONTOLOGICAL RESOURCES

In the event that paleontological resources are unearthed during ground-disturbing activities during site preparation and/or construction, ground-disturbing work shall immediately cease in the vicinity of the discovery. The project applicant shall immediately notify the Environmental Coordinator of the discovery and contact the Geology Department of the University of California at Davis or other qualified institution. A qualified paleontologist or paleoresources consultant shall prepare a mitigation program for the discovery and monitor the area of the discovery and the vicinity and identify, curate, and store the specimen as appropriate. All phases of mitigation shall be supervised by a professional paleontologist who maintains the necessary paleontological collecting permits and repository agreements.

If any additional paleontological remains are encountered during the project, the paleontologist has the authority to stop work in the immediate vicinity of the find to evaluate the find, record, and remove the find if significant. The paleontologist shall also prepare a report of the find(s) and their significance after operations are complete.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE HM-1: WORKER HEALTH AND SAFETY

Each contractor whose employees may be potentially exposed to contaminants known to be present in site soil, soil gas, or groundwater shall develop and implement their own contractor-specific and site-specific Health and Safety Plan (HASP). The HASP shall establish the minimum requirements, policies, and procedures adequate to protect site workers, the public, and the environment from identified site environmental hazards. The HASP shall be prepared in accordance with 29 CFR 1910.120 OSHA, Hazardous Waste Operations and Emergency Response (HAZWOPER), and California Code of Regulations, Title 8, Section 5192.

Consistent with the project's finalized Hazardous Materials Contingency Plan, a template HASP shall be provided to each contractor. The template HASP establishes guidelines and general requirements that shall be adopted by contractors for all workers to follow and attempts to identify all potential hazards at the Plan Area. Each contractor shall be provided procedures to follow in the event previously unidentified environmental issues, such as suspected contamination or an unknown tank are encountered during site development activities. The template HASP serves as a general template for all contractors performing intrusive work which may expose workers to impacted soils, soil vapor, or groundwater within the Plan Area during construction activities.

Each contractor who will be encountering groundwater or potentially contaminated soil or structures shall be required to prepare their own HASP that shall comply with 29 CFR 1910.120 OSHA HAZWOPER and the contractor's own health and safety SOPs. Contractors are responsible for communicating the hazards associated with work at the Plan Area and providing the minimum health and safety requirements as outlined in the contractor HASP. Each contractor's HASP shall include an independent evaluation of the Plan Area's hazards and mitigative actions before the commencement of construction activities.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE HM-2: SOIL SAMPLING BEFORE GROUND DISTURBING ACTIVITIES

Before construction activities begin within the Mather South Plan Area, targeted surface soil sampling shall be conducted to evaluate concentrations of chemicals of concern in surface soil. Specific activities to be conducted include the following:

- Shallow soil (1-3 feet) shall be excavated and tested for contamination associated with the former diesel USTs at Building 18015 following demolition of the building, as well as at the two proposed school sites before any new building construction. If any contamination is found, the soil shall be removed and disposed of at a permitted hazardous waste disposal facility. Further evaluation of potential vapor intrusion concerns shall be conducted for these areas subsequent to the additional soil remediation and before residential land use.
- Excavation of test pits at the former exercise area (ENGEO AOC) to delineate the extent of the buried debris before construction or excavation associated with the Mather South Project shall be conducted. In advance of future site development, coordination with the USAF to develop a contingency plan for managing undocumented debris and/or contamination that may potentially be uncovered during grading operations shall occur. No development within 50 feet of ENGEO AOC shall occur until any identified contamination has been remediated.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE HM-3: CONTAMINATED SOIL CONTINGENCY PLAN

Before construction, the applicant shall submit a Contaminated Soil Contingency Plan to the County for review and approval. The plan shall include practices that are consistent with the California Title 8 and Occupational Safety and Health Administration regulations and shall outline steps that would be implemented if contaminated soils are encountered. The objective of the plan shall be to minimize risk to the public and to the environment resulting from exposure to and disturbance of contaminated soils. At a minimum, the plan shall include procedures for the following steps:

- identifying potentially impacted soil,
- establishing a no-work zone for potentially contaminated areas,
- assessing potentially impacted soil,
- notifying appropriate agencies,
- cleanup procedures,
- impacted soil storage,
- verification sampling, and
- impacted soil characterization and disposal.

