DRAFT ENVIRONMENTAL IMPACT REPORT

JACKSON TOWNSHIP SPECIFIC PLAN

Control Number: PLNP2011-00095
State Clearinghouse Number: 2013082017
Date

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
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EXECUTIVE SUMMARY

This environmental impact report (EIR) describes the potential environmental impacts of developing the Jackson Township Specific Plan (referred to throughout this EIR as the 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 Project is a specific plan for the development of 1,391 acres in unincorporated Sacramento County (hereinafter referred to as the Plan Area). The Project includes a land use plan that would provide for a range of different uses, including a variety of residential, public, park, open space, and employment-generating uses such as office, commercial, and retail. The Project is intended to provide for a diverse community that can accommodate a wide range of residents in various housing types in proximity to existing and planned job centers, including new jobs created within the Plan Area. The Plan Area has been designed to create two distinctive "hubs" that would serve as the focus of the community and allow for people to live, work, shop, and recreate in the same place: a Town Center along Jackson Road and a smaller village along Excelsior Road at the northwest corner of the Plan Area.

Another key feature of the Plan Area is a large, centrally located greenway/drainage corridor with a trail on one side that has been designed to provide easy, non-vehicular linkages from one end of the community to the other. Most residential units within the Plan Area would be located within 0.25 mile of an open space area, park, or linear parkway; and within 0.5 mile of retail and employment land uses. In addition, much of the eastern portion and the area north of Kiefer Boulevard in the Plan Area would be a wetland and habitat preserve. The proposed preserve location is part of a regional wetland and habitat conservation strategy that was developed by the County as part of the South Sacramento Habitat Conservation Plan process.

ORGANIZATION OF THE DRAFT ENVIRONMENTAL IMPACT REPORT

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 2: Describes the location of the Project, Project background, existing conditions in the Plan Area, and the nature and location of specific elements of the Project.

Chapter 3: Describes feasible alternatives to the Project, including the no project alternative, describing the consequences of taking no action.

Chapters 4 through 20: Include 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 21: Provides an overview of the environmental evaluation, including impact conclusions and cumulative impacts.

Chapter 22: Provides additional analysis about the Project's potential effects in the region, including socioeconomic considerations, potential growth inducement, and environmental justice issues.

Chapter 23: Lists all resources used to prepare the draft EIR.

Chapter 24: Identifies preparers of the draft EIR.

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 (Table ES-1) 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: SUBSTANTIALLY DEGRADE EXISTING VISUAL CHARACTER OR QUALITY	Proposed Project = S Alt. 2 = S	No mitigation is available.	Proposed Project = SU Alt. 2 = SU
IMPACT: NEW SOURCES OF LIGHT	Proposed Project = S Alt. 2 = S	No mitigation is available.	Proposed Project = SU Alt. 2 = SU
IMPACT: NEW SOURCES OF GLARE	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
AGRICULTURAL RESOURCES			
IMPACT: CONVERT PROTECTED ONSITE FARMLAND TO NON-AGRICULTURAL USES	Proposed Project = LTS Alt. 2 = LTS	AG-1: Prior to Sacramento County's approval of improvement plans, building permits, or recordation of the final map, whichever occurs first, the Project Applicant shall offset the loss of Important Farmland within the Plan Area through 1:1 preservation of farmland within a permanent conservation easement. The impact acreage requiring offset shall be based on the most current FMMP at the time of the County's approval and will be 82 acres if the 2016 map is the most current available. Preservation land must be in-kind or of similar resource value.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: CONFLICT WITH EXISTING, ADJACENT AGRICULTURAL USE AND ZONING	Proposed Project = LTS Alt. 2 = LTS	AG-2: To ensure compliance with Sacramento County General Plan Policy AG-4, all prospective buyers of properties within 500 feet to the east of Excelsior Road and north of Jackson Road shall receive a recorded notice that would appear in the Title Report that they could be subject to inconvenience or discomfort resulting from accepted farming	Proposed Project = LTS Alt. 2 = LTS

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

		activities as per provisions of the Sacramento County Right-To-Farm Ordinance.	
AIR QUALITY			
IMPACT: CONSTRUCTION EMISSIONS OF CRITERIA AIR POLLUTANTS AND PRECURSORS (ROG, NO_X, PM_{10}, AND $PM_{2.5}$)	Proposed Project = S Alt. 2 = S	AQ-1A: For all future land use development applications processed within the Plan Area, the Project Applicant, its designee, or subsequent developer(s), shall require its construction contractors to implement SMAQMD's Basic Construction Emission Control Practices in place at the time of construction, which currently include the following: • 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 or 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); • complete construction of all roadways, driveways, sidewalks, parking lots as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used; • 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; and • 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. These measures shall be included in Project improvement plans as a condition of approval. AQ-1B: The Project Applicant, its designee, or subsequent developer(s), shall implement SMAQMD's Enhanced Exhaust Control Practices for NO_X	Proposed Project = LTS Alt. 2 = LTS

		and exhaust PM emissions. Before the issuance of grading and/or building permits, Project Applicant, or its designee, shall submit to the County and SMAQMD an initial report of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used 8 hours or more during any portion of the construction project before any grading activities. The initial report shall include the horsepower rating, engine model year, and projected hours of use for each piece of equipment. The Project Applicant 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 report 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 Applicant, or its designee, 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 10 percent NO_X reduction (depending on available technology and engine Tier) 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 Applicant, or its designee, shall submit a final report at the end of the job, phase, or calendar year, as pre-arranged with SMAQMD staff and documented in the approval letter, to demonstrate continued project compliance. 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 aforementioned mitigation measures, 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 would be reduced to a less-than-significant level. The fee calculation to offset daily NO_X emissions shall be based on the SMAQMD-determined cost to reduce one ton of NO_X applicable at the time (currently $30,000 per ton but subject to change in future years). Once initial construction activities are finalized by the developer, and before the issuance of grading and/or building permits, quantification of construction-related emissions shall be verified at the project level. As each project-level 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 the contractor equipment report 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.	
IMPACT: LONG-TERM OPERATIONAL EMISSIONS OF CRITERIA POLLUTANTS AND PRECURSORS (ROG, NO_X, PM_{10}, AND $PM_{2.5}$)	Proposed Project = S Alt. 2 = S	AQ-2a: If the Project is approved, the Project Applicant or subsequent developer(s) shall prepare an AQMP that demonstrates a 35 percent reduction from an "unmitigated" project scenario consistent with guidance from SMAQMD for the Project within 6 months following approval. The AQMP shall compare the Project's emissions using vehicle miles traveled (VMT) values from a traffic study conducted for the Project against an "unmitigated" scenario that utilizes default VMT values using the latest version of the California Emissions Estimator Model (CalEEMod) computer program. If the comparison does not demonstrate a 35 percent reduction, the Project Applicant shall develop feasible on-site reduction measures that reduce emissions to meet the 35 percent reduction target as mandated by SMAQMD. The AQMP shall undergo review by SMAQMD and shall only be applied to the Project following formal verification from SMAQMD in letter form. AQ-2b: Alternative 2 shall include the following quantifiable reduction measures included in the AQMP prepared for Alternative 2 (Appendix AQ-1 of the EIR), which would reduce Alternative 2's operational criteria air	Proposed Project = SU Alt. 2 = SU

		pollutants and ozone precursors by 35 percent in comparison to the "unmitigated" Alternative 2, as conditions of approval: <u>Transportation</u> • The Project Applicant or subsequent developer(s) shall implement a program to provide a non-revocable funding mechanism that would pay for bus and/or shuttle operations between the project and the Manlove Light Rail Station. The nonrevocable funding mechanism would be administered by the County and would provide residents and employees of Jackson Township Alternative 2 with transit passes that would access the entire Regional Transit system. • The Project Applicant or subsequent developer(s) shall install up to 10 percent of all parking spaces with electric vehicle (EV) charging stations at commercial, retail, and office parking lots and up to 5 percent at school parking lots for Alternative 2. Each EV charging station shall have 2 connections. • The Project Applicant or subsequent developer(s) shall prewire all low density and medium density dwelling units (3,540 dwelling units for Alternative 2) plus 10 percent of the high-density residential housing (10 percent of 2,050 dwelling units for Alternative 2, or 205 units in high density housing) to be conducive to installation of electric charging stations. <u>Energy</u> • The Project Applicant or subsequent developer(s) shall install energy efficient boilers as applicable in high-density housing (mid-rise apartments), discount club, office, high school, and supermarket land uses for Alternative 2. • The Project Applicant or subsequent developer(s) shall install electric hot water heaters in all single and multi-family housing units (low, medium, and high density), or a total of 5,690 dwelling units for Alternative 2. <u>Project Design</u> • The Project Applicant or subsequent developer(s) shall install low-flow bathroom, kitchen, and shower fixtures; and low-flow toilets in all residential units and commercial buildings. • The Project Applicant or subsequent developer(s) shall reduce the total square footage of residential turf associated with increased housing density.	

		• The Project Applicant or subsequent developer(s) shall install water efficient irrigation systems and water efficient landscaping for non-residential areas. • The Project Applicant or subsequent developer(s) shall preserve wetlands and create new greenbelts, parking, and other vegetative areas totaling approximately 400 acres for Alternative 2. • The Project Applicant or subsequent developer(s) shall reduce VMT through membership in a Transportation Management Association (TMA).	
IMPACT: MOBILE-SOURCE CO CONCENTRATIONS	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: EXPOSURE OF SENSITIVE RECEPTORS TO TACS	Proposed Project = S Alt. 2 = S	AQ-3: Before Design Review approval, the Project Applicant, its designee, or subsequent developer(s), shall implement design features to reduce TAC exposure during operation. • Consistent with guidance in CARB's *Air Quality and Land Use Handbook,* proposed commercial and educational land uses that have the potential to emit TACs or host TAC-generating activity (e.g., loading docks that accommodate more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units per day, or where transport refrigeration unit operations exceed 300 hours per week) shall be located at least 1,000 feet 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 (CARB 2005). • Loading dock design shall 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 in the same building as dry-cleaning operations that use	Proposed Project = LTS Alt. 2 = LTS

		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. • Plant and maintain a vegetative buffer between the truck loading/unloading facility and nearby sensitive residences, schools, and daycare facilities. As part of detailed site design, a landscape architect licensed by the California Landscape Architects Technical Committee shall identify all locations where trees should be located, accounting for areas where shade is desired such as along pedestrian and bicycle routes, the locations of solar photovoltaic panels, and other infrastructure.	
IMPACT: CONSISTENCY WITH AN APPLICABLE AIR QUALITY PLAN	Proposed Project = S Alt. 2 = S	AQ-4: The Project Applicant, or subsequent developer(s), shall implement Mitigation Measures AQ-1a, AQ-1b, AQ-2a, and AQ-2b to reduce emissions to the extent feasible.	Proposed Project = SU Alt. 2 = SU
IMPACT: EXPOSURE TO OBJECTIONABLE ODORS	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
Airport Compatibility			
IMPACT: SAFETY HAZARDS TO PEOPLE LIVING AND WORKING IN THE VICINITY OF AN AIRPORT	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: EXPOSURE TO EXCESSIVE NOISE LEVELS ASSOCIATED WITH AIRPORT OPERATIONS	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: EFFECTS ON SAFE AND EFFICIENT USE OF NAVIGABLE AIRSPACE	Proposed Project = PS Alt. 2 = PS	AC-1: Upon acceptance of a complete application for development within the Plan Area, staff from the Sacramento County Office of Planning and Environmental Review shall transmit the completed Project application to the ALUC.	Proposed Project = LTS Alt. 2 = LTS
BIOLOGICAL RESOURCES			
IMPACT: LOSS OF HABITAT FOR VERNAL POOL INVERTEBRATES	Proposed Project = S	BR-1: To reduce impacts to listed vernal pool invertebrates and wetland habitat the Project Applicant and all subsequent developers of non-	Proposed Project = SU

	Alt. 2 = S	participating parcels shall comply with one or a combination of the following: 1. *Total Avoidance: Species is present or assumed to be present.* Unless a smaller buffer is approved through formal consultation with USFWS, construction fencing shall be installed a minimum of 250 feet from the delineated wetland margin. All construction activities are prohibited within this buffer area. If total avoidance is achieved, no further action is required. 2. 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 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 onsite or offsite restoration 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 or subsequent developer(s) 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 would be replaced. The plan shall identify in-kind reference wetland habitats for comparison with restored wetlands (using performance	(BR-1)/LTS (BR-2) Alt. 2 = SU (BR-1)/LTS (BR-2)

		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 Or,	

		BR-2: Obtain coverage for the Project under the SSHCP. In addition to payment of development fees and dedication of land in accordance with the SSHCP, the Project Applicant shall implement all applicable Avoidance and Minimization Measures codified in the SSHCP at the time permits are obtained. Draft Avoidance and Minimization Measures currently provided in the SSHCP are included in Appendix BR-3.	
IMPACT: SPECIAL-STATUS PLANTS	Proposed Project = S Alt. 2 = S	BR-3: Before any grading, grubbing, or excavation of the Plan Area within 250 feet of a vernal pool or other suitable habitat, rare plant surveys shall be performed. The surveys should be floristic in nature, meaning that all plant species found in the survey area shall be identified to the taxonomic level necessary to determine rarity and listing status. The rare plant surveyor shall have experience as a botanical field investigator and familiarity with the local flora and potential rare plants in the habitats to be surveyed. The surveys shall be conducted when the rare plants at the site will be easiest to identify (i.e., flowering stage), and when the plants reach that stage of maturity. Nearby reference populations shall be visited before surveys, if available, to confirm the target species have emerged and are in an identifiable state. A minimum of three site visits spread throughout the growing season (at least 14 days apart) shall be required to capture the botanical diversity of the Plan Area. The Project Applicant or subsequent developer(s) shall submit a written report to the Sacramento County Environmental Coordinator which describes the survey. The survey report should include a brief description of the vegetation, survey results (which includes a list of all species observed), photographs, time spent surveying, date of surveys, a map showing the location of the survey route and any rare plant populations and copies of any rare plant occurrence forms. If no rare plants are found, no further mitigation for plant species is required. If a special-status plant is located, the Project Applicant or subsequent developer(s) shall complete and submit to the CNDDB a California Native Species Field Survey Form or equivalent written report, accompanied by a copy of the relevant portion of a 7.5-minute topographic map with the occurrence mapped. 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	Proposed Project = LTS Alt. 2 = LTS

		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). • Notify CDFW, as required by the California Native Plant Protection Act, of any special-status plants or any plant species listed under the Endangered Species Act are found. • Develop a mitigation and monitoring plan to compensate for the loss of any special-status plant species found during surveys. The mitigation and monitoring plan shall be submitted to CDFW and/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 offsite populations on project mitigation sites through seed collection or transplantation, purchasing credits at an agency-approved mitigation bank, and/or preserving occupied habitat offsite in sufficient quantities to offset loss of occupied habitat or individuals. • 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. 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. BR-4: Surveys for Sanford's Arrowhead shall be performed by a qualified botanist during the species non-dormant, flowering period (May – October) before any ground disturbing activities within suitable habitat inside the Plan Area. Results of the surveys should be summarized in a report and submitted to the Environmental Coordinator for their review and comments. The survey report shall include a brief description of the vegetation, survey results, photographs, time spent surveying, date of surveys, a map showing the location of the survey route and any Sanford's Arrowhead populations. If the species is not found during the survey, no further mitigation would be required. If plant(s) are found, the botanist shall establish distribution of the colony(s) and estimate the number of individuals in the population. Unless deemed infeasible by the Environmental Coordinator, all plants or tuber/rhizomes shall be removed from the area of impact and transplanted to a new or existing preserve or, if the impact is temporary, replanted in the same location after the disturbance. Monitoring shall be performed annually at the transplant location for a period of 3 years to ensure success. Results of all surveys shall be submitted to the Environmental Coordinator. If survival is not meeting a minimum 60 percent survivorship, transplantation will be deemed failed. In cases where transplanting is deemed infeasible, or where transplanting has failed, compensatory mitigation shall be submitted to the Environmental Coordinator. Compensatory mitigation shall consist of placement of a conservation easement over a known, unprotected population of the species. Or, Implement Mitigation Measure BR-2.	
IMPACT: LOSS OF HABITAT FOR VALLEY ELDERBERRY LONGHORN BEETLE	Proposed Project = PS Alt. 2 = PS	BR-5: 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	Proposed Project = LTS Alt. 2 = LTS

		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 and subsequent developer(s) 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 Applicant and subsequent developer(s) shall mitigate for the loss of the valley elderberry beetle habitat according to the USFWS 2017 Framework. • The Project Applicant and subsequent developers shall comply with ESA and consult with USFWS and 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 Applicant or subsequent developer(s) 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 Applicant or subsequent developer(s) 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.
		Or,
		Implement Mitigation Measure BR-2.	

IMPACT: LOSS OF BURROWING OWLS AND HABITAT	Proposed Project = PS Alt. 2 = PS	BR-6: 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 Applicant and subsequent developer(s) shall hire a qualified biologist to conduct surveys in accordance with Appendix D of CDFW's Staff Report on Burrowing Owl Mitigation (CDFW 2012). Survey methods shall include the following:	Proposed Project = LTS Alt. 2 = LTS

		• 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 proposed wetland 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 Applicant or subsequent developer(s) 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 an escape route will always be maintained during excavation. This may include inserting an artificial structure into the burrow to avoid having materials collapse into the burrow and trap owls inside. Passive relocation shall not be used unless expressly approved by CDFW as part of the burrowing owl exclusion and relocation plan and should not be implemented unless alternate burrows are available nearby (within 500 feet) for displaced owls to relocate. If natural burrows are not available, the Proejct Applicant or subsequent developer(s) will create artificial burrow systems in the preserve lands within 500 feet of destroyed burrows if practicable given geographical distances between the affected burrows and available preserve lands. BR-7: 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 Applicant or subsequent developer(s) 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 adversely affected 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 Applicant or subsequent developer(s) 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. • 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 proposed wetland 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 proposed wetland 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. Or, Implement Mitigation Measure BR-2.	
IMPACT: LOSS OF TRICOLORED BLACKBIRD NESTING AND FORAGING HABITAT	Proposed Project = PS Alt. 2 = PS	BR-8: If construction activity (which includes clearing, grubbing, or grading) is to commence within 0.25 mile of suitable tricolored blackbird nesting habitat between March 15 and August 31, a survey for nesting tricolored blackbirds shall be conducted by a qualified biologist. The survey shall cover all potential nesting habitat onsite and offsite up to a distance of 0.25 mile from the project boundary. The survey shall occur no more than 48 hours before the onset of activities for signs of tricolored blackbird individuals or nesting/colonial activity. The biologist shall supply a written report (including date, time of survey, survey method, name of surveyor and survey results) to the Environmental Coordinator before ground disturbing activity. If no tricolored blackbird are found during the pre-construction survey, no further mitigation shall be required. If an active tricolored blackbird colony is found onsite or within 0.25 mile of the Plan Area, the Project Applicant or subsequent developer(s) shall do the following: 1. If necessary, modification to the project design to avoid removal of occupied habitat while still achieving project objectives shall be evaluated and implemented to the extent feasible. 2. Under CDFW consultation, the Project Applicant or subsequent developer(s) may avoid impacts to tricolored blackbird by establishing a 0.25 mile temporary setback, with fencing that prevents any project activity within 0.25 mile of the colony. 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 nesting,	Proposed Project = LTS Alt. 2 = LTS

		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. A qualified biologist shall verify that setbacks and fencing are adequate and will determine when the colonies are no longer dependent on the nesting habitat (i.e., nestling have fledged and are no longer using habitat). The breeding season typically ends by mid-July but shall be verified by a qualified biologist. 3. If tricolored blackbird nesting habitat is permanently destroyed follow the CDFW procedure to mitigate for habitat loss, which typically would be mitigated at a 1:1 ratio, and submit documentation of the mitigation to the Environmental Coordinator. Or, Implement Mitigation Measure BR-2	
IMPACT: LOSS OF SWAINSON'S HAWK FORAGING HABITAT	Proposed Project = PS Alt. 2 = PS	BR-9: Before any site disturbance, such as clearing or grubbing, the issuance of any permits for grading, building, or other site improvements, or recordation of a final map, whichever occurs first, or, if only a rezone is requested, before final adoption of the zoning agreement, implement one of the following options to mitigate for the loss of 516.7± acres of Swainson's hawk foraging habitat on the Applicant-owned properties: 1. The project Applicant shall utilize one or more of the mitigation options (land dedication and/or fee payment) established in Sacramento County's Swainson's Hawk Impact Mitigation Program (Chapter 16.130 of the Sacramento County Code). 2. The project Applicant shall, to the satisfaction of CDFW, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat at a ratio of 1 acre preserved for every acre lost as a result of the project. Preservation habitat shall be of equal or better foraging quality than the habitat lost and shall be managed in perpetuity for Swainson's hawk foraging values. 3. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee payable before issuance of building permits) before the implementation of one of the measures above, the project Applicant may be subject to that program instead.	Proposed Project = LTS Alt. 2 = LTS

		BR-10: When a rezone is requested on non-participating properties, the current property owner shall implement one of the below options to mitigate for the loss of Swainson's hawk foraging habitat on the parcel(s) being rezoned. Acreage will be the total acreage being rezoned (up to 219 acres). Mitigation will occur before any site disturbance, such as clearing or grubbing, the issuance of any permits for grading, building, or other site improvements, or recordation of a final map, whichever occurs first, or, if only a rezone is requested, before final adoption of the zoning agreement: 1. The project Applicant shall utilize one or more of the mitigation options (land dedication and/or fee payment) established in Sacramento County's Swainson's Hawk Impact Mitigation Program (Chapter 16.130 of the Sacramento County Code). 2. The project Applicant shall, to the satisfaction of the CDFW, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat at a ratio of 1 acre preserved for every acre lost as a result of the project. The project Applicant will compensate for the removal of suitable Swainson's hawk foraging habitat by providing offsite habitat management lands as described in CDFW's Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California (California Department of Fish and Game 1994). Preservation habitat shall be of equal or better foraging quality than the habitat lost and shall be managed in perpetuity for Swainson's hawk foraging values. 3. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee payable before issuance of building permits) before the implementation of one of the measures above, the project Applicant may be subject to that program instead. Or, Implement Mitigation Measure BR-2.	
IMPACT: LOSS OF SWAINSON'S HAWK NESTING HABITAT	Proposed Project = PS Alt. 2 = PS	BR-11: Tree removal shall be conducted during the non-breeding season for Swainson's hawk (generally between September 1 and February 28). Swainson's hawk nest trees shall not be removed unless avoidance is not feasible. If a Swainson's hawk nest tree must be removed, a Management Authorization from CDFW shall be obtained which will include conditions to offset the loss of the nest tree. If a nest tree needs to be removed, the tree removal period shall follow the Management Authorization guidelines, which is typically between October 1 – February 1.	Proposed Project = LTS Alt. 2 = LTS

		For project activities, including tree removal, that begin between March 1 and September 15, qualified biologists shall conduct preconstruction surveys for Swainson's hawk and other nesting raptors and to identify active nests on and within 0.5 mile of the project site. The surveys will be conducted before the beginning of any construction activities between March 1 and September 15, following the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000). Impacts to nesting Swainson's hawks shall be avoided by establishing appropriate buffers around active nest sites identified during preconstruction raptor surveys. No project activity will 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 likely result in nest abandonment. CDFW guidelines recommend implementation of 0.25- mile-wide buffers for Swainson's hawk and 500-feet for other raptors, but the size of the buffer may be adjusted if a qualified biologist and the Environmental Coordinator, 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 will be required if the activity has 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. 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. Or, Implement Mitigation Measure BR-2.	
IMPACT: DISTURBANCE OR LOSS OF OTHER SPECIAL-STATUS BIRD NESTS	Proposed Project = PS Alt. 2 = PS	BR-12: The Project Applicant and all future proponents of development on non-participating properties shall implement the following measures to avoid the removal of active raptor nests. • For project activities, including tree removal, that begin between March 1 and September 15, qualified biologists will conduct preconstruction surveys for nesting raptors and to identify active nests on and within 0.5 mile of the project site. • Impacts to nesting raptors will be avoided by establishing appropriate buffers around active nest sites identified during preconstruction	Proposed Project = LTS Alt. 2 = LTS

		raptor surveys. No project activity will 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 likely result in nest abandonment. CDFW guidelines recommend implementation of a buffer of 500-feet for raptors unless there is a species specific buffer, but the size of the buffer may be adjusted if a qualified biologist, in consultation with CDFW, determines 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 will be required if the activity has 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. • Trees will not be removed during the breeding season for nesting raptors unless a survey by a qualified biologist verifies that there is not an active nest in the tree. BR-13: To avoid impacts to special-status nesting non-raptors the following shall apply: 1. If construction activity (which includes clearing, grubbing, or grading) is to commence within 500 feet of nesting habitat between February 1 and August 31, a survey for active migratory bird nests shall be conducted no more than 14 day before construction by a qualified biologist. 2. Trees slated for removal shall be removed during the period of September through January, to avoid the nesting season. Any trees that are to be removed during the nesting season, which is February through August, shall be surveyed by a qualified biologist and will only be removed if no active nests are found. 3. If active nest(s) are found in the survey area, a non-disturbance buffer, the size of which has been determined by a qualified biologist, shall be established and maintained around the nest to prevent nest failure. All construction activities shall be avoided within this buffer area until a qualified biologist determines that nestlings have fledged, or until September 1. 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. Or, Implement Mitigation Measure BR-2.	
IMPACT: LOSS OF FORAGING HABITAT FOR OTHER SPECIAL-STATUS BIRDS	Proposed Project = PS Alt. 2 = PS	Implement Mitigation Measures BR-9 and BR-10. Or, Implement Mitigation Measure BR-2.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: LOSS OF COMMON RAPTOR AND OTHER COMMON BIRD NESTS	Proposed Project = PS Alt. 2 = PS	Implement Mitigation Measures BR-12 and BR-13. Or, Implement Mitigation Measures BR-2.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: LOSS OF AMERICAN BADGER DENS	Proposed Project = PS Alt. 2 = PS	BR-14: 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.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: LOSS OF SPECIAL-STATUS BAT ROOSTS	Proposed Project = PS Alt. 2 = PS	BR-15: The Project Applicant or subsequent developer(s) 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	Proposed Project = LTS Alt. 2 = LTS

		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. Or, Implement Mitigation Measure BR-2.	
IMPACT: LOSS OF WESTERN POND TURTLE HABITAT AND INDIVIDUALS	Proposed Project = PS Alt. 2 = PS	BR-16: If the large irrigation pond on the southern side in the Plan Area along Tree View Road or surrounding uplands within 300 feet are to be physically disturbed by any future activity, surveys shall be conducted for this species no more than 24 hours before construction. If western pond turtles are found, no construction or other activities that could result in	Proposed Project = LTS Alt. 2 = LTS

		harm to western pond turtles shall begin until a relocation plan has been developed and submitted to CDFW. Once CDFW has approved a relocation plan and turtles have been moved safely out of harm's way, construction may proceed. A qualified biologist shall conduct a pre-construction worker awareness training and be onsite to monitor construction during initial vegetation clearing and ground disturbance. The relocation plan should establish western pond turtle handling procedures and identify suitable habitat where the western pond turtles will be released. Release sites shall be suitable habitat located as close as possible to the Plan Area. Or, Implement Mitigation Measure BR-2.	
IMPACT: LOSS OF WESTERN SPADEFOOT HABITAT AND INDIVIDUALS	Proposed Project = PS Alt. 2 = PS	Implement Mitigation Measure BR-1 to compensate for loss of aquatic habitat. BR-17: Before construction in or around vernal pools, surveys shall be conducted for western spadefoots no more than 30 days before construction. If western spadefoots are found, then the project biologist should conduct a pre-construction worker awareness training and be onsite to monitor construction during initial vegetation clearing and ground disturbance. If any western spadefoots must be relocated during the project, no construction or other activities that could result in harm to western spadefoots shall begin until a relocation plan has been developed and submitted to CDFW. Once CDFW has approved a relocation plan and western spadefoots have been moved safely out of harm's way, construction may proceed. The relocation plan shall establish western spadefoot handling procedures and identify suitable habitat where the western spadefoot will be released. Release sites should be suitable habitat located as close as possible to the Plan Area and may include the Plan Area preserve. Or, Implement Mitigation Measure BR-2.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: LOSS OF WETLANDS AND OTHER WATERS	Proposed Project = S Alt. 2 = S	BR-18: To compensate for the permanent loss of wetlands and waters on Applicant-owned properties, the Project Applicant shall perform one or a combination of the following before issuance of grading permits, improvement plans or building permits, and shall also obtain all applicable permits from USACE, USFWS, the Central Valley Regional Water Quality Control Board, and CDFW:	Proposed Project = SU Alt. 2 = SU