During construction, appropriately trained personnel, under the supervision of a California licensed registered geologist or professional engineer, shall be present to monitor soil conditions during all earthmoving activities at specific areas of risk, which include: the former diesel USTs at Building 18015, the former exercise area (ENGEO AOC), OT-69/XE-404 (detonation and burn area), and OT-86 (small arms firing range). If potentially contaminated soils are encountered during construction, the applicant shall implement the Contaminated Soil Contingency Plan to assess the soils and to determine appropriate procedures based on the nature of the contamination, which may include avoidance or collection and analysis to determine appropriate disposal or treatment options.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE HM-4: HAZARDOUS MATERIALS NOTIFICATION

Within the Mather South Plan Area, there is the potential for MEC or munitions debris to be encountered on the surface or subsurface of the investigation area, particularly during ground-disturbing activities at greater depths. The Sacramento County Office of Economic Development shall notify future landowners of the following: the former military use of the Mather South Plan Area, the completed munitions response actions at the site, and the appropriate steps to take in the event that suspected munitions-related items are discovered. This information shall be provided to future landowners through environmental disclosure reports before final sale Specific actions include the following:

- The owner shall be notified of the existence of MRS XE-404 and be provided with a description of the site, the investigations and munitions responses completed at the site and their findings, and the process used to determine that the degree of munitions removal is adequately protective.
- The owner shall be further notified that the potential exists for ordnance and ordnance-related materials to remain within the site because detection and removal methods are not 100 percent effective.
- The owner shall be notified that all future ground-disturbing activities shall be exercised with caution.
- The owner shall be advised that in the event that any suspected military munitions item, or a fragment thereof, is found at the site, the item shall not be touched or disturbed further. The local police or fire department and USAF should be contacted immediately to report the finding and engage in the removal of the debris from the site.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE: HAZARDOUS WASTE WITHIN ONE-QUARTER MILE OF AN EXISTING OR PROPOSED SCHOOL

HM1 through HM4 (refer to Impact HM-2) and Mather Field SPA Ordinance Performance Standards (refer to the Regulatory Setting) related to Hazardous Materials.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE: LISTED HAZARDOUS MATERIALS SITES

HM1 through HM4 (refer to Impact HM-2) and Mather Field SPA Ordinance Performance Standards (refer to the Regulatory Setting) related to Hazardous Materials.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE HY-1: HYDROMODIFICATION

Before Improvement Plan approval, applicants shall submit a drainage study in accordance with the requirements outlined in the "Drainage Study Requirements" document dated June 12, 2008 (or subsequent updates). The study shall describe permanent stormwater quality treatment facilities capable of treating stormwater to the satisfaction of the State Water Board for injection into the Mehrten formation in the infiltration trenches in the basins. Alternate solutions to percolations trenches shall be discussed in the study such as reuse of the collected summer nuisance flows for irrigation of public spaces, or rigorous LID measures, etc.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE HY-2: FLOODING

The Mather South Project shall mitigate its downstream impacts by either of the following options:

a. Payment of the Beach Stone Lakes Mitigation Fee (Sacramento County Water Agency Zone 11A).

b. Ensuring no net project-related increase in volume in Beach Stone Lakes by metering outflow from the Plan Area, increasing storage capacity of onsite facilities, directing drainage into downstream facilities offsite, or other regional drainage solutions as determined by the County Department of Water Resources.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE HY-3: POTENTIAL CLIMATE CHANGE EFFECTS ON THE PROJECT

At the time of submittal of backbone infrastructure plans, the project applicant shall submit a hydrologic analysis that is based upon adopted County guidance regarding a reasonably foreseeable climate change scenario. Based on the results of the hydrologic analysis and if impacts are identified, the project applicant shall implement all feasible design measures within the project's drainage system to adequately maintain pre-project flows with consideration of climate change effects. Potential improvements could include deepening the existing basin(s) within the Plan Area that would be subject to over-topping. Basin deepening would require minimal construction-related impacts including excavation and hauling of an additional increment of soil from the site. These construction-related impacts have been evaluated throughout this EIR.

Alternatively, if the County has adopted a regional solution for flooding related to climate-change, the project applicant shall contribute its fair share towards funding the construction of the regional solution.

If the County has not developed a regional solution or has not adopted guidance for evaluating hydrologic climate-related impacts, the project applicant shall prepare submit a hydrologic analysis that is based on the best available technical information at that time, in consultation with the County's Department of Water Resources and the Office of Planning and Environmental Review.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE LU-1: LAND USE CONFLICTS AND ADJACENCY ISSUES

Require implementation of Mather Field Specific Plan Ordinance Section 603-19 for all properties located within the R-22 and R-23 land use designation along the southern portion of the Plan Area prior to occupancy or sale.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE LU-2: LAND USE CONFLICTS AND ADJACENCY ISSUES

At the time of site plan approval, require the implementation of standard conditions to minimize the potential for noise and odor issues resulting from adjacency to the rendering facility including fencing or walls, screening, building orientation, double paned windows, etc.).

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE NOI-1: REDUCE SENSITIVE RECEPTOR NOISE DURING NOISE-SENSITIVE TIME PERIODS

Consistent with County Noise Control Ordinance Section 6.68.090 Exemptions, when an unforeseen or unavoidable condition occurs during a construction project and the nature of the project necessitates that work in process be continued until a specific phase is completed, the contractor or owner shall be allowed to continue work after 8 p.m. and to operate machinery and equipment necessary until completion of the specific work in progress can be brought to conclusion under conditions which will not jeopardize inspection acceptance or create undue financial hardships for the contractor or owner.