		A. Where a Section 404 Permit has been issued by USACE, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of USACE for granting a permit may be submitted for purposes of achieving a no net-loss of wetlands. The required Plan shall be submitted to the Sacramento County Office of Planning and Environmental Review, USACE, and USFWS for approval before its implementation. B. If regulatory permitting processes result in less than a 1:1 compensation ratio for loss of wetlands, the Project Applicant shall demonstrate that the wetlands that went unmitigated/uncompensated as a result of permitting have been mitigated through other means. Acceptable methods include payment into a mitigation bank or protection of offsite wetlands through the establishment of a permanent conservation easement, subject to the approval of the Environmental Coordinator. BR-19: Before issuance of building permits, grading permits, or approval of improvement plans, all areas designated within the Plan Area as Wetland Preserve shall be placed within a permanent conservation easement, which shall be reviewed and approved by the Planning and Environmental Review Division. At a minimum, the permanent conservation easements must cover all areas which are required to be preserved as part of the Section 404 and Section 401 wetland permits. BR-20: Any land use entitlements proposed for the non-participating properties must obtain a wetland delineation and comply with Mitigation Measures BR-28 and BR-29. Or, Implement Mitigation Measure BR-2.	
IMPACT: DISTURBANCE OF RIPARIAN HABITATS	Proposed Project = PS Alt. 2 = PS	BR-21: If Project activities will disturb the bed, bank, or associated riparian vegetation of any stream or pond on the Plan Area, the Project Applicant shall notify the CDFW pursuant to Section 1602 of the Fish and Game Code before engaging in such activities. If appropriate, the Project Applicant shall enter into a Streambed Alteration Agreement with CDFW and coordinate with CDFW in developing appropriate mitigation at a minimum 1:1 ratio of habitat lost or degraded to habitat restored and should abide by the conditions of any executed agreements.	Proposed Project = LTS Alt. 2 = LTS

IMPACT: INTERFERENCE WITH THE MOVEMENT OF ANY NATIVE RESIDENT OR MIGRATORY SPECIES	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: LOSS OF NATIVE TREES	Proposed Project = PS Alt. 2 = PS	BR-22: Before execution of any and all development projects within the Plan Area, the Project Applicant or subsequent developer(s) shall submit an arborist report for the project impact areas when appropriate habitat exists. The report shall be prepared by an ISA certified arborist and include the species, diameter, dripline, and health of all trees found within the project impact area. 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 any tree. All native trees identified shall be mitigated for as follows: A. With the exception of the oak trees removed and compensated for through Part B below, all healthy native oak trees that are 6 inches dbh or larger on the Plan Area, all portions of adjacent off-site healthy native oak trees that are 6 inches dbh or larger which have driplines that extend onto the Plan Area, and all off-site healthy native oak 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 1 foot outside the driplines of the oak 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 oak 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 oak tree shall be performed by hand. If the certified arborist determines that it is not feasible to perform some portion(s) of this	Proposed Project = LTS Alt. 2 = LTS

		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 oak 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 oak trees. 6. Any soil disturbance (scraping, grading, trenching, and excavation) is to be avoided within the dripline of the oak 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 5 feet outside the driplines of protected oak 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 oak 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 oak tree. 11. No sprinkler or irrigation system shall be installed in such a manner that it sprays water within the dripline of the oak tree. 12. Tree pruning required for clearance during construction must be performed by an ISA Certified Arborist or Tree Worker. 13. Landscaping beneath the oak 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 2 feet away from the base of the trunk. The only plant species which shall be planted within the dripline of the oak 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 on-site healthy native oak trees shall be protected and preserved. Any substantial (>20%) encroachment and/or removal of native oak trees shall be compensated by planting native trees (valley oak/*Quercus lobata*, interior live oak/*Quercus wislizenii*, blue oak/*Quercus douglasii*), equivalent to the dbh inches lost, based on the ratios listed below, at locations that are authorized by the Environmental Coordinator. 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 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 Project Applicant to provide funding for purchase, planting, irrigation, and 3-year maintenance period, should the Project 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 Oak 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 Oak Tree Planting Plan(s) shall include the following minimum elements: 1. Species, size and locations of all replacement plantings; 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. No replacement tree shall be planted within 15 feet of the driplines of existing oak trees or landmark size trees that are retained onsite, or within 15 feet of a building foundation or swimming pool excavation. The minimum spacing for replacement oak 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. If oak 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.	
IMPACT: LOSS OF NON-NATIVE TREE CANOPY	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: SOUTH SACRAMENTO HABITAT CONSERVATION PLAN CONSISTENCY	Proposed Project = SU Alt. 2 = LTS	Implement Mitigation Measures BR-18 through BR-20.	Proposed Project = SU Alt. 2 = LTS
CLIMATE CHANGE			
IMPACT: PROJECT GREENHOUSE GAS EMISSIONS	Proposed Project = S Alt. 2 = S	CC-1A: The Project Applicant shall apply the following on-site greenhouse gas (GHG) mitigation measures as contained in the GHGRP into Alternative 2 to reduce operational emissions to Sacramento County's extrapolated per capita GHG thresholds of significance. Transportation	Proposed Project = LTS Alt. 2 = LTS

		• The Project Applicant shall implement a program to provide a non-revocable funding mechanism that would pay for bus and/or shuttle operations between Alternative 2 and the Manlove Light Rail Station. The nonrevocable funding mechanism would be administered by the County and would provide residents and employees of Jackson Township Alternative 2 with transit passes that would access the entire Regional Transit system. • The Project Applicant shall install 480 public electric vehicle (EV) charging stations in commercial, retail, and office parking lots and up to 5 percent at school parking lots. Each EV charging station shall have two connections. • The Project Applicant shall prewire all low density and medium density dwelling units (3,540 dwelling units for Alternative 2) plus 10 percent of the high density residential housing (10 percent of 2,050 dwelling units for Alternative 2, or 205 units in high density housing) to be conducive to installation of electric charging stations. Energy • The Project Applicant shall install energy efficient boilers as applicable in high-density housing (mid-rise apartments), discount club, office, high school, and supermarket land uses to achieve a 9.1 percent increase in energy efficiency. Energy efficient boilers shall only be installed to replace natural gas fueled boilers. • The Project Applicant shall install electric hot water heaters in all single and multi-family housing units (low, medium, and high density), or a total of 5,690 dwelling units for Alternative 2. • The Project Applicant shall install high efficacy public outdoor lighting for 16 percent of total outdoor lighting for Alternative 2 consistent with guidance from the California Air Pollution Control Officers Association (CAPCOA). • The Project Applicant shall reduce the amount of residential energy use through the inclusion of EnergyStar appliances of all single- and multi-family dwelling units. Appliances include clothes washers, dishwashers, fans, and refrigerators. CC-1b: the Project Applicant shall prepare a GHGRP or implement all feasible, on-site GHG reduction measures to meet Sacramento County's per capita GHG thresholds of significance for the residential and nonresidential energy and transportation sectors. The per capita	

		thresholds shall be developed based on Sacramento County's GHG inventory as well as statewide GHG reduction targets as directed by SB 32 (i.e., reducing statewide GHG emissions to 40 percent below 1990 levels by 2030) and Executive Order S-3-05 (i.e., reducing statewide GHG emissions to 80 percent below 1990 levels by 2050). The GHGRP, or on-site mitigation measures, shall demonstrate that the Project's operational emissions would not exceed the applicable thresholds for the aforementioned sectors.	
IMPACT: CLIMATE CHANGE EFFECTS ON THE PROJECT			
CULTURAL RESOURCES			
IMPACT: CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE TO A HISTORICAL RESOURCE	Proposed Project = PS Alt. 2 = PS	CR-1:: Cultural resources studies shall be prepared for each future development application for non-participating properties, the property containing P-34-2106, and the 25-acre parcel within the Plan Area. All cultural resources studies shall be prepared by a cultural resources professional that meets the Secretary of the Interior's Professional Qualifications Standards. Studies should include a full pedestrian survey of the subject property. A historic resource evaluation report shall be completed prior to development of the 25-acre property added to the Excelsior Estates APE that provides an eligibility analysis for the historic structures located within that property. The studies should provide mitigation strategies where required for resources.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: CAUSE A SUBSTANTIAL CHANGE TO ARCHAEOLOGICAL RESOURCES	Proposed Project = PS Alt. 2 = PS	CR-2: In the event that human remains are discovered in any location other than a dedicated cemetery, work shall be halted and the County Coroner contacted. For all other unexpected cultural resources discovered during Project construction, work shall be halted until a qualified archaeologist may evaluate the resource encountered. 1. 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 the Office of Planning and Environmental Review 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	Proposed Project = LTS Alt. 2 = LTS

		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. 2. In the event of an inadvertent discovery of cultural resources (excluding human remains) during construction, all work must halt within a 100-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 Project 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 Project Applicant's expense. a. Work cannot continue within the 100-foot radius of the discovery site until the archaeologist and/or tribal monitor 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. b. If a potentially-eligible resource is encountered, then the archaeologist and/or tribal monitor, 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.	
IMPACT: DISTURBANCE OF HUMAN REMAINS	Proposed Project = PS Alt. 2 = PS	Implement Mitigation Measure CR-2.	Proposed Project = LTS Alt. 2 = LTS

IMPACT: CHANGE IN SIGNIFICANCE OF A TRIBAL RESOURCE	Proposed Project = PS Alt. 2 = PS	Implement Mitigation Measures CR-1 and CR-2.	Proposed Project = LTS Alt. 2 = LTS
ENERGY			
IMPACT: WASTEFUL, INEFFICIENT, OR UNNECESSARY CONSUMPTION OF ENERGY, DURING PROJECT CONSTRUCTION OR OPERATION	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: OBSTRUCT A STATE OR LOCAL PLAN FOR RENEWABLE ENERGY OR ENERGY EFFICIENCY	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
GEOLOGY, SOILS, AND MINERAL RESOURCES			
IMPACT: SOIL EROSION, SILTATION, OR LOSS OF TOPSOIL	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: EXACERBATION OF EXPOSURE TO HAZARDS ASSOCIATED WITH EXPANSIVE SOILS	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: POTENTIAL DESTRUCTION OF BURIED PALEONTOLOGICAL RESOURCES	Proposed Project = PS Alt. 2 = PS	GS-1: The Project Applicant shall retain a qualified paleontologist to conduct an on-site training that will alert all construction personnel and operational staff about the possibility of encountering fossils. The appearance and types of fossils likely to be seen during construction will be described. Construction personnel shall be trained about the proper notification procedures should fossils be encountered. If paleontological resources are discovered during earthmoving activities, the Project Applicant shall immediately halt operations within 100 feet of the find and notify the Environmental Coordinator. The Project Applicant shall retain a qualified paleontologist for identification and salvage of fossils so that construction delays can be minimized. If large specimens are discovered, the paleontologist shall have the authority to halt or divert	Proposed Project = LTS Alt. 2 = LTS

		grading and construction equipment while the finds are removed. The paleontologist shall be responsible for implementing all tasks summarized below: • In the event of discovery, salvage of unearthed fossil remains, typically involving simple excavation of the exposed specimen but possibly also plaster-jacketing of large and/or fragile specimens, or more elaborate quarry excavations of richly fossiliferous deposits. • Recovery of stratigraphic and geologic data to provide a context for the recovered fossil remains, typically including description of lithologies of fossil-bearing strata, measurement and description of the overall stratigraphic section, and photographic documentation of the geologic setting. • Laboratory preparation (cleaning and repair) of collected fossil remains to a point of curation, generally involving removal of enclosing rock material, stabilization of fragile specimens (using glues and other hardeners), and repair of broken specimens. • Cataloging and identification of prepared fossil remains, typically involving scientific identification of specimens, inventory of specimens, assignment of catalog numbers, and entry of data into an inventory database. • Preparation of a final report summarizing the field and laboratory methods used, the stratigraphic units inspected, the types of fossils recovered, and the significance of the curated collection.	
HAZARDOUS MATERIALS			
IMPACT: ACCIDENTAL RELEASE DUE TO TRANSPORT, USE, OR DISPOSAL OF HAZARDOUS MATERIALS DURING CONSTRUCTION	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: ACCIDENTAL RELEASE OF HAZARDOUS MATERIALS DURING OPERATION	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: POTENTIAL FOR RELEASE OF HAZARDOUS MATERIALS FROM	Proposed Project = PS Alt. 2 = PS	HM-1: The future project applicant(s) for all non-participating properties shall have a Phase I ESA prepared by a qualified professional in accordance with the American Society for Testing and Materials' E-1527-	Proposed Project = LTS Alt. 2 = LTS

UNDOCUMENTED OR DOCUMENTED SITES OF CONTAMINATION		05 standard before or at the time of application. All applications for future development of such properties shall not be deemed complete until a Phase I ESA that includes analysis of potential for soil and groundwater contamination has been completed and submitted to the Sacramento County Office of Planning and Environmental Review. Once a Phase I ESA that meets the satisfaction of the Environmental Coordinator has been submitted to the Office of Planning and Environmental Review, all applicable recommendations from the Phase I ESA shall be incorporated into the future project as required conditions of approval. If a Phase I ESA indicates the presence or likely presence of contamination, the County shall require a Phase II ESA, and recommendations of the Phase II ESA shall be fully implemented prior to ground disturbance. For work requiring any demolition, the Phase I ESA shall make recommendations for any hazardous building materials survey work that shall be completed. If the Phase I ESA indicates the potential for the presence of hazardous materials within the property or possible groundwater contamination, a focused CEQA analysis addressing hazardous materials shall be prepared for the future project. Any hazardous materials identified through this process shall be remediated consistent with applicable regulations. HM-2: A Phase II ESA that includes soil and groundwater contamination sampling and analysis shall be submitted with all future applications for development within the Plan Area, including Applicant-owned properties, based on the recommendations within the Phase I ESA. Applications will not be considered complete until a Phase II ESA covering the entire property proposed for development is provided as required by the Phase I ESA. Once a Phase II ESA with analyses of soil and groundwater contamination has been submitted to the satisfaction of the Environmental Coordinator, all recommendations for remediation activities and additional studies from the Phase II ESA shall be incorporated into the future project as required conditions of approval. HM-3: At the time of any application to develop properties within the Plan Area, the County shall require that the Project Applicant or subsequent developer(s) provide a hazardous materials contingency plan to Sacramento County EMD. The plan will describe the necessary actions	

		that would be taken if evidence of contaminated soil or groundwater is encountered during construction. The contingency plan shall identify conditions that could indicate potential hazardous materials contamination, including soil discoloration, petroleum or chemical odors, and presence of underground storage tanks or buried building material. The plan shall include the provision that, if at any time during the course of constructing the Project, evidence of soil and/or groundwater contamination with hazardous material is encountered, the Project Applicant shall immediately halt construction and contact Sacramento County EMD. Work shall not recommence until the discovery has been assessed/treated appropriately (through such mechanisms as soil or groundwater sampling and remediation if potentially hazardous materials are detected above threshold levels) to the satisfaction of Sacramento County EMD, RWQCB, and DTSC (as applicable). The plan, and obligations to abide by and implement the plan, shall be incorporated into the construction and contract specifications of the Project.	
IMPACT: RESULT IN HAZARDOUS EMISSIONS OR HANDLE HAZARDOUS OR ACUTELY HAZARDOUS MATERIALS, SUBSTANCES, OR WASTE WITHIN 0.25 MILE WITHIN AN EXISTING OR PROPOSED SCHOOL	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: IMPAIR IMPLEMENTATION OF OR PHYSICALLY INTERFERE WITH AN ADOPTED EMERGENCY RESPONSE PLAN OR EMERGENCY EVACUATION PLAN	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: EXPOSE PEOPLE OR STRUCTURES TO WILDLAND FIRES	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
Hydrology and Water Quality			

IMPACT: SUBSTANTIAL EROSION, SILTATION, OR ENVIRONMENTAL HARM DUE TO ALTERATION OF THE EXISTING DRAINAGE PATTERN	Proposed Project = PS Alt. 2 = PS	HYD-1a: Before approval of future tentative maps, the Project Applicant or future developer(s) shall submit a drainage study in accordance with the requirements outlined in the Sacramento Stormwater Quality Partnership's 2018 Stormwater Quality Design Manual (or subsequent updates). The study shall describe permanent stormwater quality treatment facilities capable of treating stormwater to the satisfaction of County DWR. HYD 1b: Prior to construction of the Jackson Township Drainage Master Plan improvements, detailed plans for the design of the improvements, accompanied by geomorphic, hydrologic, soils, and vegetation analyses that demonstrate the proposed improvements will achieve the primary functions of flood conveyance and stormwater quality treatment while minimizing maintenance requirements, shall be submitted to the County DWR for review and approval.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: CONTRIBUTION TO POLLUTED RUNOFF OR VIOLATION OF A WATER QUALITY STANDARD	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: INCREASE THE POTENTIAL FOR FLOODING WITHIN THE PLAN AREA	Proposed Project = PS Alt. 2 = PS	HYD-2: Prior to any modification of the existing FEMA mapped floodplain in the Morrison Creek and Elder Creek watersheds in the Plan Area, the Project Applicant shall obtain approval of a Conditional Letter of Map Revision (CLOMR) from FEMA. In addition, the Project Applicant shall provide in-kind replacement for any loss in flood storage capacity resulting from floodplain modifications.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: CONTRIBUTE TO FLOODING OF ADJACENT PARCELS	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: CONTRIBUTE TO FLOODING OF BEACH STONE LAKES	Proposed Project = S Alt. 2 = S	HYD-3: The Project Applicant shall mitigate 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	Proposed Project = SU Alt. 2 = SU

		facilities offsite, or other regional drainage solutions as determined by the County Department of Water Resources.	
IMPACT: RELEASE OF POLLUTANTS ASSOCIATED WITH FLOODING DUE TO DAM OR LEVEE FAILURE	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: POTENTIAL FOR FLOODING DUE TO CLIMATE CHANGE		HYD-4: 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 larger and additional culverts at roadway crossings and 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.	
LAND USE, POPULATION, AND HOUSING			
IMPACT: CONFLICT WITH SACRAMENTO COUNTY'S LAND USE PLANS	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: CONFLICT WITH SACRAMENTO COUNTY'S	Proposed Project = LTS	No mitigation is required.	Proposed Project = LTS

URBAN POLICY AREA/GENERAL PLAN GROWTH MANAGEMENT POLICY	Alt. 2 = LTS		Alt. 2 = LTS
IMPACT: CONFLICT WITH SACOG BLUEPRINT AND MTP/SCS	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
NOISE			
IMPACT: CONSTRUCTION NOISE THAT EXCEEDS COUNTY STANDARDS	Proposed Project = PS Alt. 2 = 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 8:00 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. 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 and Sacramento County. 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	Proposed Project = SU Alt. 2 = SU

		• 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 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. • No pile driving activity shall occur in the between 8:00 p.m. and 6:00 a.m. on Monday through Friday, and between 8:00 p.m. and 7:00 a.m. on Saturday and Sunday. • 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 and be designed to result in a 10-dBA reduction at the sensitive receptor location.	
IMPACT: GENERATE CONSTRUCTION VIBRATION	Proposed Project = PS Alt. 2 = PS	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-	Proposed Project = LTS Alt. 2 = LTS

		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	Proposed Project = S Alt. 2 = LTS	NOI-3: At the time of roadway improvements associated with the Project or Alternative 2, or implementation of the transportation mitigation strategy, install outdoor sound barriers at residential land uses along Excelsior Road between Jackson Road and Elder Creek Road to reduce increases in traffic noise levels associated with those improvements. The sound barriers must be constructed of solid material (e.g., brick, concrete) and designed to reduce noise by at least 5 dB. All barriers shall blend into the overall landscape and have an aesthetically pleasing appearance that	Proposed Project = SU Alt. 2 = LTS

		agrees with the color and rural character of the houses and the general area, and not become the dominant visual element of the community. NOI-4: Use rubberized hot-mix asphalt along the affected roadway (Excelsior Road between Jackson Road and Elder Creek Road) either (a) at the time the next repaving of this roadway segment occurs or, (b) during any roadway widening project that would occur on this roadway segment. Pave 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.	
IMPACT: SUBSTANTIAL INCREASE IN EXISTING AMBIENT NOISE LEVELS	Proposed Project = PS Alt. 2 = PS	NOI-8: At the time of roadway improvements associated with the Project or Alternative 2, or implementation of the transportation mitigation strategy, outdoor sound barriers shall be installed along roadway segments demonstrated to result in a substantial noise level increase as indicated in Table NOI-15 for the Project and Table NOI-16 for Alternative 2. 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 would be 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. NOI-9: Use rubberized hot-mix asphalt along the affected roadway (Excelsior Road between Jackson Road and Elder Creek Road) either (a) at the time that the next repaving of this roadway segment occurs, (b) during any roadway widening project that would occur on this roadway segment. If option (c) is chosen, the Project Applicant shall conduct a traffic noise analysis every 2 years after Project approval to determine whether the Projects contribution to roadway volumes results in traffic	Proposed Project = SU Alt. 2 = SU

		noise levels along this roadway segment exceeding 65 dB Ldn. Pave 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.	
PUBLIC SERVICES			
IMPACT: RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE PROVISION OF FIRE PROTECTION AND EMERGENCY SERVICES	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: IMPAIR EMERGENCY RESPONSE	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE PROVISION OF LAW ENFORCEMENT	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE PROVISION OF SCHOOLS	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS

IMPACT: RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE PROVISION OF PARKS AND RECREATION SERVICES	Proposed Project = PS Alt. 2 = LTS	PS-1: At the time a small lot tentative map is submitted to the County, the developer of the property shall demonstrate that either (1) park acreage to meet the individual parkland requirements pursuant to Title 22 of the Sacramento County Code has been provided within the mapped area, or (2) in-lieu fees will be paid in an amount equivalent to any shortfalls in parkland dedication. Appropriate parkland dedication and/or adequacy of fees shall be verified by CRPD prior to the County's approval of the small lot tentative map. This requirement shall be met for all small lot tentative maps, including those located in portions of the Plan Area that do not include planned park facilities per the Specific Plan.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE PROVISION OF LIBRARIES	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
WATER SUPPLY			
IMPACT: ENVIRONMENTAL EFFECTS DUE TO THE CONSTRUCTION OF NEW OR THE EXPANSION OF EXISTING WATER FACILITIES	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: RESULT IN DEMAND FOR WATER THAT CANNOT BE MET BY EXISTING OR REASONABLY FORESEEABLE FUTURE SERVICE CAPACITY	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: CONTRIBUTE TO GROUNDWATER PUMPING SUCH THAT THE AVERAGE ANNUAL SUSTAINABLE YIELD FOR THE CENTRAL SACRAMENTO GROUNDWATER BASIN IS EXCEEDED	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS

IMPACT: INTERFERE SUBSTANTIALLY WITH GROUNDWATER RECHARGE	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
WASTEWATER AND SOLID UTILITIES			
IMPACT: ADVERSE EFFECTS ASSOCIATED WITH CONSTRUCTION OF WASTEWATER TREATMENT AND DISPOSAL INFRASTRUCTURE	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: EXCEED THE CAPACITY OF THE WASTEWATER TREATMENT PROVIDER	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: SOLID WASTE SERVICES AND LANDFILL CAPACITY	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS
TRAFFIC AND CIRCULATION			
IMPACT: IMPACTS TO ROADWAY SEGMENT OPERATIONS	Proposed Project = S Alt. 2 = S	TR-1: Jackson Corridor Transportation Mitigation Strategy Participation The Project Applicant 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) and shown in Table TC-23 and Table TC-25 for the Proposed Project and Alternative 2, respectfully. The Project Applicant shall enter into an agreement at the time of Project approval to use the Tool to identify improvements for each phase or development increment of the Project. The project Applicant shall also agree that required improvements will be constructed concurrent with each phase. For subsequent projects or phases with less than 300 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	Proposed Project = SU Alt. 2 = SU

		phases with 300 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 Project Applicant shall, at the time of Project approval, enter into an agreement acknowledging 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. TR-3: Roadway Segment Mitigation The Project Applicant shall implement the set of improvements assigned to the project by the Tool (Mitigation Measure TR-1). Where feasible, the number of roadway lanes would be 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.	
IMPACT: IMPACTS TO INTERSECTION OPERATIONS	Proposed Project = S Alt. 2 = S	TR-4: Intersection Operations Impacts The Project Applicant shall implement the set of intersection improvements assigned to the project by the Tool (Mitigation Measure TR-1) and shown in Table TC-27 and Table TC-29 for the Proposed Project and Alternative 2, respectfully. Where feasible, the number of roadway lanes 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 would propose alternative mitigation measures. These generally include providing additional turn lanes, carrying an additional through lane past the intersection, or designating the intersection as a High Capacity Intersection.	Proposed Project = SU Alt. 2 = SU
IMPACT: FREEWAY FACILITY IMPACTS	Proposed Project = S	TR-5: Freeway Capacity Improvements • To minimize to westbound US 50 weave between Watt Avenue and Howe Avenue, the Project Applicant or subsequent developer(s) shall	Proposed Project = SU

	Alt. 2 = S	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 or subsequent developer(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). 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.	Alt. 2 = SU
IMPACT: BICYCLE AND PEDESTRIAN IMPACTS	Proposed Project = PS Alt. 2 = PS	TR-6: Bicycle and Pedestrian Improvements Before approval of any tentative map, the Project Applicant or subsequent developer(s) shall coordinate with Sacramento County to identify the necessary on- and offsite pedestrian and bicycle facilities to serve the	Proposed Project = LTS Alt. 2 = LTS

		individual project and which would ensure bicycle and pedestrian safety. These facilities 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.	
IMPACT: TRANSIT IMPACTS	Proposed Project = LTS Alt. 2 = LTS	TR-7: 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.	Proposed Project = LTS Alt. 2 = LTS
IMPACT: ROADWAY FUNCTIONALITY IMPACTS	Proposed Project = S Alt. 2 = S	TR-8: Roadway Functionality Improvements The Project Applicant shall implement Mitigation Measure TR-1 and TR-2 and the associated functionality improvements shown in Table TC-37 and Table TC-39 for the Proposed Project and Alternative 2, respectively. The Project 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 would include widening the deficient rural roadway segments to County standards. 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.	Proposed Project = SU Alt. 2 = SU
IMPACT: EMERGENCY ACCESS AND HAZARDOUS DESIGN FEATURE IMPACTS	Proposed Project = LTS Alt. 2 = LTS	No mitigation is required.	Proposed Project = LTS Alt. 2 = LTS

MITIGATION MONITORING AND REPORTING PROGRAM

It shall be the responsibility of the Project Applicant 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 Project Applicant 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 Project Applicant 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 CEQA Guidelines, or can be discerned from the 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 2030 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 that exist within the area could be directly or indirectly affected by the 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 effects.