For all outdoor construction/decommissioning activity that is to take place outside of the Sacramento County construction noise exception timeframes (i.e., between 6:00 a.m. and 8:00 p.m., Monday through Friday, and between 7:00 a.m. and 8:00 p.m. on Saturdays and Sunday), the contractor shall ensure that a noise monitoring plan is prepared by a qualified acoustical engineer and approved by the project applicant. The noise monitoring plan shall, at a minimum, include the following components:

- detailed description of the proposed nighttime construction/decommissioning activities,
- list of equipment used during all nighttime construction/decommissioning activities,
- projected noise levels generated during the nighttime construction/decommissioning activities at surrounding noise-sensitive land uses,
- location of sensitive receptors in relation to the proposed nighttime construction/decommissioning activities, and
- detailed description of the location and times that noise monitors would be deployed.

Subsequently, during any nighttime construction, noise shall be monitored and documented for the nearest sensitive land use to ensure that the County's exterior noise standards for non-transportation noise sources are not exceeded. In the event that monitored noise levels exceed applicable noise standards, onsite construction activities shall cease operations immediately. Before resuming nighttime construction activities, noise-control measures shall be implemented to reduce operational noise levels to below acceptable levels.

Noise control measures could include, but are not limited to, the following:

- All equipment shall be properly maintained and equipped with noise-reduction intake and exhaust mufflers and engine shrouds, in accordance with

manufacturers' recommendations. Equipment engine shrouds shall be closed during equipment operation.

- Where available and feasible, equipment with back-up alarms shall be equipped with either audible self-adjusting backup alarms or alarms that only sound when an object is detected. Self-adjusting backup alarms shall automatically adjust to 5 dBA over the surrounding background levels. All non-self-adjusting backup alarms shall be set to the lowest setting required to be audible above the surrounding noise levels.
- To the extent that noise-generating outdoor construction activity needs to occur at night as part of a continuous construction activity, the activity shall be planned such that the portion that needs to take place closest to residential receptors takes place during less noise-sensitive daytime hours.
- Noise-reducing enclosures and techniques shall be used around stationary noise-generating equipment (e.g., concrete mixers, generators, compressors).
- Heavy-duty equipment shall be operated at the lowest operating power possible.
- Temporary noise curtains shall be installed as close as possible to the noise-generating activity such that the curtains obstruct the direct line of sight between the noise-generating construction/decommissioning activity and the nearby sensitive receptors. Temporary noise curtains shall consist of durable, flexible composite material featuring a noise barrier layer bounded to sound-absorptive material on one side. The noise barrier layer shall consist of rugged, impervious, material with a surface weight of at least one pound per square foot.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE NOI-2: DEVELOP AND IMPLEMENT A VIBRATION CONTROL PLAN

This mitigation measure would apply to construction activity involving pile-driving activities located within 100 feet of any building, to reduce the potential for structural damage, and within 550 feet of an occupied residence/building, to minimize disturbance from pile-driving activities.

A vibration control plan shall be developed by the project applicant and his/her construction contractors to be submitted to and approved by Sacramento County before issuance of any Improvement Plans or Grading Permits for the project. The plan shall consider all potential vibration-inducing activities that would occur within the distance parameters described above and include various measures, setback distances, precautions, monitoring programs, and alternative methods to traditional pile-driving activities with the potential to result in structural damage or excessive noise. The following vibration control measures (or other equally effective measures approved by the County) shall be included in the plan:

- To prevent structural damage, minimum setback requirements for different types of ground vibration-producing activities (e.g., pile driving) for the purpose of preventing damage to nearby structures shall be established based on the proposed pile-driving activities and locations, once determined. Factors to be considered include the specific nature of the vibration producing activity (e.g., type and duration of pile driving), local soil conditions, and the fragility/resiliency of the nearby structures. Established setback requirements (i.e., 100 feet) can be breached if a project-specific, site specific analysis is conducted by a qualified geotechnical engineer or ground vibration specialist that indicates that no structural damage would occur at nearby buildings or structures.
- To prevent disturbance to sensitive land uses, minimum setback requirements for different types of ground vibration producing activities (e.g., pile driving) shall be established based on the proposed pile-driving activities and locations, once determined. Established setback requirements (i.e., 550 feet) can be breached only if a project-specific, site-specific, technically adequate ground vibration study indicates that the buildings would not be exposed to ground vibration levels in excess of 72 VdB, and ground vibration measurements performed during the construction activity confirm that the buildings are not being exposed to levels in excess of 72 VdB.
- All vibration-inducing activity within the distance parameters described above shall be monitored and documented for ground vibration noise and vibration noise levels at the nearest sensitive land use and associated recorded data submitted to Sacramento County so as not to exceed the recommended FTA and Caltrans levels.