Mitigation. Mitigation measures are revisions to the Project that would minimize, avoid, or reduce a significant effect on the environment. CEQA Guidelines Section15370 identifies the following five types of mitigation:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the impacted environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

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1 INTRODUCTION

SUMMARY OF THE PROPOSED PROJECT

The Jackson Township Specific Plan (hereinafter referred to as the Project) is a specific plan for the development of 1,391 acres in unincorporated Sacramento County (hereinafter referred to as the Plan Area). The Project includes a land use plan that would provide for a range of different uses, including a variety of residential, public, park, open space, and employment-generating uses such as office, commercial, and retail. The Project is intended to provide for a diverse community that can accommodate a wide range of residents in various housing types in proximity to existing and planned job centers, including new jobs created within the Plan Area. The Plan Area has been designed to create two distinctive "hubs" that would serve as the focus of the community and allow for people to live, work, shop, and recreate in the same place: a Town Center along Jackson Road (also referred to as Jackson Highway) and a smaller village along Excelsior Road at the northwest corner of the Plan Area.

Another key feature of the Plan Area is a large, centrally located greenway/drainage corridor with a trail on one side that has been designed to provide easy, non-vehicular linkages from one end of the community to the other. Most residential units within the Plan Area would be located within 0.25 mile of an open space area, park, or linear parkway; and within 0.5 mile of retail and employment land uses. In addition, much of the eastern portion and the area north of Kiefer Boulevard in the Plan Area would be occupied by a wetland and habitat preserve. The proposed preserve location is part of a regional wetland and habitat conservation strategy that was developed by the County as part of the South Sacramento Habitat Conservation Plan process.

ENVIRONMENTAL IMPACT REPORT SCOPE AND PROCESS

PURPOSE OF THIS ENVIRONMENTAL IMPACT REPORT

This environmental impact report (EIR) has been prepared in compliance with the California Environmental Quality Act (CEQA) to evaluate the potential environmental impacts associated with the development and implementation of the Jackson Township Specific Plan (herein after referred to as the Project). An EIR discloses known or possible impacts on the environment that may result from a project and measures to mitigate those impacts to decision makers (e.g., the Sacramento County Board of Supervisors), public agencies, and the general public. The intent of the EIR is to provide objective information to allow the Sacramento County Board of Supervisors to make an informed decision when considering whether to approve or deny the Project. The EIR does not comment on the merits of the Project and does not make a recommendation for or against its approval.

Lead, Responsible, and Trustee Agencies

Sacramento County is the Lead Agency under CEQA for this EIR because it has discretionary authority to determine whether or how to approve the Project. Responsible Agencies are other agencies that are responsible for carrying out or implementing a specific component of the specific plan or for approving a project (such as an annexation) that implements the goals and policies of the specific plan. Based on the potential effects known at this time, responsible agencies may include: U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, the California Department of Fish and Wildlife, the California Regional Water Quality Control Board, Pacific Gas and Electric Company, Sacramento Municipal Utility District, Sacramento County Water Authority, Cordova Recreation and Park District, Sacramento Metropolitan Air Quality Management District, and the Elk Grove Unified School District. Trustee agencies have jurisdiction over certain resources held in trust for the people of California, but do not have a legal authority over approving or carrying out the project.

Type of Environmental Impact Report

This EIR fulfills the requirements for a Program EIR. Although the legally required contents of a Program EIR are the same as those of a Project EIR, Program EIRs typically cover broad programs or large projects, such as a specific plan, and contain a more general discussion of impacts, alternatives, and mitigation measures than a Project EIR. As provided in Section 15168 of the State CEQA Guidelines, a Program EIR may be prepared on a series of actions that could be characterized as one large project. Impacts may be generally characterized, and mitigation measures may include programs and performance standards that address the impacts. Use of a Program EIR provides the County (as Lead Agency) with the opportunity to consider broad policy alternatives and program-wide mitigation measures and provides the County with greater flexibility to address environmental issues and/or cumulative impacts on a comprehensive basis. Agencies generally prepare Program EIRs for programs or a series of related actions that are linked geographically, are logical parts of a chain of contemplated events, rules, regulations, or plans that govern the conduct of a continuing program, or are individual activities carried out under the same authority and having generally similar environmental effects that can be mitigated in similar ways. By its nature, a Program EIR considers the overall effects associated with implementing a program and does not, and is not intended to, examine individual projects that may be implemented pursuant to the specific plan.

Once a Program EIR has been prepared, subsequent activities within the program must be evaluated to determine if additional CEQA documentation is required to address the significant impacts of such activities. Subsequent activities could be found to be within the Program EIR scope and additional environmental documents may not be required (*CEQA Guidelines* Section 15168(c)). When a Program EIR is relied on for a subsequent activity, the Lead Agency must incorporate feasible mitigation measures and alternatives developed in the Program EIR into the subsequent activities (*CEQA Guidelines* Section 15168(c)(3)). If a subsequent activity could result in effects not within the scope of the Program EIR, including new or more severe significant impacts than identified in the Program EIR, the Lead Agency must prepare a Negative

Declaration, Mitigated Negative Declaration, or a project-level subsequent or supplemental EIR. The County's Initial Study Checklist is used to determine if a subsequent activity is within the scope of the Program EIR and if not, what type of CEQA document is needed to address its effects.

The process described above, initiated with preparation of an initial study, provides a road map for consideration of subsequent projects and the associated CEQA documentation. Future projects within the specific plan area that are consistent with the approved specific plan and the analysis found in the Program EIR do not require additional CEQA review. If a future project within the specific plan was not considered in this EIR, is inconsistent with the specific plan, or may result in additional or more severe impacts or require more mitigation than is identified in this EIR, additional CEQA analysis will be required.

Scope of this Environmental Impact Report

The County prepared an Initial Study (provided in Appendix INT-1) to assist in identifying the scope of issues considered in the EIR. As documented in the Initial Study, the Project would result in no impact or a less than significant impact to the following resources; these do not warrant additional analysis in the EIR.

- Land Use: Physically disrupt or divide an established community.
- Population and Housing: Displace substantial amounts of existing housing.
- Airports: Result in a change in air traffic patterns.
- Geology and Soils: Have soils incapable of supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available.
- Geology and Soils: Directly or indirectly destroy a unique paleontological resource or site.

Other impacts were also determined to not occur (no impact) or be less than significant, but are nonetheless included in the analysis of the EIR to provide clarification and a more in-depth analysis than is presented in the Initial Study.

Public and Environmental Review Process

A Notice of Preparation (NOP) of an EIR for the Project was released for a 30-day review by public agencies and the general public on July 19, 2013. A public scoping meeting was held on August 29, 2013. The NOP and copies of the comments received in response to the NOP are provided in Appendix INT-2. All NOP comments were considered by the EIR preparers. The introduction of each environmental resource area chapter (Chapters 4 through 20) identifies NOP comment topics addressed in the respective chapter.

Upon completion of this Draft EIR, Sacramento County filed a Notice of Completion (NOC) with the Governor's Office of Planning and Research to begin the public review period (Public Resources Code Section 21161). Concurrent with the NOC, this Draft EIR has been distributed to responsible and trustee agencies, other affected agencies, and interested parties in accordance with Public Resources Code Section 21092(b)(3).

During the 45-day public review period, the Draft EIR is available for review between 8:30 am and 4:30 pm Monday through Friday at the County Office of Planning and Environmental Review located at:

827 7th Street, Room 225
Sacramento, CA 95814

In addition, a hardcopy of the Draft EIR can be reviewed at the following Sacramento Public Library locations:

Central Library
828 I Street
Sacramento, CA 95814

Rancho Cordova Library Branch
9545 Folsom Boulevard
Sacramento, CA 95827

The Draft EIR is also available online at:
http://www.per.saccounty.net/PlansandProjectsIn-Progress/Pages/JacksonTownshipSpecificPlan.aspx.

All agencies, organizations, and interested parties, have the opportunity to comment on the Draft EIR during the public review period.

Written comments on this Draft EIR should be addressed to:

Jessica Lynch, Senior Planner
Sacramento County Office of Planning and Environmental Review
827 7th Street, Room 225
Sacramento, CA 95814

Written comments may also be submitted to CEQA@saccounty.net.

Following the close of the public comment period, the County will prepare a Final EIR, which will include written responses to comments on the Draft EIR and will identify any changes to the EIR that may be required to address comments or new information, if applicable. Once the Final EIR is completed, the Board of Supervisors must certify the EIR and adopt Findings of Fact before it can approve the Project. If the EIR finds that the Project would result in any significant and unavoidable impacts, then the Board of Supervisors must also adopt a Statement of Overriding Considerations.

Intended Uses of the EIR

The Sacramento County Board of Supervisors will use the information contained in this EIR to evaluate the Project and render a decision to approve or deny the requested entitlements (as described further in Chapter 2, “Project Description”).

Responsible agencies may also use the EIR for the following, if not additional, planning or permitting purposes:

- Federal Clean Water Act Section 404 Permit (U.S. Army Corps of Engineers)

- Federal Endangered Species Act Section 7 Consultation (U.S. Fish and Wildlife Service)
- Section 401 Water Quality Certification (Regional Water Quality Control Board–Central Valley Region)
- California Endangered Species Act Incidental Take Permit (California Department of Fish and Wildlife)
- Streambed Alteration Agreement (California Department of Fish and Wildlife)
- Section 402 National Pollutant Discharge Elimination System Permit (Regional Water Quality Control Board–Central Valley Region)
- Annexations (Local Agency Formation Commission)
- Electric utilities services, utilities, and future facilities (Sacramento Municipal Utility District)
- Sacramento Metropolitan Air Quality District permits
- Future actions by the California Department of Transportation

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2 PROJECT DESCRIPTION

INTRODUCTION

The Jackson Township Specific Plan (hereinafter referred to as the Project) is a master plan for the development of 1,391 acres in unincorporated Sacramento County (hereinafter referred to as the Plan Area). The Project includes a land use plan that would provide for a range of different uses, including a variety of residential, public, park, open space, and employment-generating uses such as office, commercial, and retail.

The Project Applicant is Tsakopoulos Investments, which owns a majority of the acreage (64 percent) included in the Plan Area. Sacramento County is the Lead Agency for the purpose of this Environmental Impact Report (EIR).

PROJECT SETTING

PROJECT LOCATION

The Plan Area is located in an unincorporated area southwest of the City of Rancho Cordova, east of the City of Sacramento, and north of the City of Elk Grove. The Plan Area is also southeast of, but not directly adjacent to, Mather Airport (Plate PD-1).

The Plan Area is bound by Excelsior Road to the west and Jackson Road (also referred to as Jackson Highway) to the south. The eastern boundary follows parcel lines roughly 0.5 mile east of Eagles Nest Road. The northern boundary also follows parcel lines and is bounded by Kiefer Boulevard in the west and extends north of the planned extension of Kiefer Boulevard in the east (Plate PD-2).

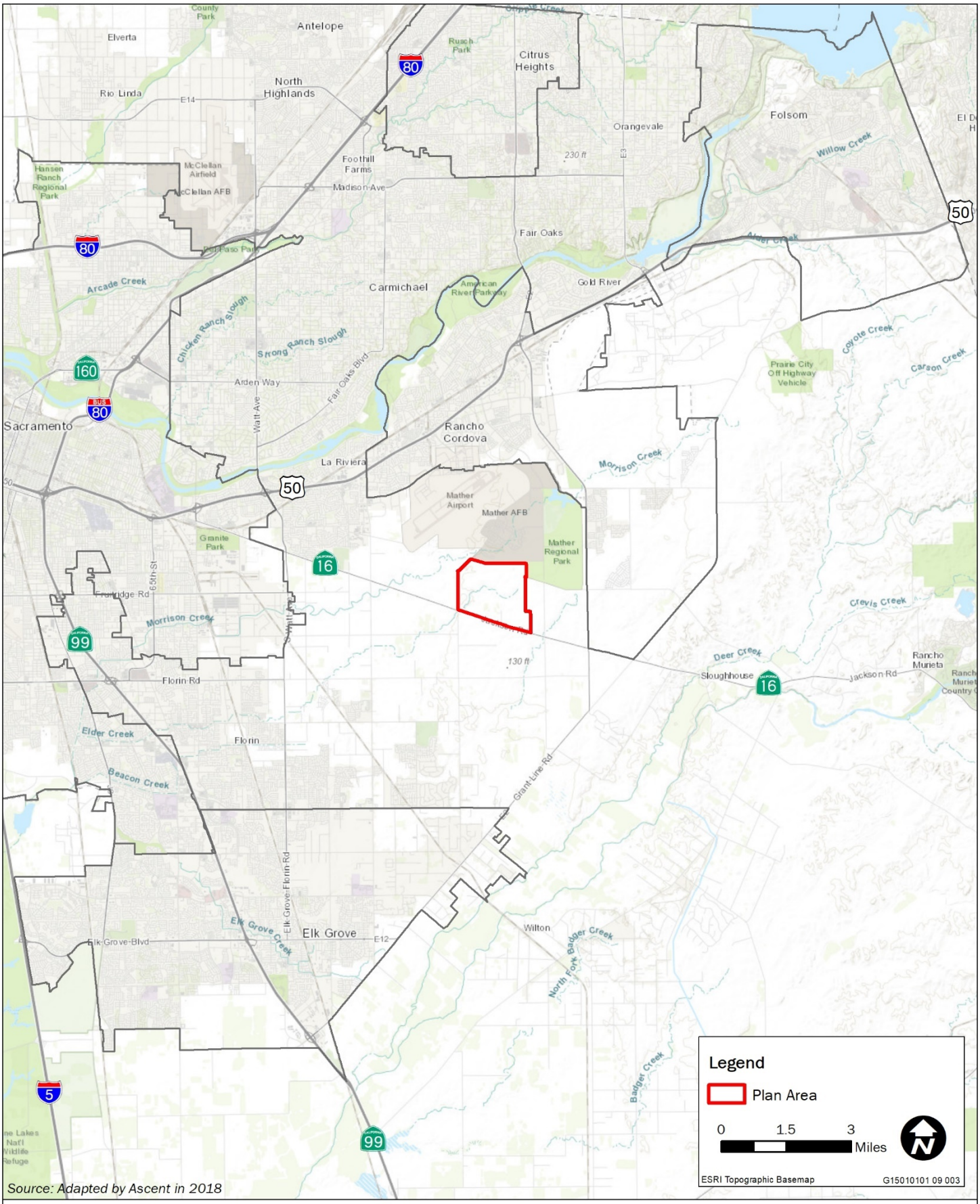
The Mather Field Specific Plan Area is located in the unincorporated area north of the Plan Area. As discussed further below, the proposed NewBridge Specific Plan area is immediately east of the Plan Area and the proposed West Jackson Highway Master Plan area is located immediately west of the Plan Area (Plate PD-2).

The majority of the Plan Area is located within the Vineyard Community. However, the northeast corner of the Plan Area that would extend north of the future alignment of Kiefer Boulevard is located within the Cordova Community (Plate PD-3). The Plan Area is located outside, but immediately adjacent to, the existing Urban Policy Area (UPA) and is within the Urban Services Boundary (USB).

EXISTING CONDITIONS

PARCELS IN THE PLAN AREA

The Plan Area is made up of a total of 39 parcels. Of these, the Project Applicant owns and/or controls 13 parcels totaling approximately 883 acres, or 64 percent of the Plan Area (Plate PD-4). Properties not owned by the Project Applicant, hereinafter referred to as non-participating properties, are included in the proposed specific plan per Sacramento County 2030 General Plan (2030 General Plan) requirements and would be the subject of future entitlement applications for rezoning consistent with the County's adopted Land Use Plan.



Source: Adapted by Ascent in 2018

Plate PD-1: Regional Location

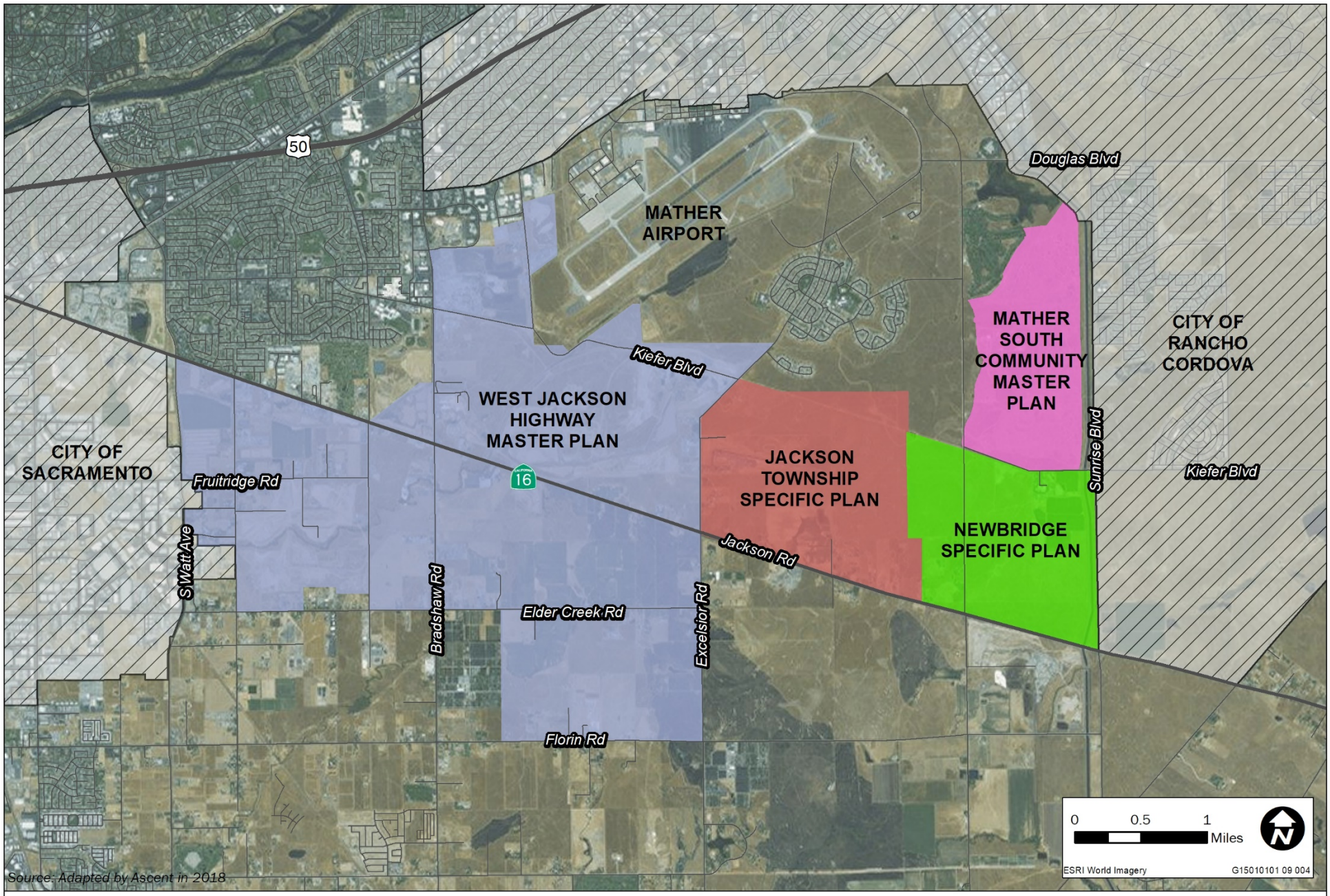
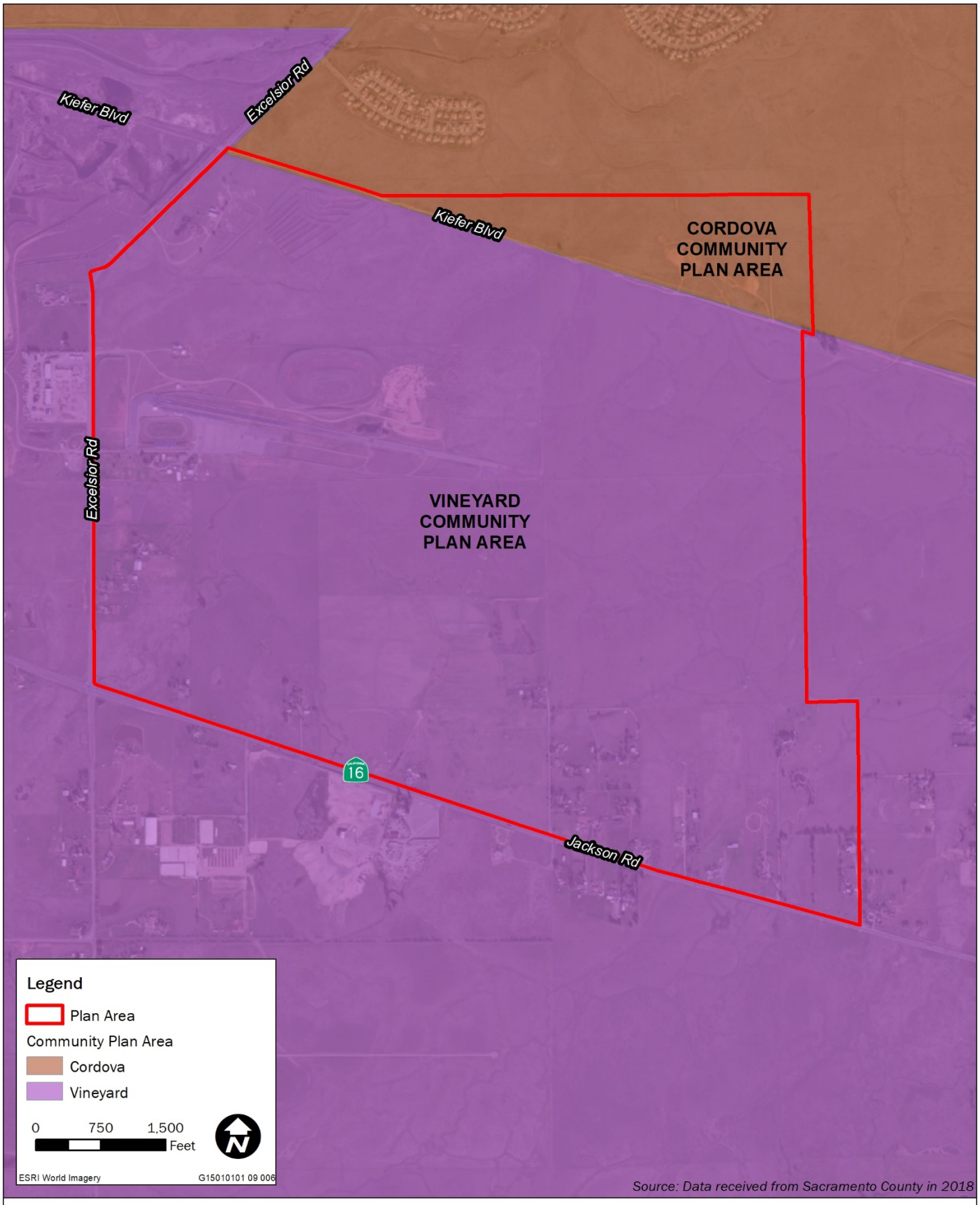


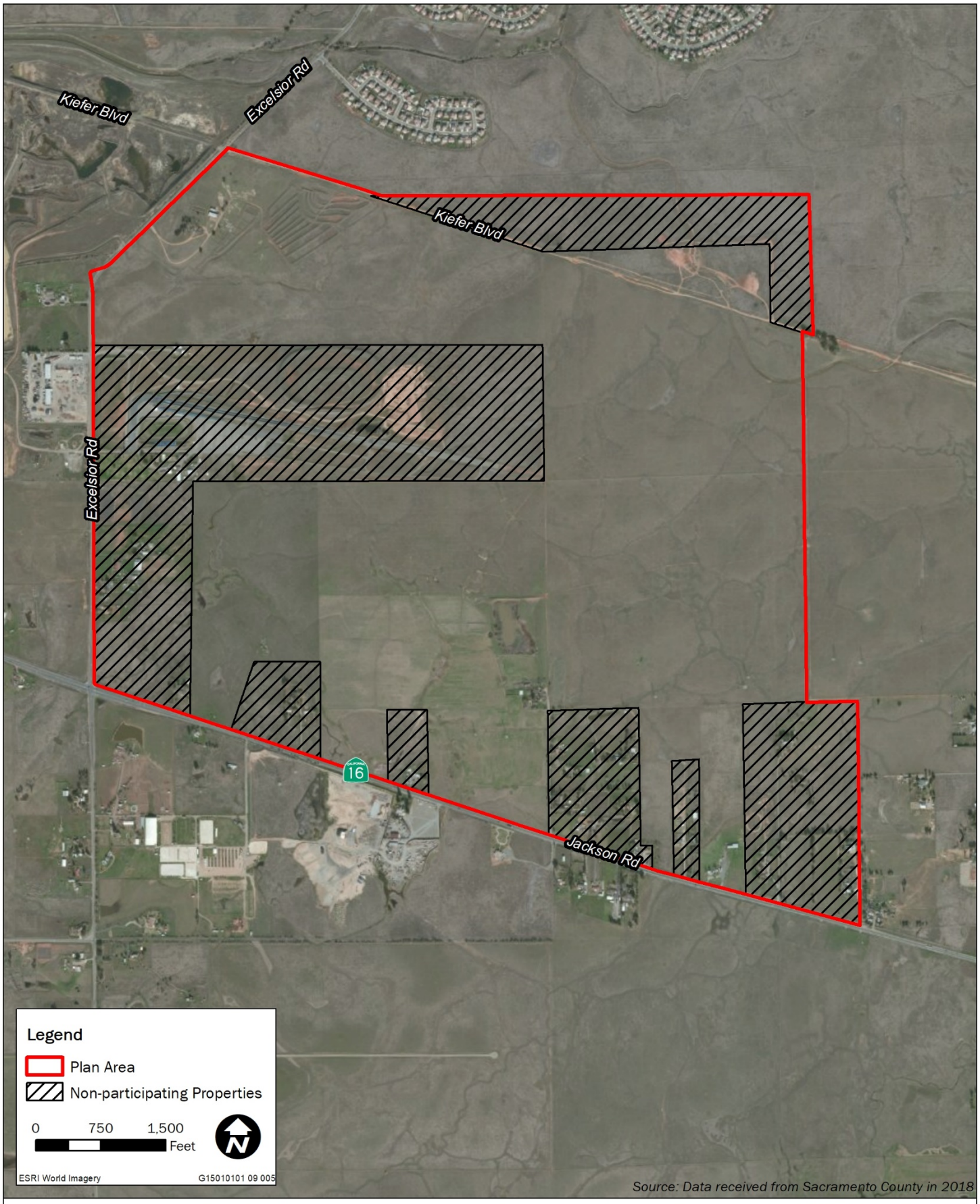
Plate PD-2: Plan Area Vicinity



Source: Data received from Sacramento County in 2018

Plate PD-3: Community Plan Areas

ASCENT ENVIRONMENTAL



Source: Data received from Sacramento County in 2018

Plate PD-4: Plan Area Aerial - Participating and Non-Participating Properties

ASCENT ENVIRONMENTAL

The Assessor's Parcel Numbers (APNs) included within the Plan Area are listed in Table PD-1, below. Bold text indicates parcels owned and/or controlled by the Project Applicant.