- Alternatives to traditional pile driving (e.g., sonic pile driving, jetting, cast-in-place or auger cast piles, non-displacement piles, pile cushioning, torque or hydraulic piles) shall be considered and implemented where feasible to reduce vibration levels.
- Limit pile-driving activities to the daytime hours between 6:00 a.m. and 8:00 p.m. Monday through Friday and between 8:00 a.m. and 8:00 p.m. Saturday and Sunday.
- Predrill pile holes to the maximum feasible depth to reduce the number of blows required to seat a pile.
- Operate all vibration inducing impact equipment as far away from vibration-sensitive sites as reasonably possible from nearby structures.
- Phase pile-driving and high-impact activities so as not to occur simultaneously with other construction activities, to the extent feasible. The total vibration level produced could be significantly less when each vibration source is operated at separate times.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE NOI-3: CONDUCT SITE-SPECIFIC NOISE STUDY AND IMPLEMENT RECOMMENDATIONS

To prevent future sensitive receptors from disturbance during the sensitive times of the day, project applicants of a residential land use or a structure containing residential units shall, before the issuance of building permits, provide to the County a site-specific noise study prepared by a qualified acoustical engineer addressing interior noise levels in residential units. The noise study shall consider the types of land uses being proposed in the same building or in the vicinity as the residential units in a mixed-use structure and existing noise sources adjacent to the proposed structure. The noise study shall confirm, using approved calculation methodologies, that building design and materials are sufficient to maintain exterior noise levels of 55 L_{50} and 75 L_{max} during the daytime and 50 L_{50} and 70 L_{max} during the nighttime and an interior noise level of (L_{50}) of 35 and maximum (L_{max}) of 55 dB L_{dn} /CNEL, with windows closed, in residential units given the reasonably foreseeable noise generation sources within the building, and existing noise sources adjacent to the building. If the study shows such standards would not be met with the design as proposed, the project applicants shall implement recommendations of the study that are shown to achieve the standards.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE NOI-4: REDUCE NOISE EXPOSURE TO EXISTING SENSITIVE RECEPTORS FROM PROPOSED STATIONARY NOISE SOURCES IN NON-RESIDENTIAL LAND USES

The siting of new stationary sources in non-residential land uses shall first consider providing adequate distance between the noise source and residential land uses. Siting distance recommendations for each source type are provided below.

- New loading dock or commercial delivery sources shall be located a minimum of 1,600 feet from existing residential land uses.
- New HVAC units shall be located a minimum of 500 feet from existing residential land uses.
- New mechanical generators shall be located a minimum of 640 feet from existing residential land uses.
- New overhead transmissions lines and substations shall be located a minimum of 16 feet from existing residential land uses.

If the above siting requirements cannot be achieved because of specific building locations or other site-specific constraints, the following measures shall be required for future development applications including stationary sources.

- Routine testing and preventive maintenance of emergency electrical generators shall be conducted during the less sensitive daytime hours (i.e., 6:00 a.m. to 8:00 p.m.), per the Sacramento County Noise Ordinance. All electrical generators shall be equipped with noise control (e.g., muffler) devices in accordance with manufacturers' specifications.
- External mechanical equipment, including HVAC units, associated with buildings shall incorporate features designed to reduce noise emissions below the stationary noise source criteria. These features may include, but are not limited to, locating equipment within equipment rooms or enclosures that incorporate noise reduction features, such as acoustical louvers, and exhaust and intake silencers. Equipment enclosures shall be oriented so that major openings (i.e., intake louvers, exhaust) are directed away from nearby noise-sensitive receptors. In addition, when locating HVAC units on buildings adjacent to residential land uses, HVAC units shall not be located directly adjacent to windows of residential units. HVAC locations shall be chosen to minimize noise at nearby residential land uses.
- Loading docks shall be located and designed so that noise emissions do not exceed the stationary noise source criteria established in this analysis (i.e., exterior daytime [6:00 a.m. to 8:00 p.m.] standards of 55 dB L_{eq}/70 dB L_{max} and

the exterior nighttime [8:00 p.m. to 6:00 a.m.] standards of 50 dB L_{eq} /70 dB L_{max}) at any existing sensitive receptor. At the time of conformity review application submittal for discretionary entitlement, the project applicant shall provide to the County a specialized noise study to evaluate specific design and ensure compliance with Sacramento County noise standards. Reduction of loading dock noise can be achieved by locating loading docks as far away as possible from noise sensitive land uses, constructing noise barriers between loading docks and noise-sensitive land uses, or using buildings and topographic features to provide acoustic shielding for noise-sensitive land uses. Final design, location, and orientation shall be dictated by findings in the noise study, if applicable.