Table PD-1: Area Parcel Numbers

067-0050-002	067-0060-007	067-0080-032
067-0050-004	067-0060-008	067-0080-033
067-0050-005	067-0060-010	067-0080-039
067-0050-019	067-0060-011	**067-0080-040**
067-0050-020	067-0060-012	067-0080-042
067-0050-021	067-0060-013	067-0080-045
067-0050-022	067-0060-014	067-0080-048
067-0050-028	067-0060-016	067-0080-049
067-0050-029	067-0070-002	**067-0080-050**
067-0050-045	**067-0080-004**	**067-0080-051**
067-0050-047	067-0080-023	067-0080-057
067-0050-051	067-0080-028	067-0080-059
067-0050-058	067-0080-031	067-0080-061

Existing Land Uses

As shown in Plate PD-4, the Plan Area is largely undeveloped. Current land uses on the properties within the Plan Area are predominantly grazing, small ranches, and agricultural-residential homes. A portion of the Plan Area includes the Sacramento Raceway, which hosts regular stock car and drag racing events several times a month throughout the year. Operation of the raceway is not a County-permitted land use in the area, and the ongoing racing activities have been the source of several Code Enforcement actions over many years.

To the west of the Plan Area, land uses are characterized by agricultural uses, mining activities, and commercial sales of landscaping materials. Lands to the east are generally similar to the Plan Area, with grazing and agricultural-residential uses predominating. The property to the east also includes the Sacramento Rendering Company plant, a facility that accepts animal tissue, processes it, and then distributes the byproduct for use in the manufacture of other goods. Land to the north is dominated by the presence of Mather Airport and appurtenant facilities and includes the Independence at Mather residential subdivision and a wetland and nature preserve. Mather Golf Course is located further to the northeast. Properties to the south of the Plan Area are generally in agricultural or agricultural-residential use or are within a wetland preserve.

The Plan Area consists primarily of rolling terrain and grasslands, with elevations ranging from approximately 75 feet above mean sea level in the western portion of the Plan Area to 145 feet above mean sea level in the eastern portion of the Plan Area. Most of the Plan Area is grassland with interspersed wetlands, portions of which have historically been disturbed by agricultural activities. The southwestern portion of the Plan Area is within the headwaters of Elder Creek, and a small bend in Morrison Creek

runs through the northeastern corner of the Plan Area. The Plan Area is a tributary to both of these watersheds. However, the portion of the Plan Area in the Morrison Creek watershed actually drains west to a low-lying pond created from surface aggregate mining on properties to the west of Excelsior Road and does not flow directly to Morrison Creek. The majority of the Plan Area falls within the Elder Creek watershed, draining in a northeast to southwest direction. The primary discharge is through a double box culvert located at the intersection of Jackson Highway and Excelsior Road.

Existing Land Use Designations and Zoning

The Plan Area is currently designated as Extensive Industrial and General Agriculture (minimum parcel sizes of 20 acres) on the 2030 General Plan Land Use Diagram (Plate PD-5). The three parcels located north of the Kiefer Boulevard alignment are designated as Light Industrial and Industrial Reserve in the Cordova Community Plan, and the remainder of the Plan Area is designated as Permanent Agricultural (minimum parcel sizes of 80 acres), and Light Industrial in the Vineyard Community Plan (Plate PD-6).

The Plan Area is zoned Light Industrial (M-1), Agricultural 80 (AG-80), and Interim Agricultural Reserve (IR). See Plate PD-7. The M-1 zone provides for a variety of industrial uses that do not create smoke, odors, gas, dust, etc. The AG-80 zone promotes long-term agricultural use and discourages premature and unnecessary conversion of land. The IR zone is reserved for future industrial uses (Sacramento County 2015, Table 2-2). In addition, portions of the Plan Area are located within two combining zoning districts: Flood and Surface Mining. The Flood Combining Zoning District is intended to comprise all land covered by rivers, creeks, and streams, as well as land subject to flooding. Areas within the Flood Combining Zoning District are subject to special development standards. The Surface Mining Combining Zoning District is designed to protect mineral resources in the county from incompatible uses, manage mineral resources, assure access to the resources, and provide for the restoration of mined lands. Mining operations can be permitted within this district, subject to approval of a conditional use permit and reclamation plan. For further discussion of mineral resources, refer to EIR Chapter 12, “Geology, Soils, and Mineral Resources.”

Existing Infrastructure

Circulation and Transportation

As stated above, Excelsior Road and Jackson Highway make up the western and southern boundaries of the Plan Area, respectively. There is no road located along the eastern boundary of the Plan Area, though Eagles Nest Road is located 0.5 mile to the east. There is also no paved road on the northern property boundary, but the 2030 General Plan Transportation Diagram shows that Kiefer Boulevard will be extended as a 4-lane arterial through the Plan Area post 2030 (Sacramento County 2011). Currently, there is an unmaintained dirt road along the future Kiefer Boulevard alignment on County-owned right-of-way.

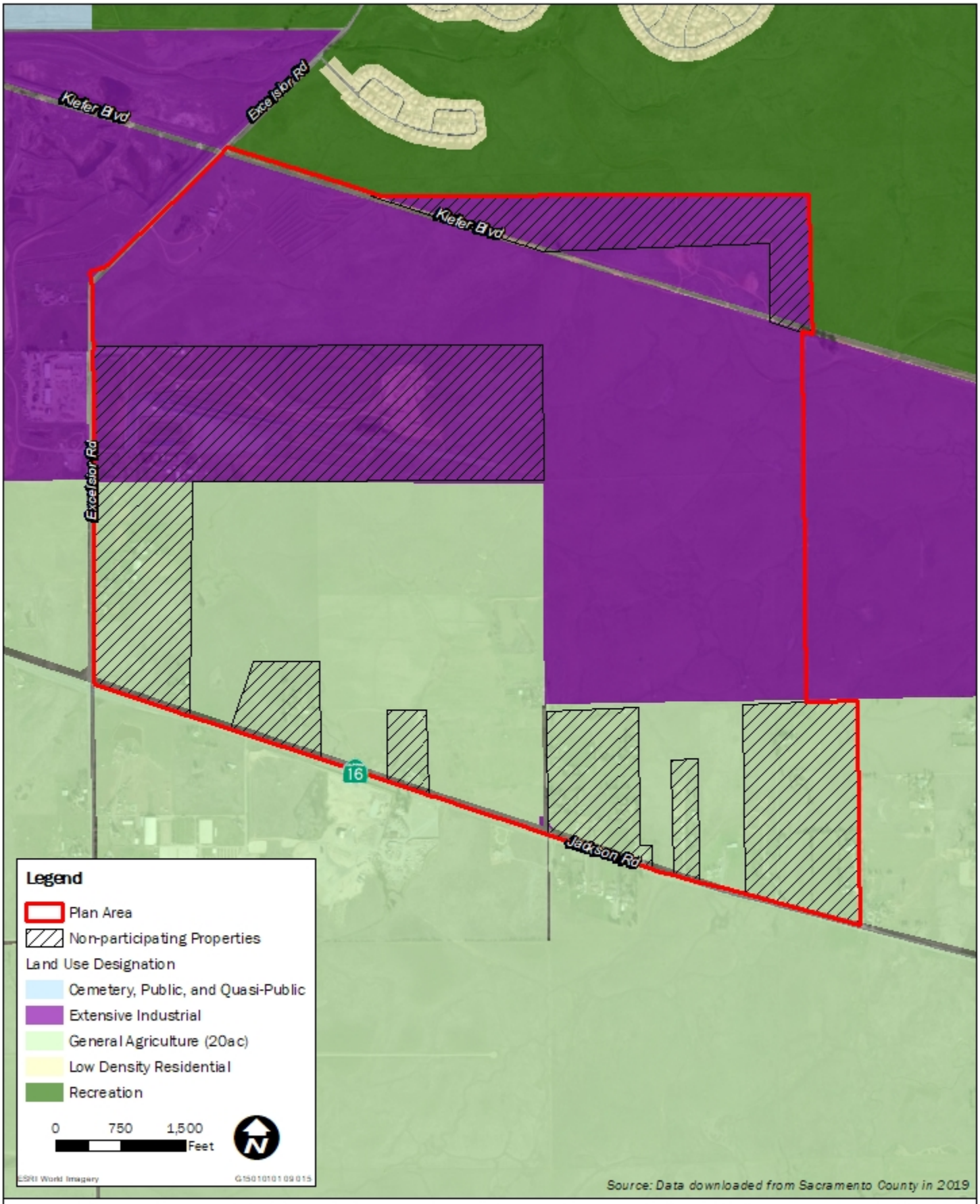


Plate PD-5: Existing General Plan Land Use Designations

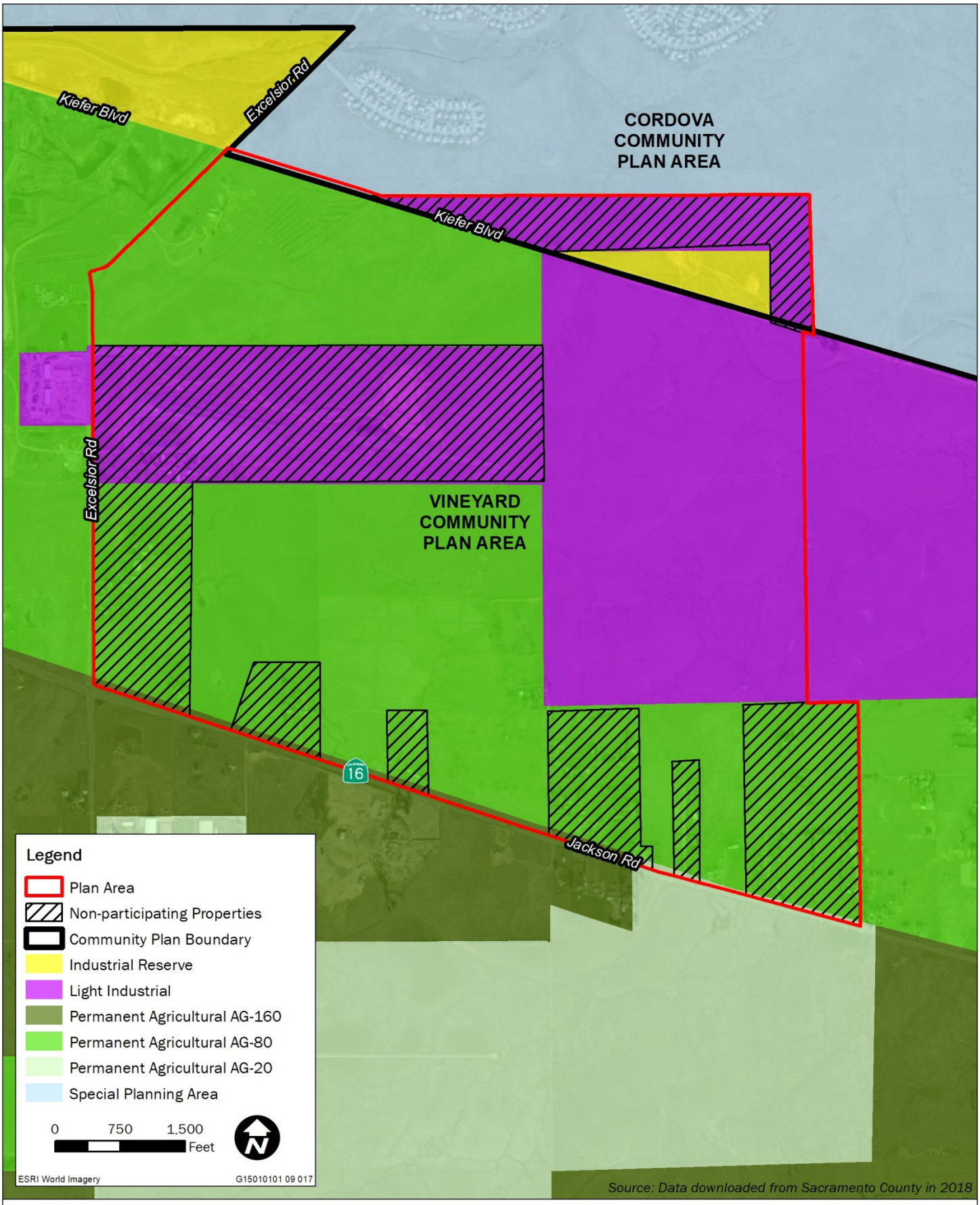


Plate PD-6: Existing Community Plan Land Use Designations

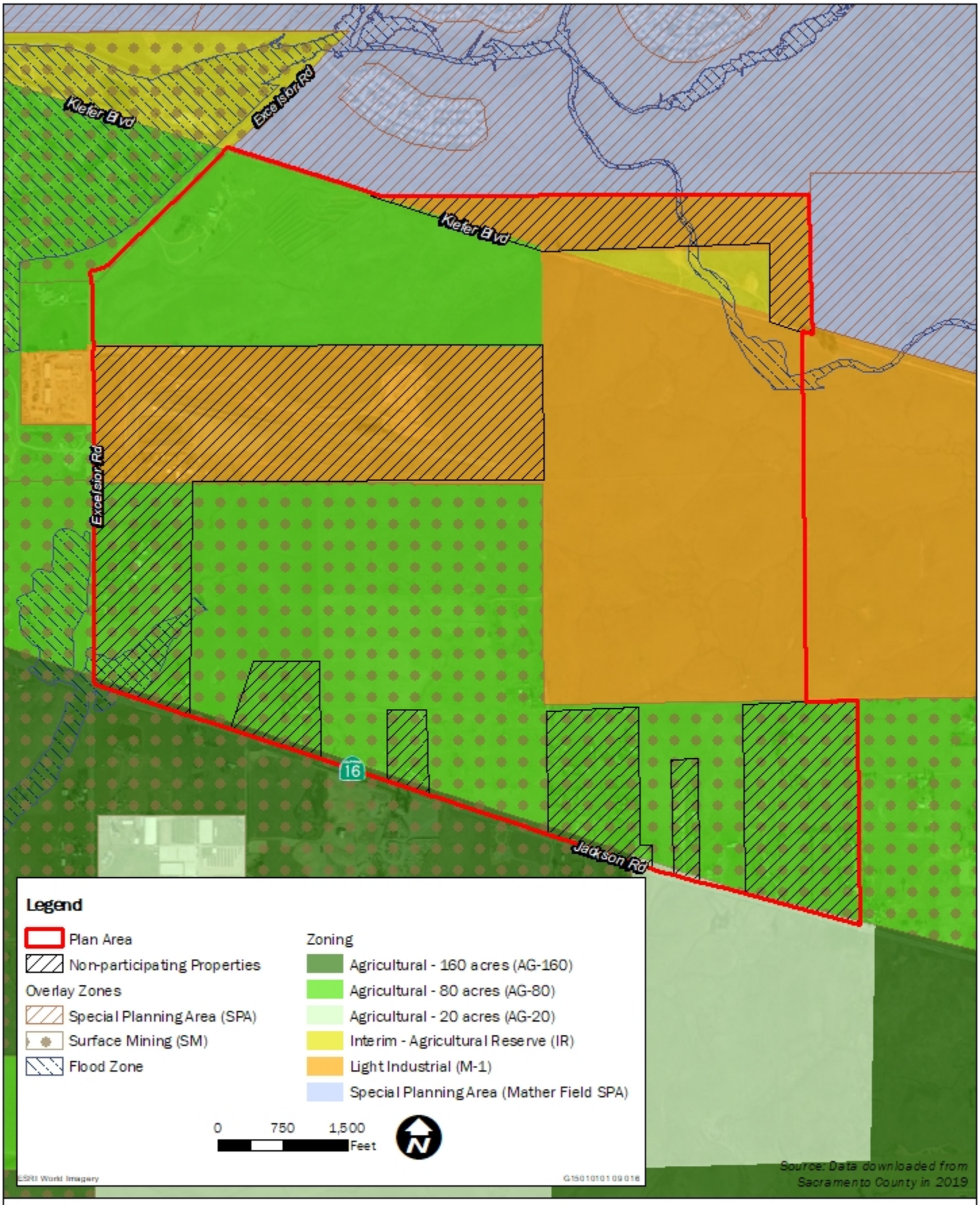


Plate PD-7: Existing Zoning

Jackson Highway is primarily a two-lane facility without a center left-turn lane where it is adjacent to the Plan Area, though it is four lanes for a short distance on either side of the intersection of Jackson Highway and Excelsior Road. Jackson Highway is currently a state highway (State Route 16) in the vicinity of the Plan Area, but the section from Watt Avenue to Grant Line Road, including the segment adjacent to the Plan Area, was authorized to be relinquished from the California Department of Transportation to Sacramento County in 2014. That relinquishment process is ongoing and expected to be completed by 2020. Excelsior Road is also a two-lane facility adjacent to the Plan Area.

UTILITIES

GAS AND ELECTRICITY

The Plan Area is within the service areas of the Pacific Gas & Electric Company (PG&E) for natural gas and the Sacramento Municipal Utility District (SMUD) for electricity. An existing 6-inch steel main gas line traverses the northern portion of the Plan Area within the Kiefer Boulevard right of way. A SMUD/PG&E transmission corridor traverses the southern portion of the Plan Area and contains four overhead transmission circuits (two of which are owned by SMUD and two are owned by PG&E). There are also 12 kilovolt SMUD distribution facilities running along Jackson Highway and Excelsior Road.

EXISTING WATER SUPPLY INFRASTRUCTURE

The Plan Area is located within Zone 40 of the North Service Area of the Sacramento County Water Agency (SCWA). Although it does not currently serve the Plan Area, SCWA does own and operate water supply infrastructure in the vicinity, including the Vineyard Surface Water Treatment Plant located off of Florin Road west of Excelsior Road, Excelsior Well Field, and the Anatolia Terminal Storage and Pumping Facilities located east of Sunrise Boulevard in the City of Rancho Cordova. These facilities are connected via transmission line, including a portion that follows Excelsior Road along the Plan Area's western boundary and through the Plan Area along the Kiefer Boulevard alignment out to Sunrise Boulevard. Individual groundwater wells currently supply water to the Plan Area.

EXISTING WASTEWATER INFRASTRUCTURE

The Plan Area is outside of the Sacramento Area Sewer District's service area. The Bradshaw Interceptor is located approximately 2 miles west of the Plan Area. There is no existing wastewater service in the Plan Area. Existing residences located within the Plan Area are served by individual septic systems.

PROJECT BACKGROUND

REGIONAL GROWTH PROJECTIONS AND PLANNING CONTEXT

County staff prepared the Jackson Highway Visioning Study for approximately 12,000 acres in central Sacramento County along Jackson Road as part of the General Plan Update process. This study was initiated in response to the Sacramento Region Blueprint, which was adopted by the Sacramento Area Council of Governments

(SACOG) in 2004. The Sacramento County 1993 General Plan had assumed the need for approximately 29,000 new residential units in the unincorporated county, but the Blueprint assumed nearly 100,000 new units, more than triple the previously assumed demand, amidst a housing boom in the region. The County began updating the General Plan in the early 2000s based on this increased growth assumption.

The Jackson Highway Visioning Study and a concurrent visioning study completed for 10,000 acres along Grant Line Road were developed as part of the General Plan Update process to provide a guide for long-term future growth, based on the Blueprint's housing demand projections. The Jackson Highway Visioning Study was completed in 2008.

In 2008, the housing boom ended and was followed by an unprecedented recession. In addition to the extreme economic fluctuations of the time, during the same period, the State adopted several sweeping regulatory changes that forced local governments to drastically change their approach to land use planning, including Assembly Bill (AB) 32 in 2006 and Senate Bill (SB) 375 in 2008. SACOG's regional growth projections were adjusted to reflect the major shifts in the economy and regulatory environment. By the time the 2030 General Plan was adopted in 2011, SACOG's growth demand projections for new housing for the unincorporated county had been reduced from nearly 100,000 to less than 50,000 during a six-year period. This resulted in the need to change the County's approach to approving new growth, which resulted in some variations from intent of the visioning studies and from the direction originally considered during the beginning of the General Plan Update process.

This revised approach to new growth areas incorporates strict criteria for growth based on smart growth principles that are intended to assist the County in meeting its obligations to reduce greenhouse gas emissions under AB 32 and SB 375. Additional information on this topic and the analysis of the Project's ability to meet the criteria can be found in Chapter 15, Land Use.

The most current SACOG growth forecast was created for the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) adopted in February 2016. This forecast uses a 2012 base year estimate with projections to 2036 for household population, housing units, and employment. These projections estimate demand for 49,665 new residential units in unincorporated Sacramento County between 2012 and 2036 (SACOG 2016). SACOG is currently in the process of updating the MTP/SCS for 2020.

Douglas Road Extension

The Sacramento County Department of Transportation (DOT) is currently scoping the Douglas Road Extension. This project would extend Douglas Road as an arterial roadway, from Mather Boulevard to Excelsior Road. Construction dates and costs have not been established (Sacramento County DOT 2018).

This project is a County-initiated transportation improvement that is separate from the Jackson Township Specific Plan, and its potential impacts are not analyzed in this EIR. However, because the Douglas Road Extension would intersect with Excelsior Road at the northwest corner of the Plan Area, it may affect future conditions in the Plan Area.

SOUTH SACRAMENTO HABITAT CONSERVATION PLAN

The South Sacramento Habitat Conservation Plan (SSHCP) was developed through an iterative process that began in 1992. The current conservation plan concept was initiated in 2012. The SSHCP was adopted by the partner agencies, and permit preparation is currently underway.

The Plan Area is within the Urban Development Area identified in the SSHCP, and the Project is included as a covered activity (under the category "Master Plans Known at the Time of SSHCP Preparation"). Covered Activities provide for the expansion of urbanizing areas within the county's existing USB. Within the Urban Development Area, the SSHCP identifies a system of preserves designed to protect high quality habitat and provide linked habitat corridors. One such preserve is identified in the eastern portion of the Plan Area (Plate PD-8).

In anticipation of SSHCP adoption, the County requested that the Applicant develop a Project Alternative consistent with SSHCP requirements, including compliance with the Covered Activity descriptions and the SSHCP Avoidance and Minimization Measures listed in the SSHCP. In response, the Applicant developed Alternatives 2 and 2A, which are discussed in Chapter 3, "Alternatives," of this EIR.

CONCURRENT PLANNING PROCESSES

The Project is one of four major planning applications currently in process for future urban growth areas located along the Jackson Highway corridor, which are collectively referred to as the Jackson Highway Master Plans. The other three plans are the West Jackson Highway Master Plan, the NewBridge Specific Plan, and the Mather South Community Master Plan. The West Jackson Highway Master Plan area is located just west of the Plan Area and includes approximately 5,900 acres on both the north and south sides of Jackson Highway. The NewBridge Specific Plan area is located just east of the Plan Area and includes approximately 1,095 acres north of Jackson Highway. The Mather South Community Master Plan includes approximately 884 acres northeast of the Plan Area (refer to Plate PD-2).

In total, the four master plans cover approximately 9,250 acres and 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, and mixed- use space; 12 schools; approximately 322 acres of developed parkland; and approximately 2,390 acres of designated open space. The master plans were initiated at the request of each of the project applicants in response to long term growth projections and, if approved, are anticipated to build out over several decades. Economic and market conditions would determine when future projects are built. Applications for each of the Jackson Highway Master Plans are in various stages of processing by the County. These master plans are considered in the cumulative context and infrastructure planning for the Project. At this time, it is unknown when any of the master plans will be presented at a hearing to the Board of Supervisors for consideration and potential approval.

Application and Project Initiation

The Project Applicant began informal coordination with County staff prior to submittal of a project application. Initially the Project was referred to as Excelsior Estates and had a different project boundary. Additional properties were added to the Plan Area through several years of planning to ensure an orderly growth pattern along the Jackson Highway corridor.

In May of 2011, the Sacramento County Board of Supervisors agreed to allow the initiation of a pre-application process to develop a new specific plan for the Plan Area. The Project Applicant collaborated with County staff for approximately one year on design before filing a formal application in April of 2012. The specific plan process was initiated in June of 2012 following the Sacramento County Board of Supervisors' review and acceptance of the application to expand the UPA pursuant to 2030 General Plan Policy LU-119.

CEQA Noticing and Public Involvement

A Notice of Preparation (NOP) for this EIR was published on August 5, 2013. An agency scoping meeting was held at the California Office of Planning and Research on August 28, 2013, and a public scoping meeting was held at the Sacramento County University of California Cooperative Extension on August 29, 2013. The NOP was also heard as an informational item before the Vineyard Community Planning Advisory Council (CPAC) and the Cordova CPAC on August 6 and August 15, 2013, respectively. Comments on the NOP are summarized in the applicable technical chapters of this EIR.

In 2013 and 2016, the County held four joint Vineyard and Cordova CPAC workshops for the Jackson Highway Master Plans that covered: the planning and environmental review process for master plans; transportation planning in the area; water supply, sewer, and drainage in the area; and infrastructure financing.

Source: Figure provided by County of Sacramento in 2019.

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Plate PD-8: SSHCP Planned Hardline Preserves

PROJECT OBJECTIVES

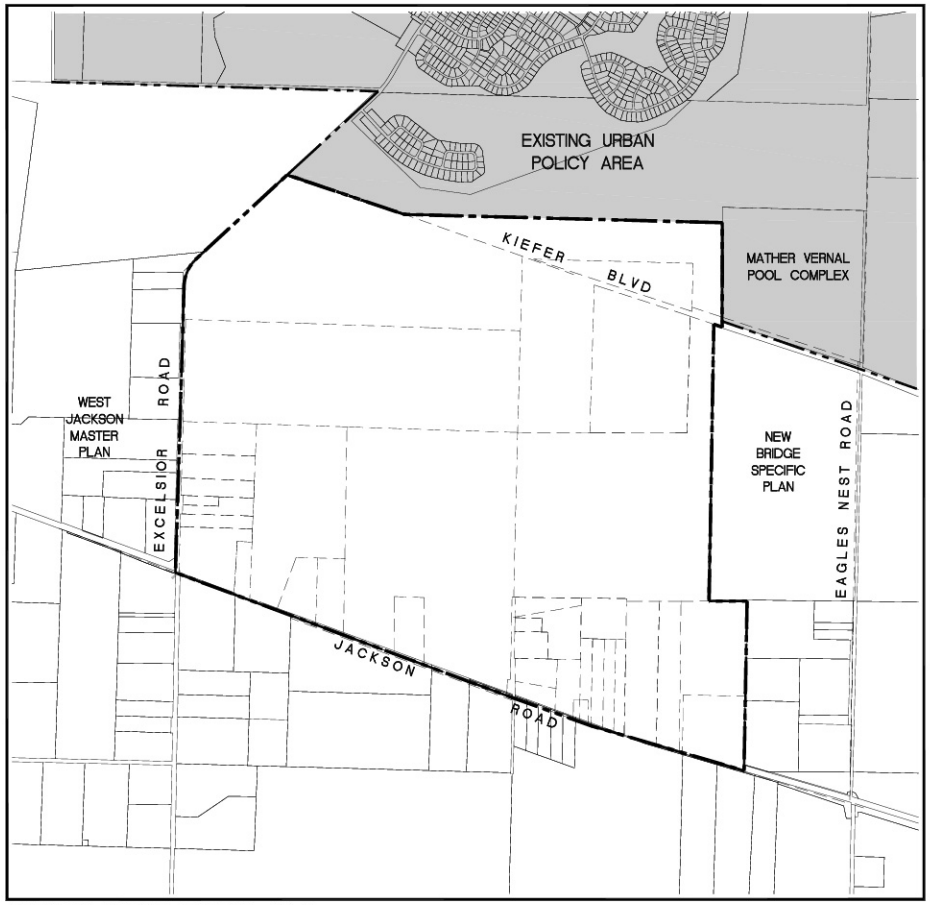
The following summarizes the Project objectives that guided the planning of the Jackson Township Specific Plan:

1. Develop an economically viable mixed-use project in close proximity to the urban core.
2. Develop a marketable project which minimizes greenhouse gas emissions.
3. Develop an economically-stable community where property values are retained over time.
4. Develop a project containing a variety of housing types so as to create a demographically mixed community.
5. Develop a project which allows for easy access to green space, schools, and a town center containing various retail, dining, and other commercial services.
6. Develop a project which provides employment opportunities for workers of all income levels.
7. Develop a project which promotes a jobs-housing balance in the Jackson Highway/Mather area.
8. Develop a project which allows residents to engage in short, non-vehicle commutes.
9. Develop a project which utilizes proven design practices which result in the creation of strong communities that remain economically stable over time.
10. Develop a project which contains a circulation system that promotes walking, biking, and the use of public transit.
11. Develop a project which contains a comprehensively planned infrastructure system.
12. Develop a project which ensures funding for the on-going maintenance needs of parks, open space facilities, public services and other infrastructure.
13. Develop a project which preserves, to the extent feasible, the area's most important and valuable biological resources with a wetlands preserve.
14. Develop a project which contains adequate school facilities for community residents and assists in meeting the school facility needs of surrounding projects.
15. Develop a project which includes a community park and a variety of neighborhood parks sufficient to meet park district requirements.