- Parking lots and structures shall be located and designed so that noise emissions do not exceed the stationary noise source criteria identified in this analysis (i.e., exterior daytime [6:00 a.m. to 8:00 p.m.] standards of 55 dB L_{eq}/70 dB L_{max} and the exterior nighttime [8:00 p.m. to 6:00 a.m.] standards of 50 dB L_{eq}/ 70 dB L_{max}) at any existing sensitive receptor. At the time of conformity review application submittal for discretionary entitlement, the project applicant shall provide to the County a specialized noise study to evaluate specific design and ensure compliance with Sacramento County noise standards. Reduction of parking lot noise can be achieved by locating parking lots away from noise sensitive land uses, constructing noise barriers between parking lots/structures and noise-sensitive land uses, incorporating noise barriers into parking structure designs (e.g., providing solid walls around the top levels of parking structures), or using buildings and topographic features to provide acoustic shielding for noise-sensitive land uses. Final design, location, and orientation shall be dictated by findings in the noise study, if applicable.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE NOI-5: INSTALL OUTDOOR SOUND BARRIERS AT RESIDENTIAL LAND USES ALONG EAGLES NEST ROAD BETWEEN KIEFER BOULEVARD AND JACKSON ROAD TO REDUCE INCREASES IN TRAFFIC NOISE LEVELS

To offset the increase in noise levels from traffic volume increase along Eagles Nest Road, the project applicant shall offer the owners of residences along Eagles Nest Road the construction of a sound barrier (e.g., sound wall, berm) to reduce exterior traffic noise levels on the property. The project applicant shall offer the owners of all the residences with addresses along this roadway segment the installation of a sound barrier along the property line of their affected residential properties. The sound barriers must be constructed of solid material (e.g., wood, brick, adobe, an earthen berm, or combination thereof) and designed to ensure that the incremental increase in traffic noise is less than 5 dB L_{dn}. All barriers shall blend into the overall landscape and have an aesthetically pleasing appearance that agrees with the color and rural character of the houses and the general area, and not become the dominant visual element of the community. Relocation of the driveway at each residence may be necessary to preclude having gaps in the sound barrier. Relocation of landscaping may also be necessary to achieve an aesthetically pleasing appearance. The owners of the affected properties may choose to refuse this offer; however, the offer shall be made available to subsequent owners of the property if change of ownership occurs before project construction is complete. If an existing owner refuses these measures, a deed notice must be included with any future sale of the property to comply with California state real estate law, which requires that sellers of real property disclose “any fact materially affecting the value and desirability of the property” (California Civil Code, Section 1102.1[a]) and shall indicate that the project applicant agrees to install a sound barrier, as described above. To ensure compliance with applicable noise standards, a site-specific noise study shall be conducted by the project applicant or one of its approved consultants to determine specific noise barrier design. The project applicant shall also be responsible for removal of these sound barriers at the end of project construction.

Implementation of Mitigation Measure NOI-5 would require the project applicant to offer the owners of residences along Eagles Nest Road the construction of a sound barrier that would ensure that the incremental increase in traffic noise is less than 5 dB L_{dn}. If developed, sound barriers would reduce traffic noise level increases to below the 5-dB incremental increase threshold (See Table NOI-2) applicable to noise sensitive land uses along Eagles Nest Road. However, the offer to construct a sound barrier does not guarantee that all owners of these residential land uses would agree to construction of a sounds barrier.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the

Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE NOI-6: USE RUBBERIZED HOT-MIX ASPHALT FOR THE ROAD WIDENING PROJECT ALONG EAGLES NEST ROAD

Paving the nearby segment of roadway with rubberized hot-mix asphalt (RHMA) or equivalent surface treatment with known noise-reducing properties on top of the roadway surface. The RHMA overlay shall be designed with appropriate thickness and rubber component quantity (typically 15 percent by weight of the total blend), such that traffic noise levels are reduced by an average of 4 to 6 dB (noise levels vary depending on travel speeds, meteorological conditions, and pavement quality) as compared to noise levels generated by vehicle traffic traveling on standard asphalt. RHMA has been found to achieve this level of noise reduction in other parts of California (Sacramento County 1999). Pavement will require more frequent than normal maintenance and repair to maintain its noise attenuation effectiveness.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE CU-NOI-1: USE RUBBERIZED HOT-MIX ASPHALT FOR ALL OFFSITE ROAD WIDENING PROJECTS IMPLEMENTED AS PART OF THE MATHER SOUTH, NEWBRIDGE, JACKSON TOWNSHIP, OR WEST JACKSON PLANS.