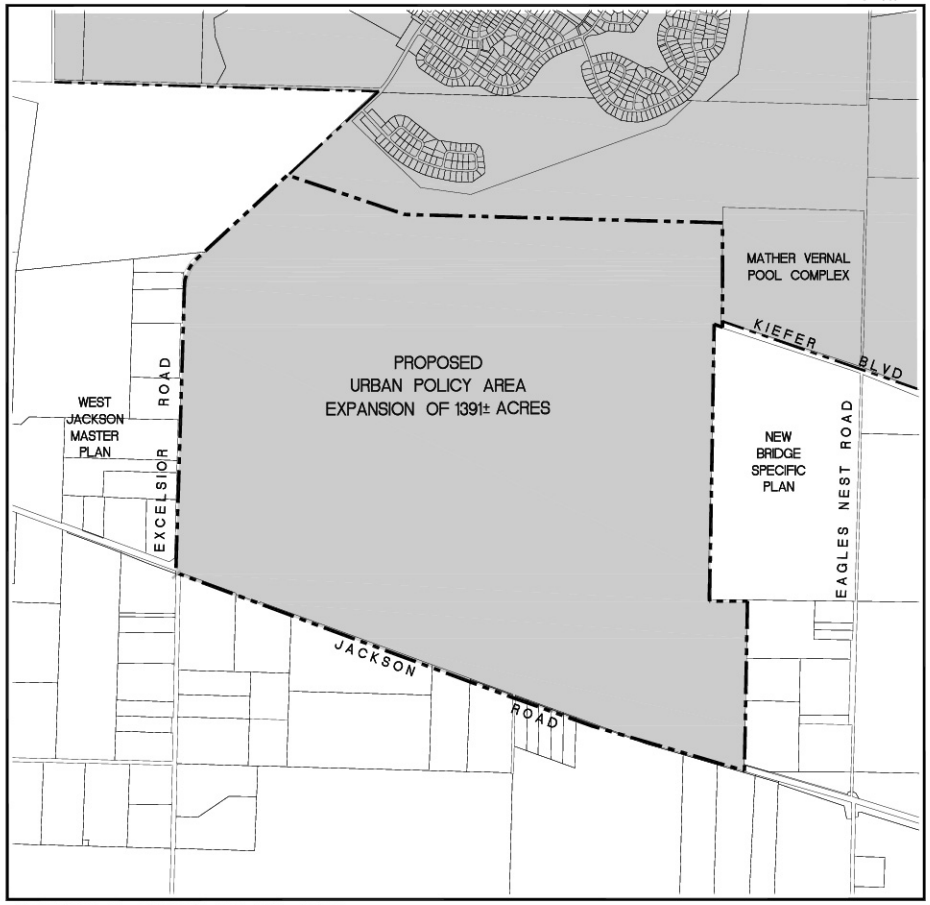
REQUESTED ENTITLEMENTS

To approve the Project or any of the Project Alternatives, the following entitlements must be approved by the Sacramento County Board of Supervisors:

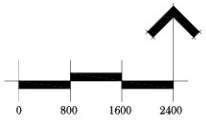
- A **General Plan Amendment** to move the UPA boundary south to include approximately 1,391 acres encompassing the Jackson Township Specific Plan (Plate PD-9).
- A **General Plan Amendment** to amend the Land Use Diagram designations within the Jackson Township Specific Plan from General Agriculture (20 acres) (568 acres) and Extensive Industrial (823 acres) to Low Density Residential, Medium Density Residential, Commercial and Office, Mixed Use, Recreation, and Natural Preserve (Plate PD-10). The southeast portion (110 acres) of the Plan Area would remain designated as General Agriculture (20 acres).
- A **General Plan Amendment** to amend the 2030 General Plan, including the Land Use Diagram, to include a Mixed Use Land Use Designation.
- A **General Plan Amendment** to amend the Transportation Diagram to reflect proposed roadway alignments (Plate PD-11).
- A **General Plan Amendment** to amend the Bicycle Master Plan to add on- and off-street bikeways (Plate PD-12).
- A **Community Plan Amendment** to the Vineyard Community Plan to change the community plan designations of the parcels located within the Jackson Township Specific Plan area (1,297.5 acres) from Permanent Agriculture (AG-80) (772.5 acres) and Light Industrial (525 acres) to Jackson Township Specific Plan Area (1,297.5 acres) (Plate PD-13).
- A **Community Plan Amendment** to the Cordova Community Plan to change the community plan designations of the parcels located within the Jackson Township Specific Plan Area (93.5 acres) from Light Industrial (71.4 acres) and Industrial Reserve (IR) (22.1 acres) to Jackson Township Specific Plan Area (93.5 acres) (Plate PD-1).
- **Adoption of the Jackson Township Specific Plan** for the approximately 1,391-acre Jackson Township Specific Plan area, including a Specific Plan land use diagram, Design Guidelines and Development Standards.
- A **Zoning Ordinance Amendment** to establish a Special Planning Area (SPA) Ordinance for the Jackson Township Specific Plan and a **Rezone** for a 575-acre portion (owned by the Project Applicant) of the Jackson Township Specific Plan Area from AG-80 (221 acres), M-1 (330.5 acres) and IR (23.5 acres) to Jackson Township Special Planning Area (SPA) (Plate PD-14).
- A **Large Lot Tentative Subdivision Map** for most of the lands owned by the Project Applicant, consisting of 12 existing parcels of approximately 864 acres, to be divided into 26 parcels totaling approximately 860 acres for the purpose of creating legal parcels corresponding to land use blocks within the Jackson Township Specific Plan (Plate PD-15).



EXISTING URBAN POLICY AREA



PROPOSED URBAN POLICY AREA



Source: Figure provided by Tsakopoulos Investments in 2019.

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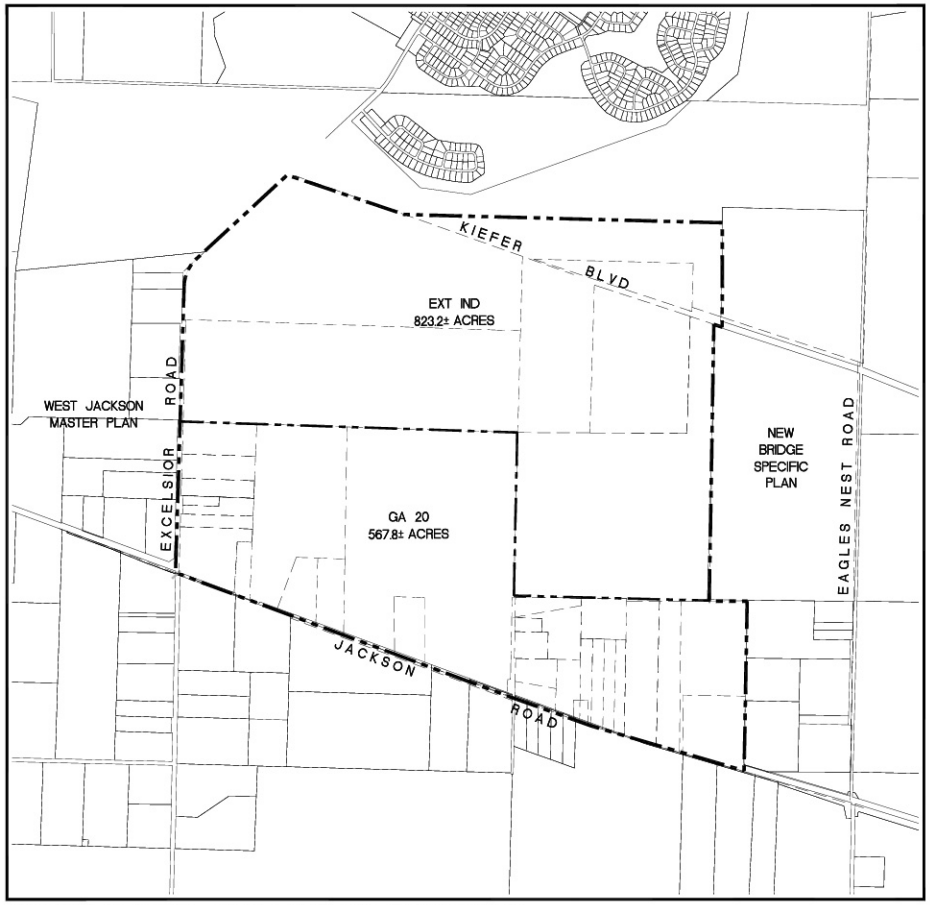
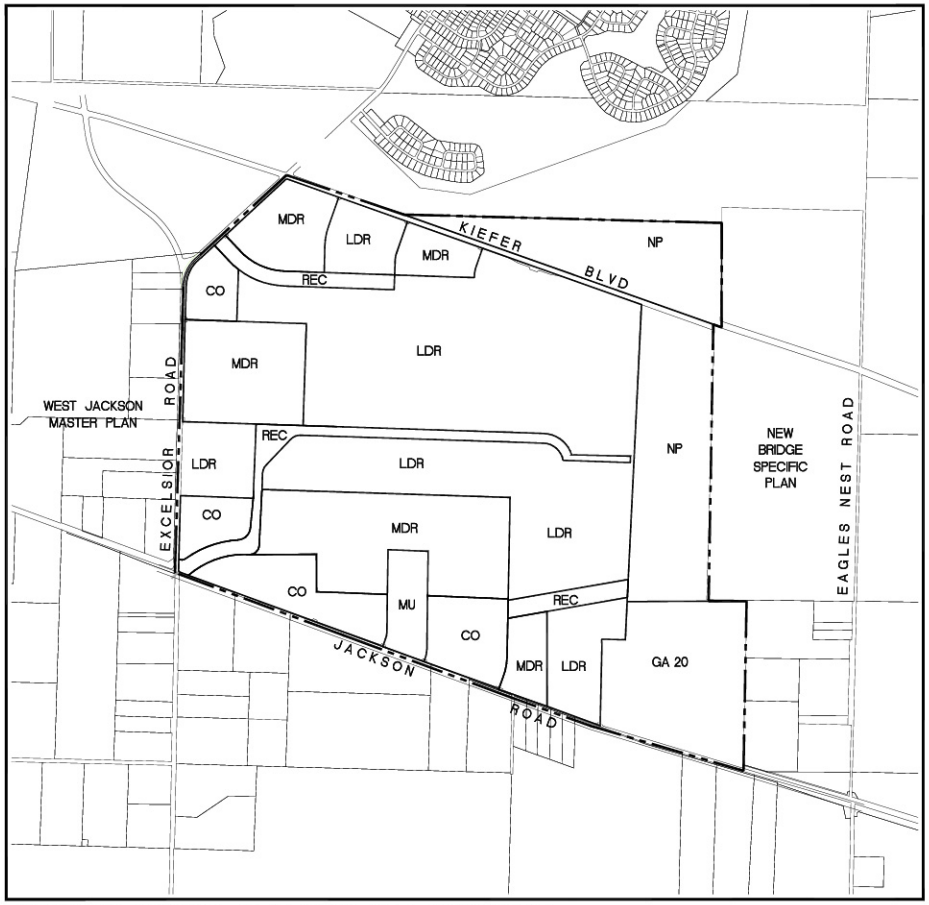
Plate PD-9: Proposed Urban Policy Area (UPA) Amendment

ASCENT ENVIRONMENTAL



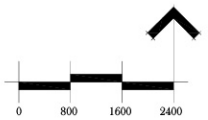
EXISTING GENERAL PLAN LAND USE DESIGNATION



PROPOSED GENERAL PLAN LAND USE DESIGNATION

LEGEND:

LDR	LOW DENSITY RESIDENTIAL (1-12 DU/AC)	PQP	CEMETERY, PUBLIC + QUASI PUBLIC
MDR	MEDIUM DENSITY RESIDENTIAL (13-30/AC)	EXT IND	EXTENSIVE INDUSTRIAL
CO	COMMERCIAL AND OFFICES	GA 20	GENERAL AGRICULTURE (20AC)
MU	MIXED USE		
NP	NATURAL PRESERVE		
REC	RECREATIONAL		

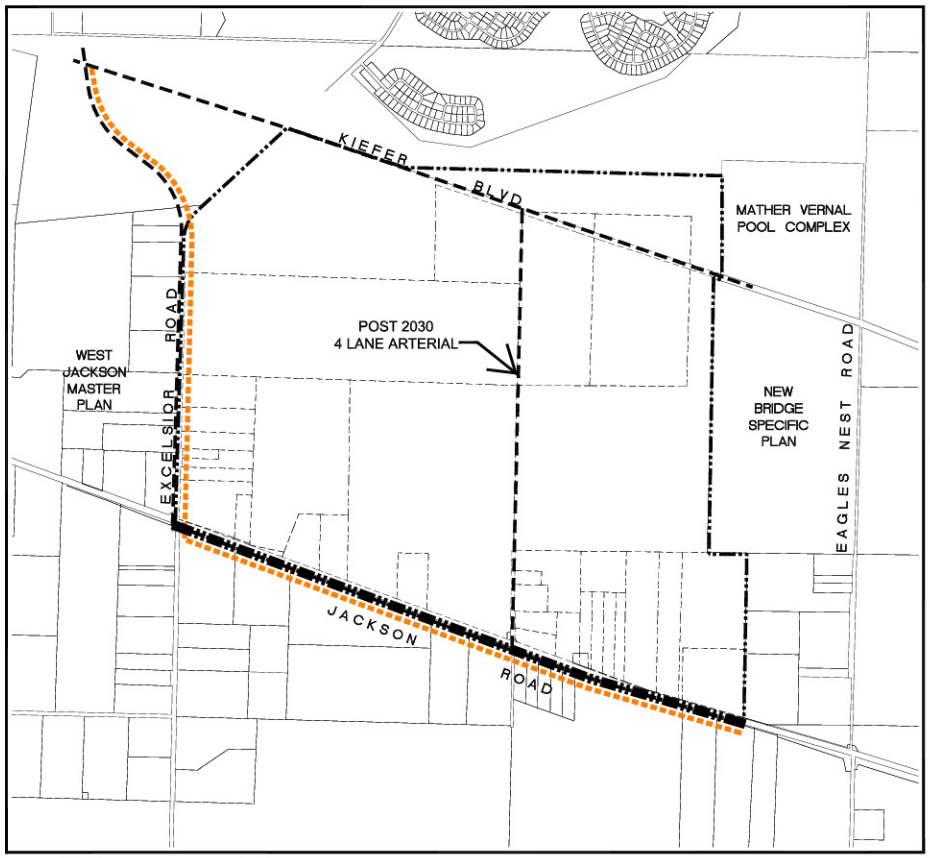


Source: Figure provided by Tsakopoulos Investments in 2019.

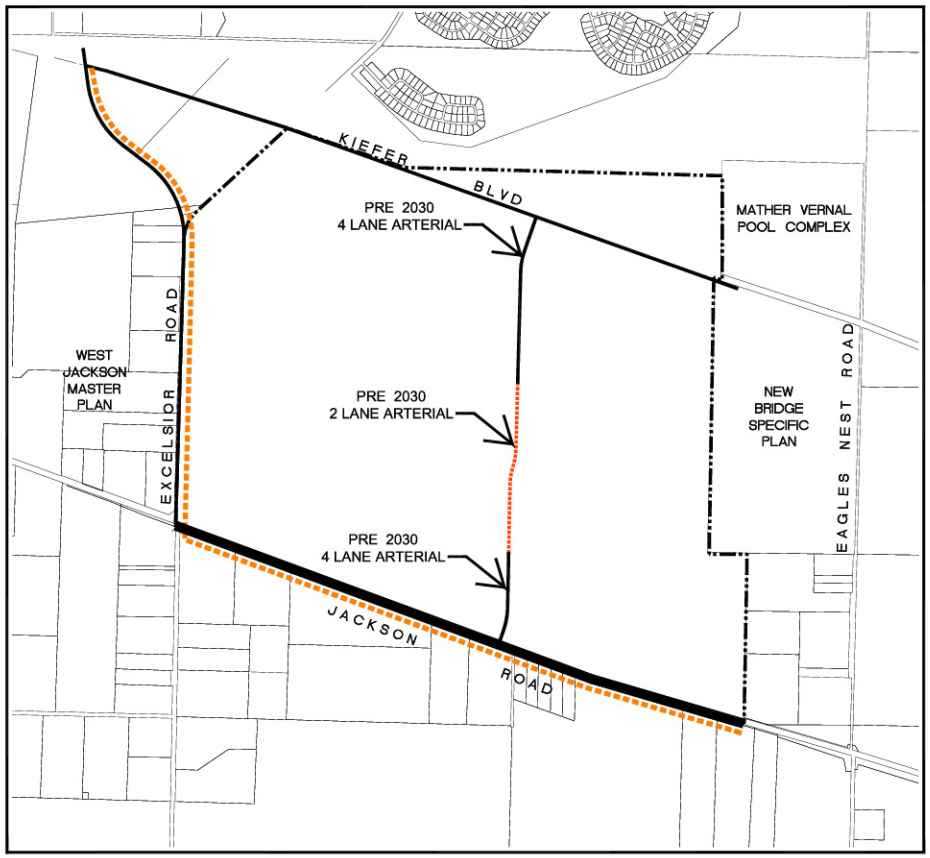
X15010101 09 021

Plate PD-10: Proposed General Plan Land Use Diagram Amendment

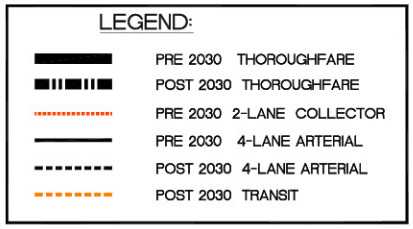
ASCENT ENVIRONMENTAL

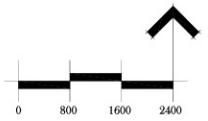


EXISTING TRANSPORTATION PLAN



PROPOSED TRANSPORTATION PLAN





Source: Figure provided by Tsakopoulos Investments in 2019.

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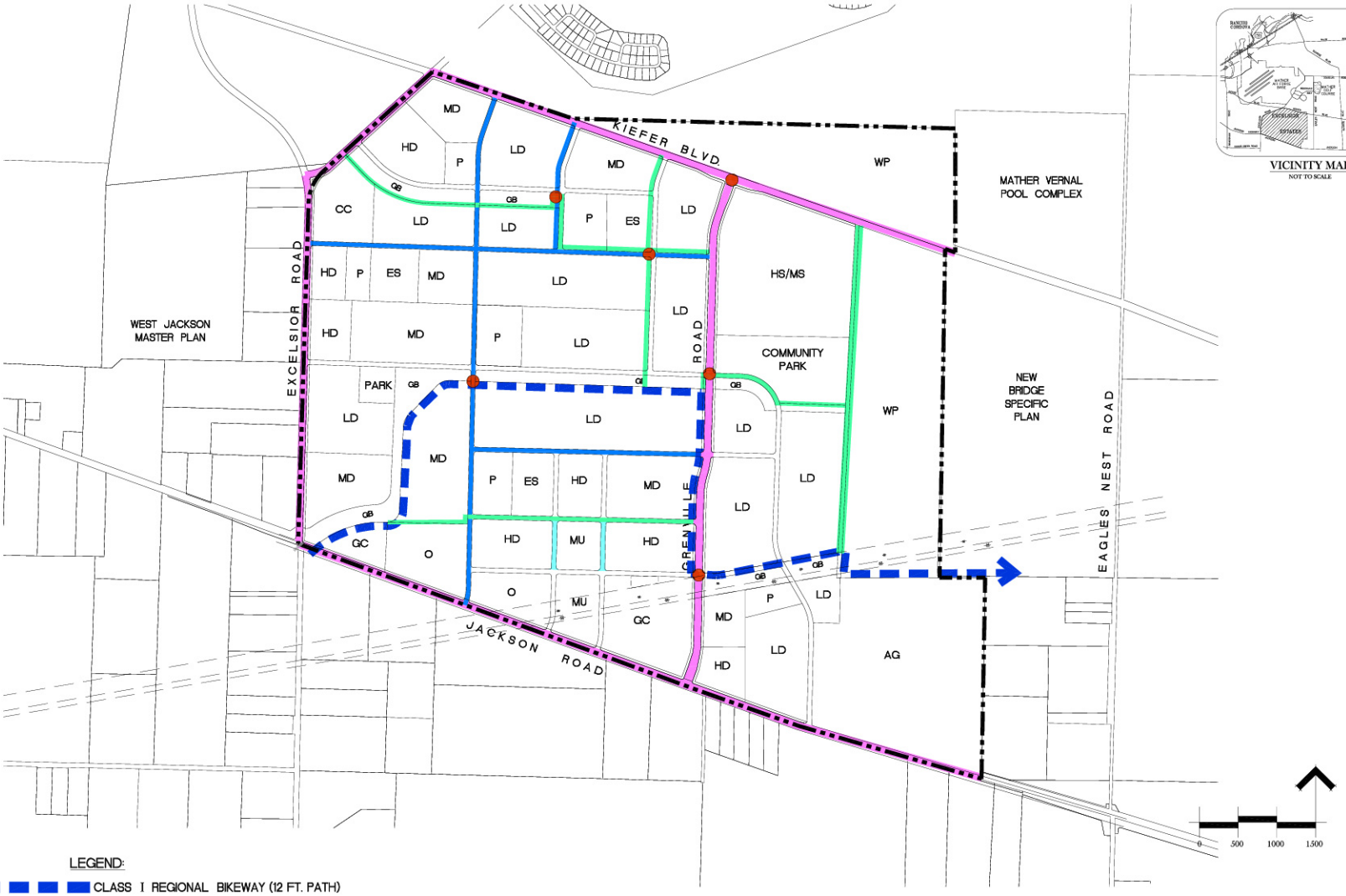
Plate PD-11: Proposed General Plan Transportation Diagram Amendment

ASCENT ENVIRONMENTAL



Source: Figure provided by Tsakopoulos Investments in 2019.

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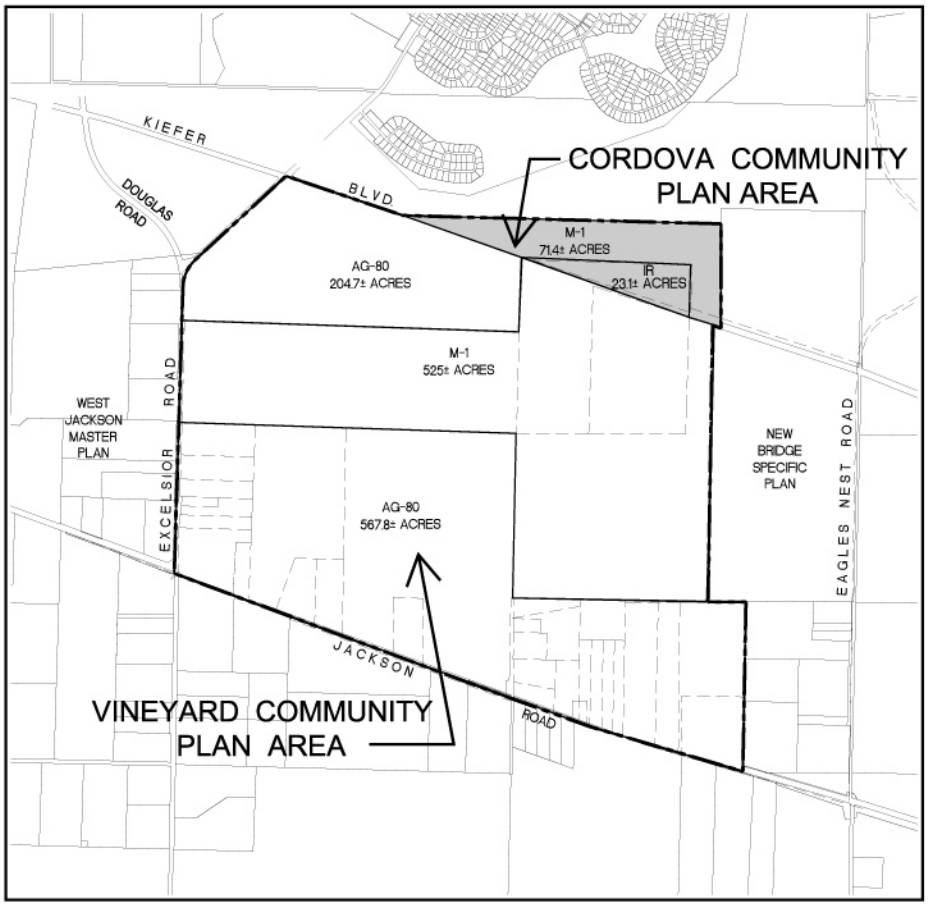
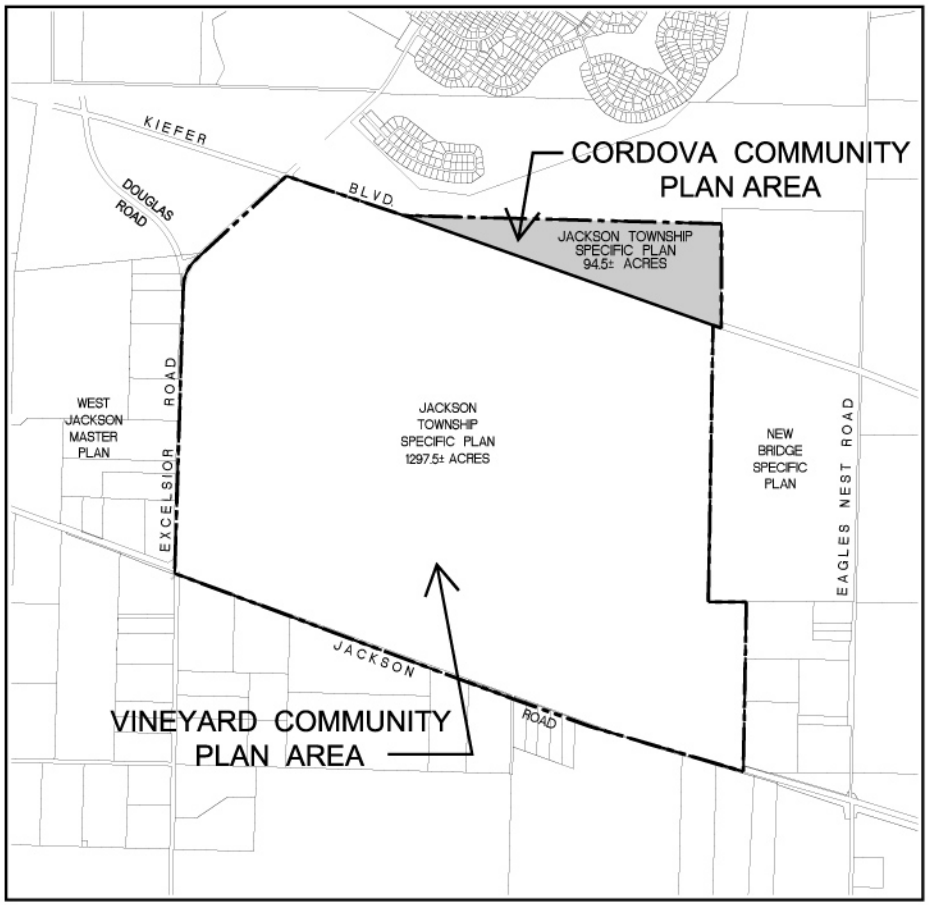
Plate PD-12: Proposed Bicycle Master Plan Amendment

ASCENT ENVIRONMENTAL

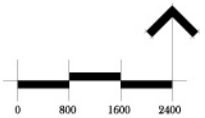


EXISTING COMMUNITY PLAN LAND USE DESIGNATIONS



PROPOSED COMMUNITY PLAN LAND USE DESIGNATIONS

LEGEND:	
AG-80	PERMANENT AGRICULTURE
M-1	LIGHT INDUSTRIAL
I R	INDUSTRIAL RESERVE

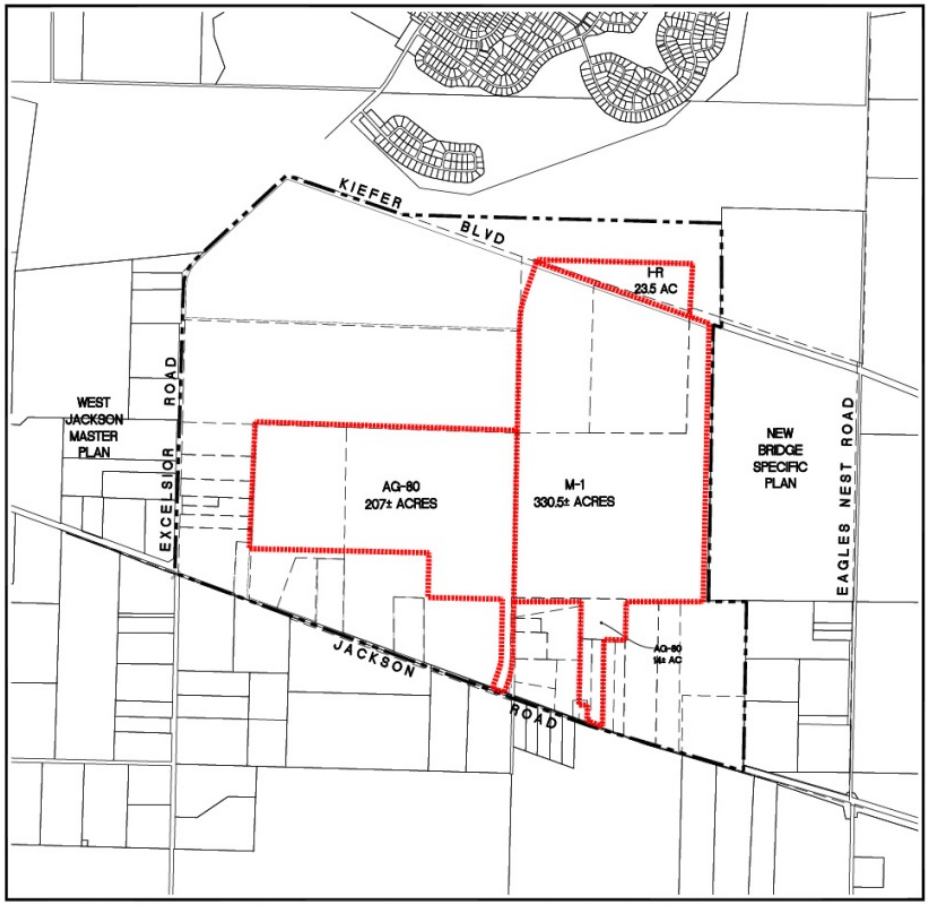


Source: Figure provided by Tsakopoulos Investments in 2019.