Projects are required to pave offsite segments of roadway with rubberized hot-mix asphalt (RHMA) or equivalent surface treatment with known noise-reducing properties on top of the roadway surface. The RHMA overlay shall be designed with appropriate thickness and rubber component quantity (typically 15 percent by weight of the total blend), such that traffic noise levels are reduced by an average of 4 to 6 dB (noise levels vary depending on travel speeds, meteorological conditions, and pavement quality) as compared to noise levels generated by vehicle traffic traveling on standard asphalt. RHMA has been found to achieve this level of noise reduction in other parts of California (Sacramento County 1999). Pavement will require more frequent than normal maintenance and repair to maintain its noise attenuation effectiveness.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE TR-1: JACKSON CORRIDOR TRANSPORTATION MITIGATION STRATEGY PARTICIPATION

The project applicants shall participate in the implementation of the Jackson Corridor Transportation Mitigation Strategy as approved by the Board of Supervisors on July 23, 2019 by constructing or providing funding for its fair share of transportation improvements identified in the master list of cumulative improvements (see Appendix TR-1). The applicants shall enter into an agreement at the time of project approval to use the Dynamic Implementation Tool (Tool) to identify improvements for each phase of the project. The applicant shall also agree that required improvements will be constructed concurrent with each development increment.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE TR-2: USE OF DYNAMIC IMPLEMENTATION TOOL

The applicant at the time of project approval shall acknowledge that the project-specific list of improvements specified in Mitigation Measure TR-1 may be modified over time through the use of the Tool at each phase of project development, subject to the approval of the SacDOT.

As development proceeds, the Tool will be used to select which improvements the project would be required to fair-share fund and/or construct as described in the Jackson Corridor Transportation Mitigation Strategy adopted by the Board of Supervisors on July 23, 2019.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE: ROADWAY SEGMENT MITIGATION

The project applicant shall implement Mitigation Measures TR-1 and TR-2.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE: INTERSECTION OPERATIONS IMPACTS

The project applicant shall implement Mitigation Measures TR-1 and TR-2.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE TR-3: FREEWAY IMPROVEMENTS

To alleviate the impacts of the Jackson Corridor Developments, the Sacramento County Department of Transportation has consulted with Caltrans and they have identified the following improvements. The applicant shall provide a fair share contribution toward Caltrans' freeway facilities to the satisfaction of the Sacramento County Department of Transportation and Caltrans:

- Pay fair share toward the future conversion of HOV lanes to Toll Lanes or a Reversible Lane along U.S. Highway 50 from I-5 to Watt Avenue.

- Pay fair share toward the U.S. Highway 50 Integrated Corridor Management for the deployment of various Intelligent Transportation System improvements along U.S. Highway 50 and the City of Rancho Cordova, and regionally significant corridors in Sacramento County and the City of Folsom for incident management (non-capacity increasing) [Caltrans ID SAC25113].

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE TR-4: BICYCLE AND PEDESTRIAN SYSTEM IMPLEMENTATION

Future development within the Mather South Community Master Plan (MSCMP) shall implement the proposed bicycle and pedestrian path/trail system as described in the Mather South Community Master Plan and Design Guidelines. Before approval of any tentative map, the project applicants shall coordinate with Sacramento County to identify the necessary on- and offsite pedestrian and bicycle facilities to serve the individual project and which would ensure bicycle and pedestrian safety. These facilities shall be incorporated into subsequent projects and could include sidewalks, stop signs, standard pedestrian and school crossing warning signs, lane striping to provide a bicycle lane, bicycle parking, signs to identify pedestrian and bicycle paths, raised crosswalks, pedestrian signal heads, and all appropriate traffic calming measures as defined in the County's Neighborhood Traffic Management Program. Sidewalks would be required as part of the frontage improvements along all new roadway construction in the Project vicinity in conformance with County design standards. Circulation and access to all proposed public spaces shall include sidewalks that meet Americans with Disabilities Act Guidelines. The proposed improvements would be constructed within the footprint of the overall project area and as such the construction-related environmental impacts of these improvements have been evaluated throughout this Draft EIR.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE TR-5: TRANSIT IMPROVEMENTS

The project applicant shall coordinate with Sacramento County and Sacramento Regional Transit District (or other transit operators) to provide the additional transit facilities and services assumed in the transportation analysis, or a cost-effective equivalent level of transit facilities and services. Ultimate transit service consists of 15-minute headways during peak hours and 30-minute headways during non-peak hours on weekdays. The implementation of the transit routes and service frequency must be phased with development of the project and the ultimate service will be required at full buildout. This shall be accomplished through the annexation to County Service Area 10 or formation of a transportation services district. Such annexation or formation shall occur prior to recordation of any final small lot subdivision map for the project.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE TR-6: ROADWAY FUNCTIONALITY IMPROVEMENTS

The project applicant shall implement Mitigation Measure TR-1 and TR-2. The applicant shall consult with the County on the timing needs of proposed improvements and shall either submit their fair share payment and/or enter into an agreement to construct the assigned improvements. Improvements projected to be required based on the status of current development in the area is summarized in Table TR-27. As development in the area is approved and proceeds to construction, the timing or assignment of specific traffic improvements may change but would nonetheless be assigned to each project based on their fair-share contribution to the overall area impacts.