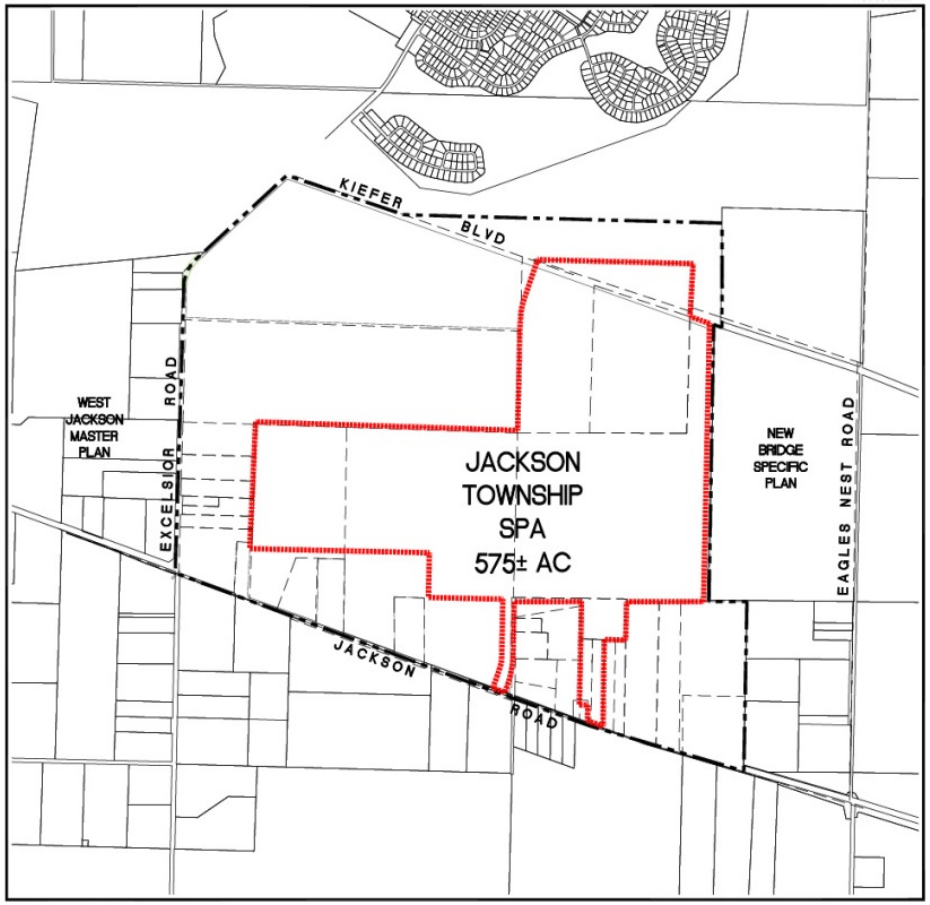
X15010101 09 020

Plate PD-13: Proposed Community Plan Amendments – Cordova and Vineyard Community Plans

ASCENT ENVIRONMENTAL



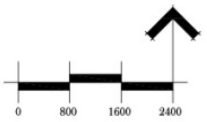
EXISTING ZONING



PROPOSED ZONING

LEGEND:

	REZONE BOUNDARY
AG-80	PERMANENT AGRICULTURE
M-1	LIGHT INDUSTRIAL
	PLAN AREA BOUNDARY
SPA	SPECIAL PLANNING AREA



Source: Figure provided by Tsakopoulos Investments in 2019.

X15010101 09 022

Plate PD-14: Proposed Rezone

ASCENT ENVIRONMENTAL

PARCEL	USE/ZONE	ACRES
1	AG-80	191.8
2	WP	23.5
3	GB	5.2
4	HS/MS	70.0
5	P	28.6
6	GB	1.9
7	GB	3.1
8	GB	10.1
9	GB	11.6
10	MD-RESIDENTIAL	34.2
11	AG-80	80.1
12	HD-RESIDENTIAL	16.9
13	MD-RESIDENTIAL	22.3
14	HD-RESIDENTIAL	10.7
15	ES	10.0
16	P	9.5
17	LD-RESIDENTIAL	57.5
18	LD-RESIDENTIAL	14.4
19	LD-RESIDENTIAL	30.0
20	GB	0.6
21	GB	1.0
22	LD-RESIDENTIAL	9.2
23	LD-RESIDENTIAL	6.1
24	GB	4.0
25	LD-RESIDENTIAL	35.1
26	WP	121.8
R/W	R/W	50.4
TOTAL:		859.6

LEGEND:

EXISTING CONTOUR MAJOR	100
EXISTING CONTOUR MINOR	106
EXISTING SWALE/POND	
EXISTING FENCE	x x x
EXISTING TOWER	
EXISTING EASEMENT	
EXISTING STRUCTURE	
EXISTING PARCEL NUMBER	067-0110-050
FUTURE RIGHT OF WAY W/ CENTERLINE	
PROPOSED RIGHT OF WAY W/ CENTERLINE	
PROPOSED LOT NUMBER	2
WETLAND/PRESERVE	WP
PROPOSED PARK	P
PROPOSED GREENBELT	GB
PROPOSED ELEMENTARY SCHOOL	ES
PROPOSED HIGH SCHOOL/MIDDLE SCHOOL	HS/MS
PROPOSED COMMUNITY PARK	CP
RIGHT OF WAY	R.O.W.

Source: Figure provided by Tsakopoulos Investments in 2019.

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Plate PD-15: Proposed Large Lot Tentative Map

ASCENT ENVIRONMENTAL

- **Adoption of an Affordable Housing Strategy** for the Jackson Township Specific Plan.
- **Adoption of a Development Agreement** for the Jackson Township Specific Plan by and between the County of Sacramento and Tsakopoulos Investments, LLC. or Excelsior Estates, LLC., both of which are owned by the Project Applicant, for the acreage within the Plan Area owned by the Project Applicant.
- **Adoption of a Public Facilities Financing Plan** for the Jackson Township Specific Plan that includes a Capital Improvement Program and Financing Plan.
- **Adoption of a Water Supply Master Plan Amendment** to amend the existing Zone 40 Water Supply Master Plan to include provision of water service to the Jackson Township Specific Plan Area. This action requires Sacramento County Water Agency Board of Directors approval.
- **Approval of a Water Supply Assessment** for the Jackson Township Specific Plan required by the California Water Code to link land use and water supply planning activities. This action requires Sacramento County Water Agency Board of Directors approval.

It should be noted that this application request does not include rezone of the properties not owned by the Project Applicant, and that any subsequent rezones would be the subject of future applications and CEQA review.

SACRAMENTO LAFCO ENTITLEMENTS

In addition to the above listed entitlements, separate annexation requests to the Sacramento Local Agency Formation Commission (LAFCo) for the Project and the Project Alternatives will include:

- A Sphere of Influence Amendment (SOIA) and concurrent Annexation to County Service Area (CSA) 10 or creation of a new CSA. Note: a separate subsequent action may be required by the Sacramento County Board of Supervisors to establish a Benefit Zone to implement funding and service provision.
- Annexation to Sacramento Regional County Sanitation District (SRCSD).
- Annexation to Sacramento Area Sewer District (SASD).

Concurrent with, or subsequent to, the Sacramento County entitlement process, an annexation application to LAFCo must be submitted to amend the service boundaries of SRCSD and SASD to provide wastewater services to the Plan Area. This process would include the definition of the ultimate geographical boundaries of SRCSD and SASD, disclose the present and planned land uses in the area, describe the present and probable need of public services and facilities in the area, describe the present capacity of those services and facilities and disclose the presence of any relevant social or economic communities of interest in the area. LAFCo would also review the SOIA and CSA annexations. LAFCo has sole authority and discretion to act on the aforementioned request, and as a responsible agency, will contribute to and rely on this EIR.

Buildout and Operation

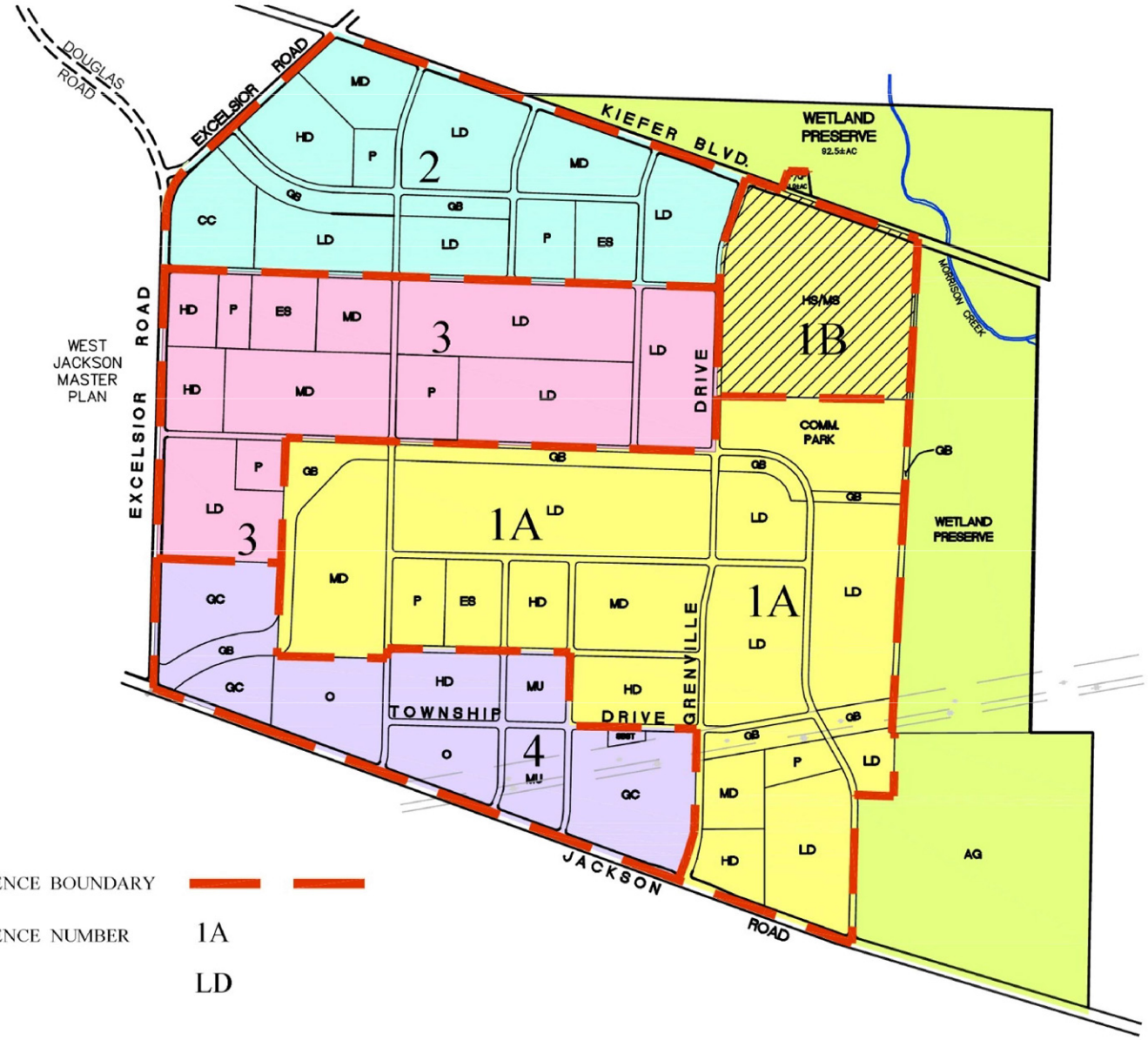
The Project provides for a comprehensively planned infrastructure system with coordinated sequencing and construction of facilities. The Project has been analyzed based on the assumption that construction phasing would begin in approximately 2020. Plate PD-16 illustrates the geographic boundaries of the four development areas (Area 1A/B, Area 2, Area 3 and Area 4). These areas were selected based on infrastructure service, logical development areas, and property ownership. The sequencing has also been set up so that any phase can be constructed once 1A/B has been completed because the major sewer and water supply infrastructure will be available for subsequent phases. This sequencing facilitates the completion of major backbone infrastructure improvements, provides internal access from both Jackson Highway and Kiefer Boulevard and provides early access to the high school/middle school site. Full buildout of the specific plan is anticipated in 2035.

Project Design

The Project design was influenced by the vernal pool complex in the eastern area of the Plan Area, the Morrison and Elder Creek drainages, and existing and planned roadways. The Project is intended to provide for a diverse community that can accommodate a wide range of residents in various housing types in proximity to existing and planned job centers, including new jobs created within the Plan Area. The Plan Area has been designed to create two distinctive “hubs” that would serve as the focus of the community and allow for people to live, work, shop, and recreate in the same place. A Town Center hub is proposed along Jackson Highway between Excelsior Road and Tree View Lane (to be renamed Grenville Drive), which runs north-south near the center of the Plan Area. The Town Center hub is designed as a gridded, compact block area that contains the more intensive land uses to serve the community and beyond. The Town Center contains the proposed Office, General Commercial, and Mixed Use areas; these uses would be generally surrounded by the more dense residential uses, with lower densities further from the Town Center (see Plate PD-17). The higher intensity uses within the Town Center would help support transit uses along Jackson Highway.

The second hub is comprised of a smaller village along Excelsior Road at the northwest corner of the Plan Area. This village is designed to provide a moderate intensity community with Community Commercial uses and high and medium density residential (see Plate PD-17). This village would also serve residents of the existing Independence at Mather subdivision. Like the Town Center, the intensities and densities would reduce further away from the village center.

A key feature of the Plan Area is a large, centrally located greenway/drainage corridor with a trail on one side that has been designed to provide easy, non-vehicular linkages from one end of the community to the other. Most residential units within the Plan Area would be located within 0.25 mile of an open space area, park, or linear parkway; and within 0.5 mile of retail and employment land uses. Similarly, each of the elementary school sites would be within 0.25 mile of most of the proposed residential units.



Source: Figure prepared by Tsakopoulos Investments in 2019 for the Jackson Township Specific Plan.

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Plate PD-16: Project Phasing

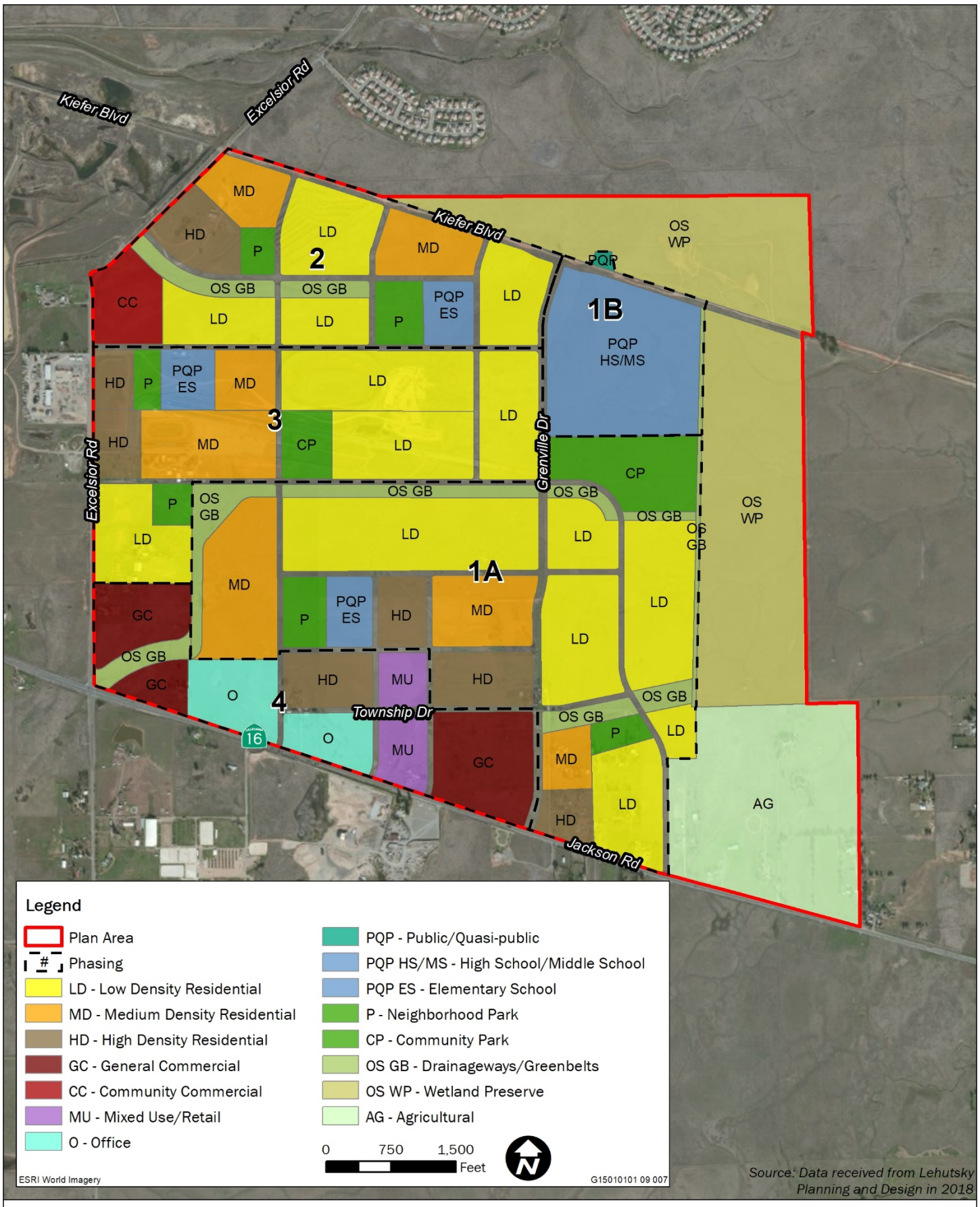

Plate PD-17: Proposed Land Use Diagram

ASCENT ENVIRONMENTAL

Much of the eastern portion and the area north of Kiefer Boulevard within the Plan Area would be occupied by a wetland and habitat preserve, which includes the segment of Morrison Creek that flows through the Plan Area. The proposed preserve location is part of a regional wetland and habitat conservation strategy developed by the County as part of the South Sacramento Habitat Conservation Plan (SSHCP) process. As part of the SSHCP, the preserve would extend south of Jackson Highway, as well as into the adjacent plan areas to the east and northeast, including connected preserve areas within the adjacent NewBridge Specific Plan area, Mather South plan area, and the existing Mather Field Special Planning Area. The preserve corridor would connect to another wetland preserve located within the partially-developed Anatolia community east of Sunrise Boulevard in the City of Rancho Cordova and potentially further to the east.

The southeastern corner of the Plan Area (approximately 110 acres) would be designated Agriculture under the Project, which reflects the existing agricultural-residential use. In the future, this area could be incorporated into the larger wetland preserve located to the north and south. It is also foreseeable that this area could be converted to residential and/or commercial use because it fronts Jackson Highway. However, development of this area is not considered as part of this Project, and it is not included in the SPA.

For the purpose of infrastructure planning, the technical studies prepared for the Project assume the potential for the development of six units per gross acre in the agriculture area. The Project Applicant has also included this area within the UPA amendment request, at the request of the County to comply with 2030 General Plan Policy LU-119. This provides the foundation for coherent infrastructure if some portion of the area is eventually proposed for development. Note, however, that although the infrastructure studies assume development of this area, all future development proposals within this area would be required to undergo a separate entitlement process and CEQA review through Sacramento County. Any future development proposals located within this area could potentially tier off of this EIR if they are consistent with the development assumptions made in this EIR.

Proposed Land Use Plan and Land Use Designations

As shown in Plate PD-14, the majority of the Plan Area owned by the Project Applicant is proposed to be divided into 26 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 could purchase one or more large-lot parcels to subdivide, if necessary, and develop the land consistent with the designated land use. A separate entitlement process for non-participating properties could similarly divide those properties into legal parcels.

The Project includes a land use plan that would provide for a range of different uses, including Low Density Residential, Medium Density Residential, High Density Residential, General Commercial, Community Commercial, Mixed Use, Office, schools, a fire station, parks, a wetland preserve, a greenbelt/drainage corridor, landscaping, detention, agriculture, and associated roadways.

Specifically, the land use plan provides for a total of 6,143 residential units. Of those, there would be 2,134 Low Density Residential units covering 355.7 acres with an average density of six units per acre; 1,772 Medium Density Residential units covering

136.3 acres with an average density of 13 units per acre; 2,137 High Density Residential units on 85.5 acres with an average density of 25 units per acre; and 100 Mixed Use units within one of the Mixed Use parcels.

The proposed land use plan also includes 59.3 acres of General Commercial uses on three large-lot parcels, one 17.6-acre parcel of Community Commercial, and two Office parcels totaling 33.6 acres. The proposed Floor-to-Area Ratio (FAR) of both commercial designations would be 0.25, with approximately 645,700 square feet of space allowable in the General Commercial designation and 191,600 square feet of space allowable within the Community Commercial designation. The Office designation would also provide for 731,800 square feet of space with a FAR of 0.50. In addition to the 100 potential residential units mentioned above, the Mixed Use parcels would provide 427,000 square feet of non-residential space with a proposed FAR of 0.50 on a total of 19.6 acres.

The Project includes four school sites, approximately 78.3 acres of developed park land, and a 214.3-acre wetland preserve along the eastern and northern boundaries of the Plan Area. Approximately 60.9 acres are also set aside in three greenbelt/drainage corridor areas that are generally located in the northern, central, and southeastern portions of the Plan Area, along with 3.2 acres for detention basins. The Plan Area would also include 14.5 acres of landscape corridors.

See Table PD-2 for a detailed Land Use summary and Plate PD-16 for the proposed Land Use Plan.

Table PD-2: Proposed Project Land Use Summary

Residential Designations	Acres	Average Density	Density Range (DU/acre)	DU	*% of* DU	Jobs
LD-Low Density Residential	355.7	6.0	1.0–10.9	2,134	34.7%	
MD-Medium Density Residential	136.3	13.0	11.0–19.9	1,772	28.9%	
HD-High Density Residential	85.5	25.0	20.0–30.0	2,137	34.8%[4]	
Subtotal	**577.5**	**--**	**--**	**6,043**	**98.4%**	
Commercial + Office Zones	**Acres**	**FAR**	**Square Footage**	**DU**	***% of* DU**	
GC-General Commercial	59.3	0.25	645,700	n/a[1]	--	1,291
CC-Community Commercial	17.6	0.25	191,600	n/a[1]	--	383
MU-Mixed Use	19.6	0.50	427,000	100[2]	1.6%[7]	854
O-Office	33.6	0.50	731,800	n/a[1]	--	2,613
Subtotal	**130.1**	**--**	**1,996,100**	**100**	**1.6%**	**5,141[4]**
Public/Quasi Public Zones	**Acres**					
PQP-Tank Site	1.0					0
PQP-High School/Middle School	70.0					274
PQP-Elementary School	30.0					198
Subtotal	**101.0**					**472[5]**

Park + Open Space Zones	Acres					
CP-Community Park	39.2					
P-Neighborhood Park	39.1					
OS-Wetland Preserve	214.3					
OS-Greenbelt/Drainage Corridor	60.9					
OS-Landscape Corridor	14.5					
Subtotal	**368.0**					
AG-Agriculture	109.8					
RW-Primary Roadways	104.6					
	Acres		**Density Range (DU/acre)**	**DU**	***% of* DU**	**Jobs**
TOTAL	**1,391.0**		**10.5[3]**	**6,143**	**100%**	**5,613**

Notes: DU = dwelling unit, FAR = Floor-Area Ratio (i.e. a FAR of 0.25 means that for every 1 acre of land in the category–like General Commercial–0.25 acre will be used for a structure)

1. Dwelling units are not permitted in these designations.
2. 100 dwelling units are assigned to the 8.2-acre MU parcel only, and zero units are assigned to the 11.4-acre parcel.
3. Double-net density calculation: 6,143 DU/585.7 acres (577.5 acres+8.2 acres of MU) = **10.5 DU/acre**. Note: This does not include the 109.3 acres of AG or the 10% net residential acreage exclusion allowed per Policy LU-120 CB-1.
4. Job generation is based on 1 employee per 500 s.f. in GC, CC, MU, and 1 employee per 280 s.f. in Office.
5. Job generation in PQP Schools is based on data provided by Elk Grove Unified School District.
6. A minimum 34.8% of a Master Plan's units must be accommodated on multi-family zoned land. This includes HD and MU parcel allocations, for a total of 2,237 DU or 36.4%.

The Land Use Plan, shown on Plate PD-16, illustrates the arrangement of land uses, transportation networks and open space that would comprise the Plan Area. Table PD-2 provides a detailed summary of the land use zones, acres and dwelling uses allocated in the Land Use Plan and evaluated in the EIR analysis.

As described above, the Project would be constructed in phases (see Exhibit PD-15 and Table PD-3). The first phase (Area 1A/B) would include approximately 270 acres of residential development and nearly 2,800 dwelling units (divided roughly evenly between low, medium, and high-density designations); the middle school/high school site; and 93 acres of parks, greenbelts, and landscape corridors. Area 2 would include approximately 121 acres of residential development and nearly 1,260 dwelling units (divided roughly evenly between low, medium, and high-density designations), approximately 18 acres of community commercial development, a neighborhood park, and 13 acres of the greenbelt/drainage corridor. Area 3 would include 171 acres of residential development and 1,637 dwelling units (683 low density, 516 medium density, and 438 high density), 10 acres of community park, and 10 acres of neighborhood park. Area 4 would include 376 high density residential units on 15 acres; all of the general commercial, mixed use, and office area proposed in the Plan Area (a total of 1,804,500 square feet on 113 acres); and 6 acres of the greenbelt/drainage corridor. The non-phased areas include the wetland preserve and agricultural parcels, for which no development is proposed.

Table PD-3: Proposed Project Phasing

Residential Designations	Total Acres	Area 1A/B Acres	Area 1A/B DU	Area 2 Acres	Area 2 DU/SF	Area 3 Acres	Area 3 DU/SF	Area 4 Acres	Area 4 DU	Area 4 SF	Non-phased Areas
LD-Low Density Residential	355.7	168.2	1,009.2	73.6	441.6	113.9	683.4	0	0	0	0
MD-Medium Density Residential	136.3	65.6	852.8	31.0	403.0	39.7	516.1	0	0	0	0
HD-High Density Residential	85.5	36.3	907.5	16.6	415.0	17.5	437.5	15.1	376.0	0	0
Subtotal	**577.5**	**270.1**	**2,769.5**	**121.2**	**1,259.6**	**171.1**	**1,637.0**	**15.1**	**376.0**	**0**	**0**
Commercial + Office Zones	**Acres**										
GC-General Commercial	59.3	0	0	0	0	0	0	59.3	0	645,700	0
CC-Community Commercial	17.6	0	0	17.6	191,600	0	0	0	0	0	0
MU-Mixed Use	19.6	0	0	0	0	0	0	19.6	100.0	427,000	0
O-Office	33.6	0	0	0	0	0	0	33.6	0	731,800	0
Subtotal	**130.1**	**0**	**0**	**17.6**	**191,600**	**0**	**0**	**112.5**	**100.0**	**1,804,500**	**0**
Public/Quasi Public Zones	**Acres**										
PQP-Tank Site	1.0	1.0	0	0	0	0	0	0	0	0	1.0
PQP-High School/Middle School	70.0	70.0	0	0	0	0	0	0	0	0	0
PQP-Elementary School	30.0	10.0	0	10.0	0	10.0	0	0	0	0	0
Subtotal	**101.0**	**81.0**	**0**	**10.0**	**0**	**10.0**	**0**	**0**	**0**	**0**	**1.0**
Park + Open Space Zones	**Acres**										
CP-Community Park	39.2	28.6	0	0	0	10.6	0	0	0	0	0
P-Neighborhood Park	39.1	14.6	0	14.5	0	0	0	0	0	0	0
OS-Wetland Preserve	214.3	0	0	0	0	0	0	0	0	0	214.3
OS-Greenbelt/Drainage Corridor	60.9	41.5	0	13.0	0	0	0	6.4	0	0	0
OS-Landscape Corridor	14.5	8.7	0	3.8	0	2.0	0	0	0	0	0
Subtotal	**368.0**	**93.4**	**0**	**31.3**	**0**	**12.6**	**0**	**6.4**	**0**	**0**	**214.3**
AG-Agriculture	109.8	0	0	0	0	0	0	0	0	0	109.8
RW-Primary Roadways	104.6	0	0	0	0	0	0	0	0	0	104.6
	Acres	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**214.4**
TOTAL	**1,391.0**	**444.5**	**2,770**	**180.1**	**1,260**	**193.7**	**1,637**	**134.0**	**476**	**1,804,500**	**429.7**

At buildout, the population of the Plan Area is anticipated to be approximately 16,498 residents (see Table PD-4).

Table PD-4: Proposed Project Population Projections

Residential Designations	DU	Person per DU	Population
LD-Low Density Residential	2,134	3.1	6,615
MD-Medium Density Residential	1,772	2.8	4,962
HD-High Density Residential	2,137	2.2	4,921
Total	**6,043**		**16,498**

Source: Jackson Township Specific Plan, Chapter 6

RESIDENTIAL LAND USE

LOW DENSITY RESIDENTIAL (LD)

The LD land use category provides for single-family detached homes on standard suburban size lots; however, attached homes are also allowed. Alternative lot configurations such as alley, cluster, or halfplex lots may also occur. The density range is 1.0 to 10.9 dwelling units per gross acre (du/ac) and the projected average density is 6.0 du/ac.

MEDIUM DENSITY RESIDENTIAL (MD)

The MD land use category accommodates a variety of housing types. This density allows for single-family detached housing, as well as attached housing types. Lot configurations associated with MD housing types may include standard, halfplex, cluster, alley, courtyard, greencourt, zero-lot line, brownstones, townhomes, or condominiums. The density range is 11.0 to 19.9 du/ac and the projected average density is 13.0 du/ac.

HIGH DENSITY RESIDENTIAL (HD)

The HD land use category anticipates a variety of attached and multi-family housing types. The HD sites are strategically located in the Town Center and near the Village Center to promote alternative transportation through the proximity to jobs, goods, services, and transportation hubs. The HD sites provide both rental and for-sale housing opportunities. HD sites may be identified to provide affordable housing units in conformance with the Affordable Housing Ordinance, Title 22.35. The density range is 20.0 to 30.0 du/ac and the projected average density is 25 du/ac.

AFFORDABLE HOUSING

Affordable housing obligations are a component of new development projects, as outlined in the Affordable Housing Ordinance, Title 22 of the Code, Chapter 22.35. The ordinance outlines a variety of options with which to satisfy the obligation. The Project would meet its affordable housing obligation by paying the Affordability Fee on all newly-constructed market rate units at the time building permits are paid. The County establishes this fee and adjusts it annually. The ordinance requires at least 50 percent of the funds collected from large development projects (750 dwelling units or larger)

shall be used by the Sacramento Housing and Redevelopment Agency to construct the affordable units within the development.

The ordinance describes the characteristics of the land to be considered as appropriate for the construction for affordable housing. These characteristics include a minimum size of 4 acres and a minimum density of 20 units per acre. The area should be free of environmental constraints and be within 0.25 mile of at least three existing or planned amenities, such as schools, parks, transit, grocery store, or public library. The seven HD sites in the Plan Area all meet these criteria.

COMMERCIAL AND OFFICE LAND USES

GENERAL COMMERCIAL

The General Commercial (GC) land use category is designated for larger, visible sites within the Town Center and along Jackson Highway. The three GC commercial sites are targeted to serve the immediate region and the Jackson Township community, including shopping centers, larger format retailers, and a range of freestanding uses such as banks, restaurants, entertainment, offices, and public uses. The target FAR is 0.25.

COMMUNITY COMMERCIAL

The Community Commercial (CC) site serves as the Village Center for the Plan Area and neighboring communities. The 17.6-acre site is strategically located on Excelsior Road so that it serves as a close destination for Project neighborhoods, as well as for the Independence at Mather community to the north. The CC designation provides the opportunity for both community and local oriented uses, including retail and services such as a grocery store, restaurants, professional and personal services. The target FAR is 0.35.

MIXED USE

The two Mixed Use (MU) sites form the geographic and cultural hub of the Town Center, serving as a gateway to the community. Anticipated uses include retail commercial, services, civic, and quasi-public uses in a compact, urban style setting. The northern MU site permits integrated residential uses, in both vertical (different uses stacked above one another) and horizontal (different uses on a single parcel) mixed use opportunities. The southern MU site has the constraint of overhead power line easements, which prohibits residential uses. However, this MU site is envisioned to provide an urban style plaza in the center, which enriches its function as a centerpiece of the Town Center. The target FAR for the non-residential uses is 0.50.

OFFICE

The three office sites are located on Jackson Highway within the Town Center. Uses anticipated within this area generally include professional offices, research/development campuses, medical offices and clinics; hospitals; law firms; accountant offices; insurance, real estate, and financial offices; governmental offices; social services; and non-profit organizations. Retail commercial activities that complement or are accessory to the primary uses of the zone are also appropriate. The target FAR is 0.50.

PARKS AND OPEN SPACE

Parks provide locations in the Plan Area for recreation and community gathering. Two community parks and six neighborhood parks are distributed throughout the Plan Area. This category is intended to provide locations for parks and other related compatible public services/uses. The proposed parks meet the parkland requirements of the Cordova Recreation and Park District. Both active and passive recreational activities are permitted.

COMMUNITY PARKS

Two Community Park sites are provided. The larger of the two Community Parks (Park A) is approximately 28.6 acres, located in the eastern quadrant of the Plan Area, directly adjacent to the joint High School/Middle School site and the wetland preserve. The placement of Community Park A is intended to create a prominent community gathering area of complementary public uses, which is easily accessible for the entire Plan Area. Community Park A is envisioned to provide for large active facilities, such as lighted softball, baseball and soccer fields, basketball courts, parking, restrooms, large covered picnic area and playgrounds, water playground, and an off-leash dog area. This park is strategically located adjacent to the primary Central Greenbelt and the East Greenbelt along the wetland preserve, making a convenient biking, walking or running circuit and a good location for amenities such as a trailhead and nature/wildlife interpretive facilities.

The second Community Park (Park B) is approximately 10.6 acres in size and is located near the center of the Plan Area. The facilities in this park may include soccer fields, basketball courts, large covered picnic area, restrooms, playground and parking.

NEIGHBORHOOD PARKS

The six neighborhood parks are planned to provide a balance between passive and active recreation uses, as well as create a sense of place for the Plan Area. The neighborhood parks would be easily accessible through the use of the greenbelt trails, bikeways, sidewalks or residential streets. A range of recreation elements are planned for the four smaller neighborhood parks (approximately 5 acres each), including play areas for children, multi-purpose turf areas for youth sports and practice fields, half-basketball courts, and picnic areas and covered spaces for small groups of people to gather. Three of the neighborhood parks are located adjacent to the elementary schools to provide joint-use facilities and to reinforce them as focal points for the neighborhoods. Two of these joint located parks are larger in size (9.5 acres) and could possibly accommodate soccer and baseball fields, a restroom, and parking lot in addition to the type of facilities in the smaller neighborhood parks.

OPEN SPACE

The Project designates approximately 290 acres of open space. Open space within the Plan Area is organized into three categories: wetland preserve, multi-functional greenbelts, and landscape corridors. Open space allows for multi-use functions including passive recreation opportunities, wildlife habitat, corridors for pedestrian and bicycle trails, storm water conveyance, and water quality treatment.

WETLAND PRESERVE

The approximately 214-acre wetland preserve abuts the east and north boundaries of the Plan Area. The function of the wetland preserve is to preserve and protect existing natural resources, while also providing visual open space for the Plan Area. Uses within, and access into, the wetland preserve areas would be restricted pursuant to the SSHCP and/or the United States Army Corps of Engineers (USACE).

Consistent with the conservation strategy in the SSHCP, the Project's wetland preserve would be contiguous with a wetland preserve located on the Mather Field property to the north, as well as a large, proposed preserve located on the neighboring NewBridge Specific Plan area to the east. The SSHCP further requires that projects include a variety of measures to minimize the impact of development on sensitive resources, such as vernal pools. Examples of resource avoidance and minimization measures from the SSHCP that have been incorporated into the design of the Plan Area include the following:

- inclusion of a minimum 50-foot wide setback between development and the Preserve;
- controlling public access to the Preserve through permanent fencing along the boundaries;
- educational signage provided in key areas of Preserve;
- control of invasive species and management of nonnative vegetation within the setback area and Preserve;
- minimization of road and trail crossings of wetlands and other waters within the Preserve; and
- compliance with State and local stormwater regulations.

The Project Applicant intends to dedicate the Applicant-owned preserve lands to the South Sacramento Conservation Agency (SSCA). The remaining onsite preserve acreage would be acquired by the SSCA. The SSCA would implement measures identified in the SSHCP to ensure the long-term viability of the protected and restored vernal pool and wetland resources within the preserve. These measures include routine management activities, as well as adaptive management practices. Detailed avoidance and minimization measures that would apply to all lands abutting the preserve are included in the Development Standards, which are provided in Appendix PD-1.

Pursuant to the SSHCP, the preserve would be routinely monitored to ensure habitat health and functionality. At the time of preserve dedication, the Project Applicant would pay a fee to help fund these long-term maintenance and monitoring activities in perpetuity.

MULTI-FUNCTIONAL GREENBELTS

The larger greenbelts are multi-use corridors that combine drainage, detention basins, water quality basins, local and regional trails and nodes. The greenbelts form the overall pedestrian and bikeway trail network and provide passive recreation opportunities.

Greenbelts may also provide space for compatible recreation amenities, such as benches and gathering areas for the adjacent neighborhoods.

The proposed greenbelts provide trails, passive recreation, and drainage conveyance within linear corridors. The objective is to create multifunctional facilities for stormwater conveyance and water quality treatment in a naturalized corridor which provides trails, landscaping, passive and active amenities in the upland portions.

The largest greenbelt is the Central Greenbelt, which provides the majority of the drainage conveyance for the Plan Area and traverses nearly the width of the Plan Area east to west. This greenbelt/drainage corridor would be approximately 1.5 miles in length and would have a width that varies from 100 to 200 feet. The North Greenbelt is also a multi-purpose greenbelt, providing drainage conveyance from a neighborhood park west to Excelsior Road. It would be approximately 0.5 mile in length and 200 feet wide. The North Greenbelt is aligned to continue to the west to link with the planned West Jackson Plan Area. The East Greenbelt is adjacent to the wetland preserve south of Kiefer Road. This greenbelt serves as a transition and buffer between the habitat area and the adjacent land uses, including simple features such as a Class I trail, post and cable fencing and minimal landscaping. The South Greenbelt is located under a large power line corridor in the southeast quadrant of the Plan Area. This greenbelt provides a linkage from the Town Center to the East Greenbelt, which leads to the Community Park and High School/Middle School. The South Greenbelt trail is designated to continue beyond the Plan Area boundary to the east, to link to the NewBridge Plan area. The greenbelts include a pedestrian and/or bicycle circulation trail system that connects the open space network, parks, schools, commercial and employment areas to the residential neighborhoods. Examples of active recreation envisioned to be accommodated within the upland portion of the greenbelts are disc golf, parcourse, and water stations. The portions of the greenbelts that directly abut a park site are anticipated to be granted park credit by the Cordova Recreation and Park District.

The Class 1 trails within the greenbelts are designed to function as maintenance/service access where appropriate. Sacramento County Parks Department will maintain trails within the greenbelts. Trail alignments shall meander to create a natural appearance. Pedestrian/bicycle trail nodes will be integrated at important/appropriate locations. Additional greenbelts and linear parkways would be used to extend the trail/pathway system into individual neighborhoods and non-residential developments. They may also be used as access into, and as connections between, greenbelts. Additional trail corridors, greenbelts, and linear parkways would be designated at the neighborhood level.

LANDSCAPE CORRIDORS

Landscape corridors are separate parcels that parallel larger roadways and act to buffer adjacent land uses and enhance the Plan Area aesthetics. Landscape corridors are designated along primary street corridors to provide pedestrian friendly streets with large, shaded walkways that are accessible to residents, encouraging use of non-vehicular modes of transportation.

INFRASTRUCTURE

An infrastructure master plan (IMP), prepared for the Project, identifies the infrastructure requirements for Phase 1A/1B and the remainder of the Project area, including on-site and off-site facilities necessary for each phase to proceed. Identified improvements include roadways, wastewater, water, storm drainage, and dry utilities. The IMP itemizes facilities required to support each phase, along with any over sizing of infrastructure which may be required for adjacent areas that would be served by the same facilities. The infrastructure required to initiate development of Area 1A/B is a significant portion of the overall Plan Area backbone facilities (approximately 80 percent, while Area 1A/B comprises approximately 45 percent of the total Plan Area).

CIRCULATION AND TRANSPORTATION

PROPOSED ROADWAY NETWORK

A network of primary streets, including the existing roads that border the Plan Area (i.e., Jackson Highway, Excelsior Road and Kiefer Boulevard) would provide primary vehicle access to and from the Plan Area. Grenville Drive (currently named Tree View Lane) would traverse the Plan Area north to south and would have both four-lane and two-lane segments. The remainder of the new internal collector and local residential streets would be two-lane streets on a grid pattern. Roadways in the Town Center would feature diagonal and parallel parking, wide sidewalks and slower traffic speeds, which would enhance the bicycle and pedestrian travel in the Town Center.

PROPOSED BIKE AND PEDESTRIAN NETWORK

CLASS I FACILITIES

Numerous Class I trails are provided throughout the Plan Area. The Class I trails are predominantly located within the greenbelts traversing the Plan Area and along Jackson Highway and Grenville Drive. The signature trails that are designed to provide significant connectivity are located within three primary greenbelts. The Class I trails located within the greenbelts would have minimal street crossings, elevating the safety and ease of use. These trails are envisioned to provide convenient opportunities for pedestrians and cyclists to use alternative modes to reach frequent destinations within the Plan Area, such as to schools, parks, shopping and transit. The Regional Trail within the Central Greenbelt is anticipated to connect with the planned West Jackson Master Plan Area to the west and the NewBridge Specific Plan area to the east. In addition, the paths provide emergency and maintenance vehicle access to open space areas.

Where a street is adjacent to open space, a park or a walkway, the Class I bike path (separated from the street) may replace the standard sidewalk. Where a cul-de-sac or loop street, multi-family or non-residential project is adjacent to the Class I path, a paved connection would be provided. The Class I system within a greenbelt may meander to minimize environmental impacts and create visual interest.

CLASS II BICYCLE LANES

Class II bicycle lanes are provided on expected bicycle commute corridors on Jackson Highway, Excelsior Road, and Kiefer Boulevard, which border the Plan Area. Internal to the Plan Area, several collector streets would have Class II bicycle lanes to provide ample routes for users to reach destinations, such as shopping, schools and parks. The Class II lanes also provide users with opportunities to use the on-street lane to reach the Class I off-street trails.

CLASS III BICYCLE ROUTES

Class III (shared use of general-purpose lane) facilities may also be provided on local streets. Class III routes are not identified on the Mobility Plan but would be determined in conjunction with the individual tentative maps.

PROPOSED REGIONAL TRANSIT PLAN

The Project would include a public transportation plan that meets the 2030 General Plan requirement that development outside the urban policy area locate 65 percent or more of all residential units within 0.5 mile of planned transit. The designated service transit service provider has not yet been confirmed but could potentially be Sacramento Regional Transit (SacRT).

The Project Applicant would develop a property-based funding mechanism that provides for long-term, perpetual funding of transit service in cooperation with SacRT. Initially, the Transit Enhancement Program would involve establishment of a funding mechanism(s) that would pay for bus and/or shuttle operations between the Plan Area and the Manlove Light Rail Station. The funding mechanism would be administered by the County and provide transit passes to residents and employees within the Plan Area to provide for access to the entire SacRT system.

Upon reaching 20 percent build-out of dwelling unit equivalents, program revenue would be sufficient to support peak-only bus service. At 40 percent build-out, SacRT would add additional peak-only trips and reverse-commute service. At 60 percent, SacRT would introduce all-day service with regular headways. At full build-out, the route would have 15-minute peak headways, with 30-minute base headways.

The Mobility Plan included in Chapter 4 of the specific plan (Appendix PD-1) designates a transit route that loops through the Plan Area and a Transit Center/stop in the Town Center on “Main Street.” The anticipated loop transit pattern would provide bus service within 0.25 mile of 90 percent of residences.

UTILITIES

GAS AND ELECTRICITY

SMUD owns and maintains power lines within the Plan Area and would be the provider of electrical service. Planned electric backbone facilities include a new substation at the northwest corner of the General Commercial site located at Jackson Road and Grenville Drive, just north of and adjacent to the SMUD/PG&E transmission corridor. Overhead 69 kV sub-transmission facilities would extend to and from the substation, in addition to

running along Jackson Highway, Excelsior Road and Kiefer Boulevard. Peak electric demand at buildout is estimated at 44 megavolt amperes (MVA).

PG&E would provide natural gas in the Plan Area upon request and in accordance with the tariffs on file with the California Public Utilities Commission (CPUC). Service would be extended from the existing gas main that traverses the northern portion of the Plan Area within the Kiefer Boulevard right-of-way to individual parcels in conjunction with roadway improvements.

WATER SUPPLY

Two transmission mains would be extended to the Plan Area from SWCA's existing Anatolia Terminal Storage and Pumping Facilities, which are located north of Kiefer Boulevard on Sunrise Boulevard. One main would be extended along Jackson Road and a second main would be extended along Kiefer Blvd.

Within the Plan Area, a new municipal water distribution network would be constructed. The distribution system was designed pursuant to the County's Standard Specifications related to peaking factors, fire flow requirements, and pressure range. New 12-inch "backbone" water lines would form the basis of a grid extending through the Plan Area as the backbone roads are constructed. Within neighborhoods, local distribution lines would be a minimum of 8-inches in diameter.

WASTEWATER

Most of the Plan Area would be served by a gravity collection system. The exception is 237-acres at the northwest corner of the Plan Area that requires a sewer pump station. Here, a force main would be extended from the pump station south along Excelsior Road for approximately 2,600 lineal feet to a discharge manhole in Excelsior Road, where it would enter the gravity system and continue to the trunk line at the intersection of Jackson Highway. In order to serve the Plan Area, an offsite sewer trunk line must be extended from the Bradshaw Interceptor to the intersection of Jackson Road and Excelsior Road, in the southwest corner of the Plan Area.

DRAINAGE FACILITIES

The planned drainage system improvements include a storm water pipe collection network and two constructed drainageways (the North Drainage Way and the Central Drainage Way), which would provide flood control and water quality treatment. Generally, these drainageways would be designed as wide, integrated drainage corridors, with meandering low flow swales to provide conveyance of small storm events and water quality and detention basins to provide treatment and peak flow attenuation. At-grade, flat benches would be provided on both sides of the channelized drainageways, with a Class I trail along one side that would also provide access to the drainage facilities for maintenance. The drainage corridors were analyzed for the 10, 100, and 200-year level of flood protection in accordance with the County Department of Water Resources and the Regional Water Quality Control Board standards.

The North Drainage Way (Morrison Creek tributary) would extend through the northwest quadrant of the Plan Area to the discharge point at Excelsior Road. A small tributary shed area north of Kiefer Boulevard would also be piped to the North Drainage Way. This drainage would have one detention basin.

The Central Drainage Way (Elder Creek tributary) would accept most of the drainage collection for the Plan Area. The drainageway would extend the length of the Plan Area, with the discharge point located at the intersection of Excelsior and Jackson Roads. The Central Drainage Way varies in width, getting progressively larger in size as it extends from east to west. The three detention basins proposed in the Central Drainage Way basins may be constructed as part of the initial phase of development or may be sequenced, as needed, as development progresses.

Public Services

The Project also includes a total of four school sites; three elementary schools spread throughout the Plan Area and one combined high school/middle school near the northeastern corner of the Plan Area. Each school site would be co-located with a park. The land use plan also provides for a 1.0-acre site for a water storage tank north of Kiefer Boulevard.

In addition, the Sacramento Metropolitan Fire District (Metro Fire) has identified the need for a new fire station within the Plan Area. The final location and site plan for the new fire station will ultimately be determined based on the location of a new fire station within the adjacent NewBridge Specific Plan area; negotiations on the exact location of that station are currently in progress. Metro Fire has opted not to identify a specific site within the Plan Area at this time; however, they are committed to developing a new station within the Plan Area, most likely somewhere within the Town Center with access to Jackson Highway. The station would be a minimum of 3.0 acres, although it could ultimately be up to 5.0 acres. Metro Fire intends to purchase the property at fair market value using development impact fees once the most appropriate location can be determined. The Project provides for several potential sites that would be suitable for the new fire station.

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3 ALTERNATIVES

INTRODUCTION

This chapter describes alternative versions of the Project described in Chapter 2, "Project Description," that could lessen impacts or that provide meaningful information to foster informed decisions. The following impact discussions focus on a comparative evaluation of potential effects. For additional background and context, the reader is encouraged to consult the topical chapters that follow (i.e., Chapters 4 through 20).

REGULATORY CONTEXT

CALIFORNIA ENVIRONMENTAL QUALITY ACT REQUIREMENTS

The State CEQA Guidelines require analysis of a range of reasonable alternatives to a 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 potential feasibility of an alternative may be determined based on a variety of factors, including economic viability, availability of infrastructure, and other plans or regulatory limitations. The feasible alternatives to be considered must focus on alternatives that are capable of eliminating or substantially reducing the significant adverse impacts caused by implementation of the Project (Guidelines Section15126.6(c)), and alternatives to the "whole of the project" rather than the project's component parts[1]. 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].).

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). The State CEQA Guidelines further require that the alternatives be compared to the project's environmental impacts and that a "No Project" Alternative is considered (Section 15126.6[d] [e]).

LEVEL OF ANALYSIS

An EIR need not evaluate the environmental effects of alternatives in the same level of detail as the project, but must include enough information to allow meaningful evaluation, analysis, and comparison with the project. The primary intent of the alternatives analysis is to disclose other ways that the objectives of the project could be attained while reducing the magnitude of, or avoiding, the environmental impacts of the Project.

[1] Big Rock Mesas Property Association v. Board of Supervisors of the County of Santa Barbara (2d Dist. 1977) 73 Cal. App. 3d 218)

CONSIDERATIONS FOR SELECTION OF ALTERNATIVES

ATTAINMENT OF PROJECT OBJECTIVES

As described above, one factor that must be considered in selection of alternatives is the ability of a specific alternative to attain most of the basic objectives of the Project (CEQA Guidelines Section 15126.6[a]). Chapter 2, "Project Description," articulates the following Project objectives:

1. Develop an economically viable mixed-use project in close proximity to the urban core.
2. Develop a marketable project which minimizes greenhouse gas (GHG) emissions.
3. Develop an economically-stable community where property values are retained over time.
4. Develop a project containing a variety of housing types so as to create a demographically mixed community.
5. Develop a project which allows for easy access to green space, schools, and a town center containing various retail, dining, and other commercial services.
6. Develop a project which provides employment opportunities for workers of all income levels.
7. Develop a project which promotes a jobs-housing balance in the Jackson Highway/Mather area.
8. Develop a project which allows residents to engage in short, non-vehicle commutes.
9. Develop a project which utilizes proven design practices which result in the creation of strong communities that remain economically stable over time.
10. Develop a project which contains a circulation system that promotes walking, biking, and the use of public transit.
11. Develop a project which contains a comprehensively planned infrastructure system.
12. Develop a project which ensures funding for the on-going maintenance needs of parks, open space facilities, public services and other infrastructure.
13. Develop a project which preserves, to the extent feasible, the area's most important and valuable biological resources with a wetland preserve.
14. Develop a project which contains adequate school facilities for community residents and assists in meeting the school facility needs of surrounding projects.
15. Develop a project which includes a community park and a variety of neighborhood parks sufficient to meet park district requirements.