As shown in Table TR-27 proposed improvements include widening the deficient rural roadway segments to County standards Table TR-27 summarizes the proposed improvements of widening the deficient rural roadway segments to County standards, and the resultant functionality analysis for these roadway segments with these improvements implemented.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE CU-TR-1: CUMULATIVE ROADWAY SEGMENT OPERATIONS

The project applicant shall implement Mitigation Measures TR-1 and TR-2. The project applicant shall implement the set of improvements assigned to the project by the Tool (Mitigation Measure TR-1) as identified in Table CU-8. Detailed intersection operations calculations and the full list of study area intersection operating conditions are included in Appendix TR-1. Where feasible, the number of roadway lanes was increased to mitigate the impact. However, the roadways cannot be widened such that they exceed the maximum General Plan standards and designations of the appropriate jurisdictions. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate roadways widened as part of mitigation, which would be the responsibility of the Mather South project to implement. The shaded table cells under the "Level of Service" heading indicate those locations that would continue to operate unacceptably after mitigation. The table also includes the constraint that precluded full mitigation of the LOS impact. In several locations where the improvements allowed under the general plan would not mitigate an LOS impact, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These alternative mitigation measures would either fully mitigate the impact or substantially reduce the level of impact. The shaded table cells under the "Level of Service" heading indicate those locations that would continue exceed applicable LOS standards after mitigation. The "LOS Impact with Mitigation" column shows whether a mitigation measure successfully mitigates the impact or not. A total of 45 of the 69 roadway segments would remain significant and unavoidable with implementation of mitigation.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE CU-TR-2: CUMULATIVE INTERSECTION OPERATIONS

The project applicant shall implement Mitigation Measures TR-1 and TR-2. The project applicant shall implement the set of improvements assigned to the project by the Tool (Mitigation Measure TR-1) as identified in Table CU-11a and Table CU-12a. Table CU-11a and Table CU-12a summarize recommended mitigation and the results of the operations analysis for the traffic study area intersections with mitigation, which does not exceed the County's standard number of approach lanes, under the Cumulative Plus Jackson Corridor Projects scenario. Table CU-11b and Table CU-12b summarize recommended mitigation and the results of the operations analysis for the traffic study area intersections with ultimate mitigation, which may exceed the County's standard number of approach lanes, under the Cumulative Plus Jackson Corridor Projects scenario.

Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type have been made to mitigate impacts, which would be the responsibility of the Jackson Corridor Projects to fund. Table CU-12a and Table CU-12b also identify those intersections that would continue operate at unacceptable levels after mitigation, along with the constraint that precluded full mitigation. In locations where the LOS impact could not be mitigated by implementing the County's standard number of approach lanes, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These generally include providing additional turn lanes, carrying an additional through lane past the intersection, or designating the intersection as a High Capacity Intersection. These alternative mitigation measures would either fully mitigate the impact or substantially reduce the level of impact. Detailed intersection operations calculations and the full list of study area intersection operating conditions are included in Appendix TR-1. Additionally, detailed descriptions of the three "High Capacity Intersections" identified in **Table CU-12b** are provided in Appendix TR-1.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE CU-TR-3: CUMULATIVE FREEWAY IMPROVEMENTS

According to Caltrans' US-50 Transportation Concept Report (TCR) and Corridor System Management Plan (CSMP), all mainline freeway lanes of the 8-lane ultimate facility (4 lanes in each direction) have already been built, with the exception of the segment between Zinfandel Drive and Sunrise Boulevard (where 6 of the 8 ultimate lanes exist today). With the exception of this segment, capacity improvements to widen the freeway mainline are precluded by the ultimate configuration in the TCR/CSMP. The TCR/CSMP does conceptualize other projects that will benefit the US-50 corridor without adding additional mainline travel lanes.

- To alleviate the impacts of the Jackson Corridor Developments, the Sacramento County Department of Transportation has consulted with Caltrans and they have identified the following improvements. The applicant shall provide a fair share contribution toward Caltrans' freeway facilities to the satisfaction of the Sacramento County Department of Transportation and Caltrans:
    - Pay fair share toward the future conversion of HOV lanes to Toll Lanes or a Reversible Lane along U.S. Highway 50 from I-5 to Watt Avenue.
    - Pay fair share toward the U.S. Highway 50 Integrated Corridor Management for the deployment of various Intelligent Transportation System improvements along U.S. Highway 50 and the City of Rancho Cordova, and regionally significant corridors in Sacramento County and the City of Folsom for incident management (non-capacity increasing) [Caltrans ID SAC25113].

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE CU-TR-4: CUMULATIVE ROADWAY FUNCTIONALITY IMPROVEMENTS

The project applicant shall implement Mitigation Measures TR-1 and TR-2. This program would require that before the issuance of tentative maps, the County shall identify the appropriate fair share contribution that the project applicants shall pay toward the construction of the improvements summarized in Table CU-19.

Proposed improvements include widening the deficient rural roadway segments shown in Table CU-19 to County standards. Table CU-19 summarizes the proposed improvements of widening the deficient rural roadway segments to County standards, and the resultant functionality analysis for these roadway segments with these improvements implemented.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE CU-TR-5: CUMULATIVE ROADWAY SEGMENT OPERATIONS CUMULATIVE MATHER SOUTH PROJECT

The project applicant shall implement Mitigation Measure CU-TR-1 which requires the applicant to pay their appropriate fair share contribution toward the construction of the improvements summarized in Table CU-21.

Table CU-21 summarizes the results of the operations analysis for the study area roadway segments with mitigation under the Cumulative Plus Mather South Project scenario. Where feasible, the number of roadway lanes was increased to mitigate the impact. However, the increased number of lanes could not exceed the maximum General Plan designations of the appropriate jurisdictions. The shaded table cells under the "Travel Lanes" and "Facility Type" headings illustrate widened roadways for mitigation purposes, which would be the responsibility of the Jackson Corridor Projects to fund. The Mather South Project would contribute its fair share for these improvements. The shaded table cells under the "Level of Service" heading indicate those locations that would continue to operate unacceptably after mitigation. The table also includes the constraint that precluded full mitigation of the LOS impact. In several locations where the improvements allowed under the general plan would not mitigate an LOS impact, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These alternative mitigation measures will either fully mitigate the impact or substantially reduce the level of impact.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE CU-TR-6: CUMULATIVE INTERSECTION OPERATIONS CUMULATIVE MATHER SOUTH PROJECT

The project applicant shall implement Mitigation Measure CU-TR-2. This mitigation will require the project applicant to contribute their appropriate fair share contribution toward the construction of the improvements summarized in Table CU-24a through Table CU-25b below.

Table CU-24a and Table CU-25a summarize recommended mitigation and the results of the operations analysis for the traffic study area intersections with mitigation, which does not exceed the County's standard number of approach lanes, under the Cumulative Plus Mather South Project scenario. Table CU-24b and Table CU-25b summarize recommended mitigation and the results of the operations analysis for the traffic study area intersections with ultimate mitigation, which may exceed the County's standard number of approach lanes, under the Cumulative Plus Mather South Project scenario.

Shaded table cells indicate those locations where changes in traffic control and / or number of approach lanes by type have been made to mitigate impacts, which would be the responsibility of the Jackson Corridor Projects to fund. Table CU-25a and Table CU-25b also identify those intersections that would continue operate at unacceptable levels after mitigation, along with the constraint that precluded full mitigation. In locations where the LOS impact could not be mitigated by implementing the County's standard number of approach lanes, the County has proposed alternative mitigation measures, which are shown in the "Alternative Mitigation" column. These generally include providing additional turn lanes, carrying an additional through lane past the intersection, or designating the intersection as a High Capacity Intersection. These alternative mitigation measures would either fully mitigate the impact or substantially reduce the level of impact. Detailed intersection operations calculations and the full list of study area intersection operating conditions are included in Appendix TR-1.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE CU-TR-7: FREEWAY CAPACITY IMPROVEMENTS

The project shall implement Mitigation Measure CU-TR-3.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE CU-TR-8: ROADWAY FUNCTIONALITY IMPROVEMENTS

The project applicant shall implement Mitigation Measure CU-TR-4. This mitigation would require the project applicant to pay their appropriate fair share contribution toward the construction of the improvements summarized in **Table CU-27**.

Proposed improvements include widening the deficient rural roadway segments shown in **Table CU-27** to County standards. **Table CU-27** summarizes the proposed improvements of widening the deficient rural roadway segments to County standards, and the resultant functionality analysis for these roadway segments with these improvements implemented.

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.
2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.
2. Monitor compliance during periodic site inspections of the construction work.
3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____

☐ MITIGATION MEASURE CU-1: COORDINATION WITH SMUD

The project applicant of each of the following Specific and Community Master Plans: Newbridge Specific Plan, the West Jackson Highway Master Plan, the Jackson Township Specific Plan, and the Mather South Community Master Plan shall coordinate with SMUD to identify the timing of construction of the Jackson Bulk Substation and seek to facilitate efficiencies in grading and pre-construction activities as feasible, as a condition of this project

Implementation and Notification (Action by Project Applicant):

1. Comply fully with the above measure.

2. Include the above measure verbatim as a Construction Note and incorporate it into all Plans and Specifications for the project, and submit one copy to the Environmental Coordinator for review and approval prior to the start of any construction work (including clearing and grubbing).

Verification (Action by the Environmental Coordinator):

1. Review the Project Plans prior to the start of construction. Approve Project Plans that are determined to be in compliance with all required mitigation.

2. Monitor compliance during periodic site inspections of the construction work.

3. Participate in any Final Inspection(s) as necessary.

Comments:

Completion of Mitigation Verified:

Signature: _____ Date: _____