Environmental Impacts of the Project

Chapters 4 through 20 of this Draft EIR address the environmental impacts of implementing the Project. Potentially feasible alternatives were developed with consideration of avoiding or lessening the significant adverse impacts of the project, as identified in this Draft EIR. In summary, the significant and unavoidable impacts of the Project are:

- Degradation of Existing Visual Character or Quality
- Introduction of New Sources of Light
- Conversion of Protected Farmland to Non-Agricultural Uses
- Operational Emissions of Criteria Pollutants and Precursors
- Inconsistency with an Applicable Air Quality Plan
- Exposure to Objectionable Odors
- Loss of Habitat for Vernal Pool Invertebrates
- Loss of Wetlands and Other Waters
- Inconsistency with the South Sacramento Habitat Conservation Plan (SSHCP)
- Potential for Flooding of Adjacent Parcels
- Potential for Flooding of Beach Stone Lakes
- Construction Noise
- Operational Traffic Noise
- Stationary Noise Sources
- Substantial Increase in Existing Ambient Noise Levels
- Roadway Segment Operations
- Intersection Operations
- Congestion of Freeway Facilities
- Roadway Function

Range of Alternatives

In accordance with Section 15126.6(a) of the State CEQA Guidelines, an EIR must describe a range of reasonable alternatives to the Project that would feasibly attain most of the basic objectives of the Project but would avoid or substantially lessen any of the significant effects of the Project and evaluate the comparative merits of the alternatives. Section 15126.6(a) also provides that an EIR need not consider every conceivable alternative to a project. Instead, the EIR must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

The Project and alternatives contemplated in this EIR are the product of a planning process that has included a variety of stakeholders and has evolved in response to

changes in regulation and direction. As discussed further below, the extensive planning process included preliminary evaluation of alternatives to the whole of the Project, including different land uses and alternative project locations. The Project is now sufficiently defined. Feasible alternatives are generally limited to property owned by the Project Applicant and surrounding properties and the general parameters of the best uses of this property have been defined.

An EIR need not evaluate an alternative that is considered speculative, theoretical, or unreasonable (State CEQA Guidelines Section 15126.6(f)(3). As such, the range of alternatives evaluated in this analysis includes: three alternatives that closely resemble the Project, but propose focused changes in land uses (Alternatives 1A, 1B, and 1C); two alternatives that increase the portion of the Plan Area set aside as wetland preserve (Alternatives 2 and 2A) and are consistent with the SSHCP; an alternative that provides a larger preserve area than required by the SSHCP (Alternative 3); and an alternative that does not change the light industrial land use designation of the large parcel currently occupied by Sacramento Raceway (Alternative 4). The following evaluation also includes a “No Project” Alternative, the purpose of which is to allow the hearing body to compare the impact of approving the Project to the impacts of not approving the Project. The No Project Alternative describes what could occur under existing zoning.

As described above, the Project would result in significant and unavoidable impacts related to aesthetics, agricultural resources, air quality, biological resources, hydrology and water quality, noise, and traffic and circulation. Many of these impacts are the inevitable result of developing such a large master planned community. As demonstrated through the evaluation below, changing the layout of the Project could reduce impacts to some degree, but it is unlikely that the impacts could be reduced to levels which are not significant without radically changing the objectives and scope of the Project.

PROJECT DEVELOPMENT

The Jackson Township Specific Plan evolved substantiality prior to the filing of the plan application in 2013 as a result of several planning efforts involving the greater project area that were occurring during the period leading up to the 2013 submittal. The result was a submitted plan that is more environmentally sensitive than the one which had first been under consideration by the Project Applicant. Three major planning efforts are relevant in that context and influenced the development of the submitted plan. They are:

- The adopted Sacramento Area Council of Governments (SACOG’s) Sacramento Region Blueprint
- The adopted Sacramento County’s 2030 General Plan Update
- The adopted SSHCP

The first two plans (Sacramento Blueprint and 2030 General Plan) adopted and encourage various smart growth principals to combat global warming. The SSHCP resulted in the development of a comprehensive program to assure compliance with the Federal Endangered Species Act and similar State requirements. Each of these planning efforts were in development and public review concurrent with the development of the submitted Project and were closely monitored by the Project

Applicant as it developed the plan. As a result, the Project Applicant modified design features within the plan to be consistent with the adopted smart growth principals and habitat conservation strategies. These modifications were incorporated into the modified design features to the plan that was ultimately submitted to the County in 2013.

The Sacramento Blueprint was a comprehensive planning effort involving the entire Sacramento Region with an emphasis on “smart growth” principles. These principles are design measures intended to reduce vehicle miles traveled (VMT) and decrease GHG emissions. The Jackson Township Specific Plan, as submitted in 2013, reflects many of those design principles. Similarly, influential was the ongoing discussion which was occurring regarding the 2030 General Plan Update. That update effort centered on a desire to address AB 32 and SB 375 requirements to reduce GHG emissions. Ultimately, the Jackson Township Specific Plan was developed to include design features that reflected this guidance, including: high average density per acre, mixed use development; intensity hubs; jobs/housing linkage, service and recreation within walking distance of all residences, a robust transit plan, and a robust pedestrian and bike trail system. These various design features all are considered “smart growth” measures which would assist with decreasing GHG emissions by reducing VMT. Together they are intended to produce more compact development with a mixture of uses, including employment and residential, which would lessen the need for vehicle travel.

Finally, during the time the Jackson Township Specific Plan was under preparation, the County and other local entities were simultaneously working with the United States Army Corps of Engineers and the community on the SSHCP. The purpose of the SSHCP is to preserve significant habitat for protected species found in the southern portion of Sacramento County. As the work on the SSHCP progressed, various discussions occurred between the Project Applicant and the preparers of the SSHCP. These discussions resulted in the Jackson Township Plan submitted in 2013 providing for a preserve area of 214± acres and a later prepared alternative plan (Alternative 2) with an even larger preserve consisting of 260± acres. Alternative 2 is consistent with the preserve area ultimately included in the SSHCP, as adopted in 2018, and provides an alternative consistent with the SSHCP that may be considered for approval by the Board of Supervisors.

As indicated above, the Project, as currently proposed, is the result of discussions between the Project Applicant and County staff, as well as input from other regulatory agencies and the public. Through this process, the severity of effects has been reduced due to the use of a more efficient land use pattern, inclusion of a multi-modal trail system, expansion of the wetland preserve, and incorporation of public transportation.

Alternatives Dismissed from Further Evaluation

Consistent with CEQA Guidelines Section 15126.6(c), a brief discussion of those alternatives considered but rejected as infeasible follows. An alternative may be considered but not carried forward for various reasons, such as not meeting the objective(s) of the Project; not being feasible; conditions outside the control of the Project Applicant (e.g., land ownership, right of way acquisition); or other constraints.

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 (1,391 acres) and would need to be able to be acquired, at least in part, by the Project 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. The offsite alternative would also need to be within the Urban Services Boundary (USB) and either within the Urban Policy Area (UPA) or adjacent to the UPA such that incorporation into the UPA would be a logical extension. As described further in Chapter 15, "Land Use," Sacramento County 2030 General Plan Policy LU-119 establishes that proposed UPA expansions must have significant borders that are adjacent to the existing UPA or a city boundary. The boundary of the UPA expansion must be logical and consistent with LU-119 for the County Board of Supervisors to approve the Project.

Although there are other areas within the county that could potentially be developed to accommodate the anticipated growth in the Jackson Corridor, the Plan Area is intended to make use of property already owned by the Project Applicant. With such a large project area, it is difficult to bring together multiple property owners for a large-scale planning process. With the Project Applicant owning 64 percent of the Plan Area, the planning process is simpler and more likely to eventually build out successfully.

Moreover, while an offsite alternative could feasibly achieve many of the Project objects, one of the stated objectives of the Project is to "develop a project which promotes a jobs-housing balance in the Jackson Highway/Mather area." The County has directed long-term planning efforts to prepare for future development along Jackson Road (also referred to as Jackson Highway). Despite the area's proximity to urban development and jobs in Sacramento, Rancho Cordova, and Elk Grove, development potential has been limited due to the proximity of mining activities and military operations at the former Mather Air Force Base. However, with the decommissioning of Mather Air Force Base, many of the prior limitations on the land have been lifted, making this area an acceptable and convenient location for new development. Maintaining consistency with this goal would dramatically reduce the potential locations of an offsite alternative.

There are limited areas of land of a similar size adjacent to, or within, the UPA, most of which are already under consideration as other potential growth areas, and this is the only area that meets the Project's objectives and is also majority owned by the Project Applicant. For these reasons, an offsite alternative was determined to be infeasible.

Description of Alternatives

No Project Alternative

Section 15126.6(e) of the CEQA Guidelines requires that an EIR evaluate and analyze the environmental impacts of the No Project Alternative to examine and compare the potential environmental consequences associated with not approving the Project. For the purposes of this analysis, the No Project Alternative would allow for development

consistent with the existing entitlements on properties within the Plan Area. The Plan Area is zoned Light Industrial (M-1), Agricultural 80 (AG-80), and Interim Agricultural Reserve (IR). Refer to Chapter 2, “Project Description,” for additional information about existing zoning.

It is assumed that the western portion of the Plan Area, including the triangle of property north of Kiefer Boulevard, would be built out with light industrial uses. Assuming the minimum lot size of 6,000 square feet, this roughly 413-acre area could be subdivided into nearly 3,000 parcels. Alternatively, fewer large buildings could be constructed in this portion of the Plan Area. Generally, permitted uses in this zone consist of the manufacturing and assembly of processed materials within an enclosed area. It is assumed for the purpose of this analysis that the raceway parcel would continue to operate in a manner consistent with existing conditions.

Similarly, the rural residences currently located along Jackson and Excelsior Roads would remain under the No Project Alternative. The AG-80 designation permits one single-family residence per 80-acre parcel. There are only three parcels of at least 80 acres with the AG-80 zoning in the Plan Area. An 80-acre parcel near the center of the Plan Area could support a residence, subject to consistency with the Surface Mining Combining Zoning District, and a 200-acre parcel with one existing residence could be divided to support an additional residence. The parcel in the northwest corner of the Plan Area is roughly 149 acres and already includes a residence. Therefore, development consistent with existing zoning could result in industrialization and relatively intense use of the northwest corner of the Plan Area but would generate little land use change in the remainder of the Plan Area.

Alternative 1A: Increased Office

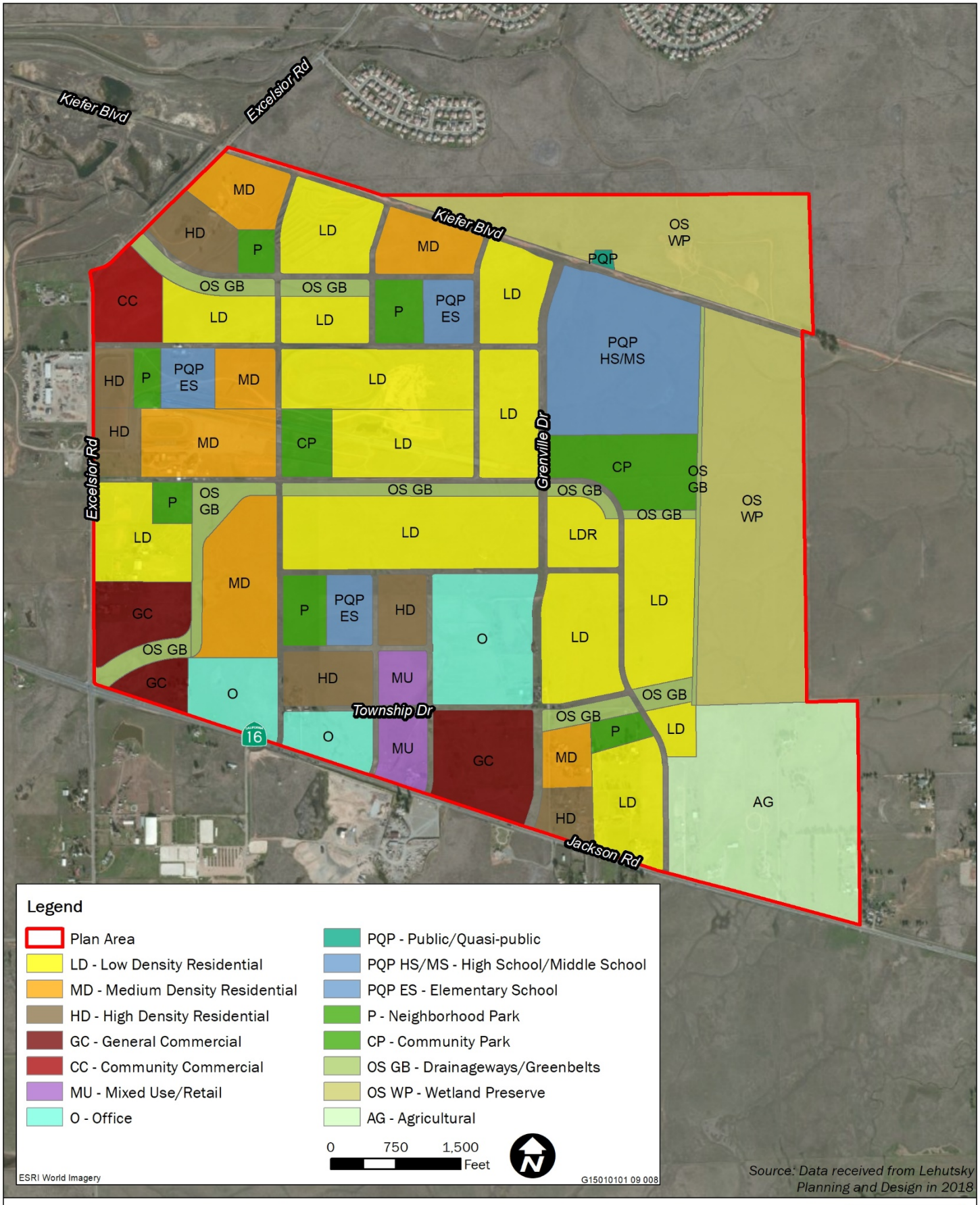
Alternative 1A would replace an approximately 22.3-acre Medium Density Residential parcel, a 16.9-acre High Density Residential parcel, and a proposed roadway between the two parcels with one approximately 40.1-acre Office parcel. The remaining land uses would be consistent with the Project land use plan. Overall, this alternative would result in a reduction of 438 residential units (290 medium density units and 148 high-density units) when compared to the Project. In their place, there could be an increase of up to 873,300 square feet of office space developed within the Plan Area. A detailed land use summary of Alternative 1A is provided in Table Alt-1, and a land use plan is provided in Plate Alt-1. As shown in the table, overall, Alternative 1A could result in the development of 5,705 residential units, and 2,869,400 square feet of commercial, office, and mixed-use space.

Table Alt-1: Alternative 1A Land Use Summary

Residential Designations	Acres	Average Density	Density Range (DU/acre)	DU	% of DU
LD-Low Density Residential	355.7	6.0	1.0–10.9	2,134	37.4%
MD-Medium Density Residential	114.0	13.0	11.0–19.9	1,482	26.0%
HD-High Density Residential	68.6	29.0	20.0–30.0	1,989	34.9%[7]
Subtotal	**538.3**			**5,605**	**98.3%**
Commercial + Office Zones	**Acres**	**FAR**	**Square Footage**	**DU**	**% of DU**
GC-General Commercial	59.3	0.25	645,700	n/a[1]	
CC-Community Commercial	17.6	0.25	191,600	n/a[1]	
MU-Mixed Use	19.6	0.50	427,000	100[5]	1.7%[7]
O-Office	73.7	0.50	1,605,100	n/a[1]	
Subtotal	**170.2**		**2,869,400**	**100**	**1.7%**
Public/Quasi Public Zones	**Acres**				
PQP-Tank Site	1.0				
PQP-High School/Middle School	70.0				
PQP-Elementary School	30.0				
Subtotal	**101.0**				
Park + Open Space Zones	**Acres**				
CP-Community Park	39.2[3]				
P-Neighborhood Park	39.1[3]				
OS-Wetland Preserve	214.3				
OS-Greenbelt/Drainage Corridor	60.9				
OS-Landscape Corridor	14.5				
Subtotal	**368.0**				
AG-Agriculture	109.8				
RW-Primary Roadways	103.7				
TOTAL	**1,391.0**		**10.4[6]**	**5,705**	**100%**

Notes: DU = dwelling unit, FAR = Floor-Area Ratio (i.e. a FAR of 0.25 means that for every 1 acre of land in the category–like General Commercial–0.25 acres will be used for a structure)

1. Dwelling units are not permitted in these designations.
2. Park requirement calculation (not including AG zoning): LD/MD 3,616 DU x 0.0142 for a total of 51.4 acres and HD/MU 2,089 DU x 0.0119 for a total of 24.9 acres. Total acres = **76.3 acres.**
3. Park credit calculations: 78.3 acres of Community/Neighborhood Parks + 3.0 acres Greenbelt where abutting the 28.6-acre Community Park = **81.3 acres.**
4. 100 dwelling units are assigned to the 8.2-acre MU parcel only, 0 units assigned to the 11.4-acre parcel.
5. Double net density calculation: 5,705 DU/546.5 acres (538.3 acres + 8.2 acres of MU) for a total of **10.4 DU/acres.** Note: this does not include the 109.3 acres of AG or the 10% net residential acreage exclusion allowed per Policy LU 120 CB-1.
6. A minimum 34.8% of a Master Plan's units must be accommodated on multi-family zoned land, this includes HD and MU parcel allocations of 2,089 DU or 36.6%.



Source: Data received from Lehutsky Planning and Design in 2018

Plate Alt-1: Alternative 1A Land Use Diagram

ASCENT ENVIRONMENTAL

At buildout, the population of the Plan Area is anticipated to be approximately 15,361 residents with implementation of Alternative 1A (see Table Alt-2).

Table Alt-2: Alternative 1A Population Projections

Residential Designations	DU	Person per DU	Population
LD-Low Density Residential	2,134	3.1	6,615
MD-Medium Density Residential	1,482	2.8	4,150
HD-High Density Residential[1]	2,089	2.2	4,596
Total	**5,705**		**15,361**

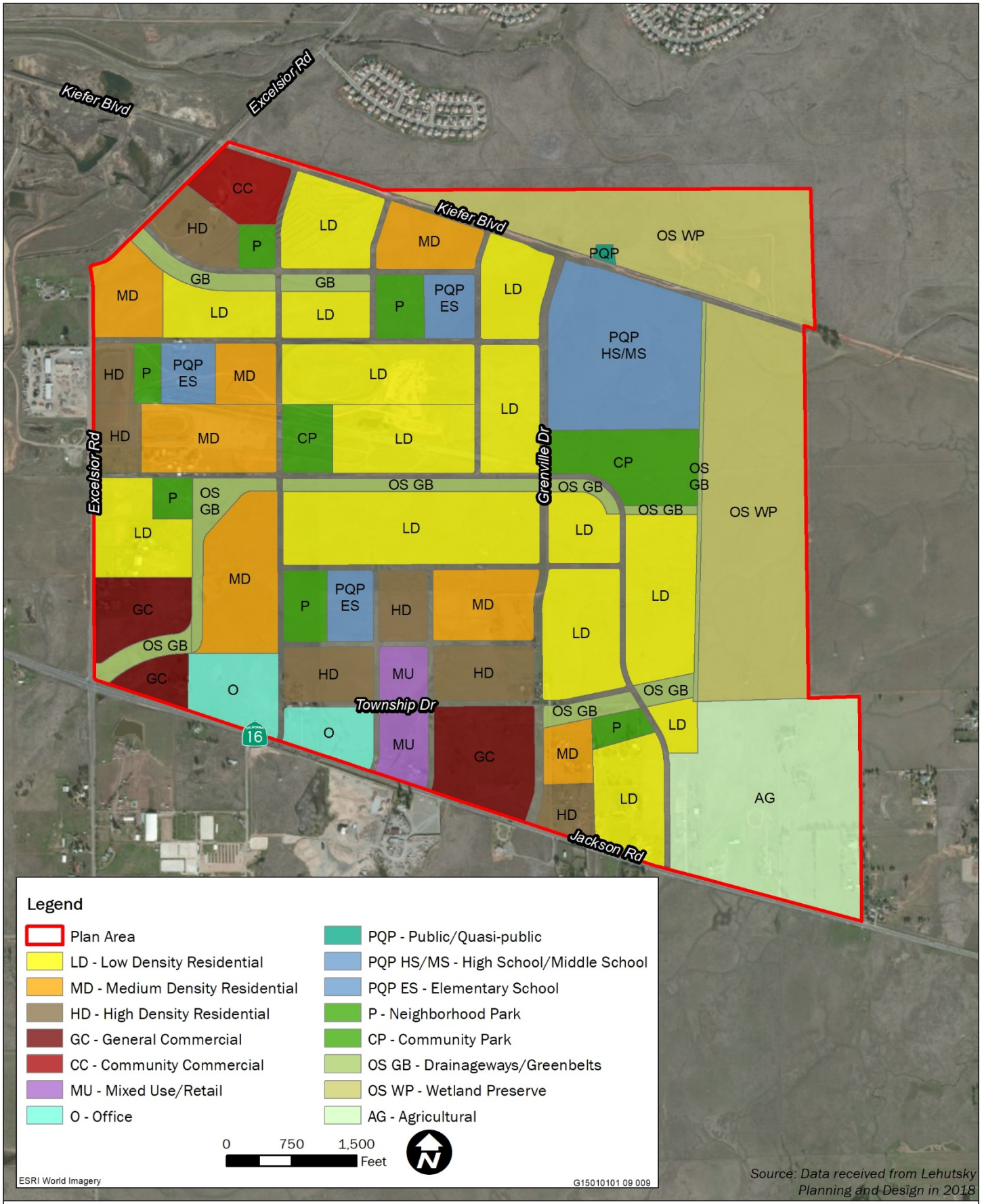
Source: Prepared by Ascent based on metrics provided in the Jackson Township Specific Plan, Chapter 6

1. Includes 100 Mixed-Use units.

ALTERNATIVE 1B: NORTHWEST CORNER RESIDENTIAL-COMMERCIAL SWAP

The Project Applicant designed Alternative 1B based on feedback from the residents of the Independence at Mather community: the community expressed a desire to see the Medium Density Residential proposed at the northwest corner of the Plan Area under the Project located elsewhere. Alternative 1B would reposition the three parcels in the northwestern corner of the Plan Area. The 17.6-acre Community Commercial parcel would be replaced with a 17.6-acre Medium Density Residential parcel. Likewise, the 14.1-acre Medium Density Residential parcel proposed under the Project would be replaced with a 16.1-acre Community Commercial parcel under this alternative. Simply put, the two proposed uses would switch locations within the Plan Area. Under Alternative 1B, the size of the parcel that would now contain Community Commercial uses would increase in size from 14.1 acres to 16.1 acres to accommodate a large commercial area. The High-Density Residential parcel proposed between these two parcels would remain in the same location but would decrease in size from 16.6 acres to 14.6 acres to accommodate the increase in the new Community Commercial parcel.

Similar to Alternative 1A, this would result in some adjustments to the number of proposed residential units and commercial square footage. Under Alternative 1B, the larger Medium Density Residential parcel would result in an increase of 45 medium density units over the Project. The number of high-density units would decrease by 50, resulting in an overall decrease of five residential units. Overall, Alternative 1B would result in up to 6,138 units (Table Alt-3 and Plate Alt-2). The proposed amount of Community Commercial space would decrease by 16,300 square feet when compared to the Project. Like Alternative 1A, the remaining proposed land uses, including Public/Quasi Public, Park and Open Space, and Agricultural uses, would be unchanged. Unlike Alternative 1A, this alternative would not result in a change in the acreage of land for Primary Roadways.



Source: Data received from Lehutsky Planning and Design in 2018

Plate Alt-2: Alternative 1B Land Use Diagram

ASCENT ENVIRONMENTAL

Table Alt-3: Alternative 1B Land Use Summary

Residential Designations	Acres	Average Density	Density Range (DU/acre)	DU	% of DU
LD- Low Density Residential	355.7	6.0	1.0–10.9	2,134	34.8%
MD-Medium Density Residential	139.8	13.0	11.0–19.9	1,817	29.6%
HD- High Density Residential	83.5	25.0	20.0–30.0	2,087	34.0%[7]
Subtotal	**579.0**			**6,038**	**98.4%**
Commercial + Office Zones	**Acres**	**FAR**	**Square Footage**	**DU**	**% of DU**
GC-General Commercial	59.3	0.25	645,700	n/a[1]	
CC-Community Commercial	16.1	0.25	175,300	n/a[1]	
MU-Mixed Use	19.6	0.50	427,000	100[5]	1.6%[7]
O- Office	33.6	0.50	731,800	n/a[1]	
Subtotal	**128.6**		**1,979,800**	**100**	**1.6%**
Public/Quasi Public Zones	**Acres**				
PQP-Tank Site	1.0				
PQP-High School/Middle School	70.0				
PQP-Elementary School	30.0				
Subtotal	**101.0**				
Park + Open Space Zones	**Acres**				
CP- Community Park	39.2[3]				
P- Neighborhood Park	39.1[3]				
OS- Wetland Preserve	214.3				
OS- Greenbelt/Drainage Corridor	60.0				
OS- Landscape Corridor	14.5				
Subtotal	**368.0**				
AG-Agriculture	109.8				
RW- Primary Roadways	104.6				
TOTAL	**1,391.0**		**10.45[6]**	**6,138**	**100%**

Notes: DU = dwelling unit, FAR = Floor-Area Ratio (i.e. a FAR of 0.25 means that for every 1 acre of land in the category–like General Commercial–0.25 acre will be used for a structure)

1. Dwelling units are not permitted in these designations.
2. Park requirement calculation (not including AG zoning): LD/MD 3,951 DU x 0.0142 for a total of 56.1 acres and HD/MU 2,187 DU x 0.0119 for a total of 26.0 acres, for a combined total of 82.1 acres.
3. Park credit calculations: 78.3 acres of Community/Neighborhood Parks + 3.0 acres of Greenbelt where abutting the 28.6-acre Community Park = 81.3 acres
4. 100 dwelling units are assigned to the 8.2-acre MU parcel only, 0 units assigned to the 11.4-acre parcel.
5. Double net density calculation: 6,138 DU/587.2 acres (579 acres + 8.2 acres of MU) for a total of 10.45 DU/acres. Note: this does not include the 109.8 acres of AG or the 10% net residential acreage exclusion allowed per Policy LU 120 CB-1.
6. A minimum 34.8% of a Master Plan's units must be accommodated on multi-family zoned land, this includes HD and MU parcel allocations of 2,187 DU or 35.6%.

At buildout, the population of the Plan Area is anticipated to be approximately 16,514 residents with implementation of Alternative 1B (see Table Alt-4). The requested entitlements would be the same as the Project under this alternative.

Table Alt-4: Alternative 1B Population Projections

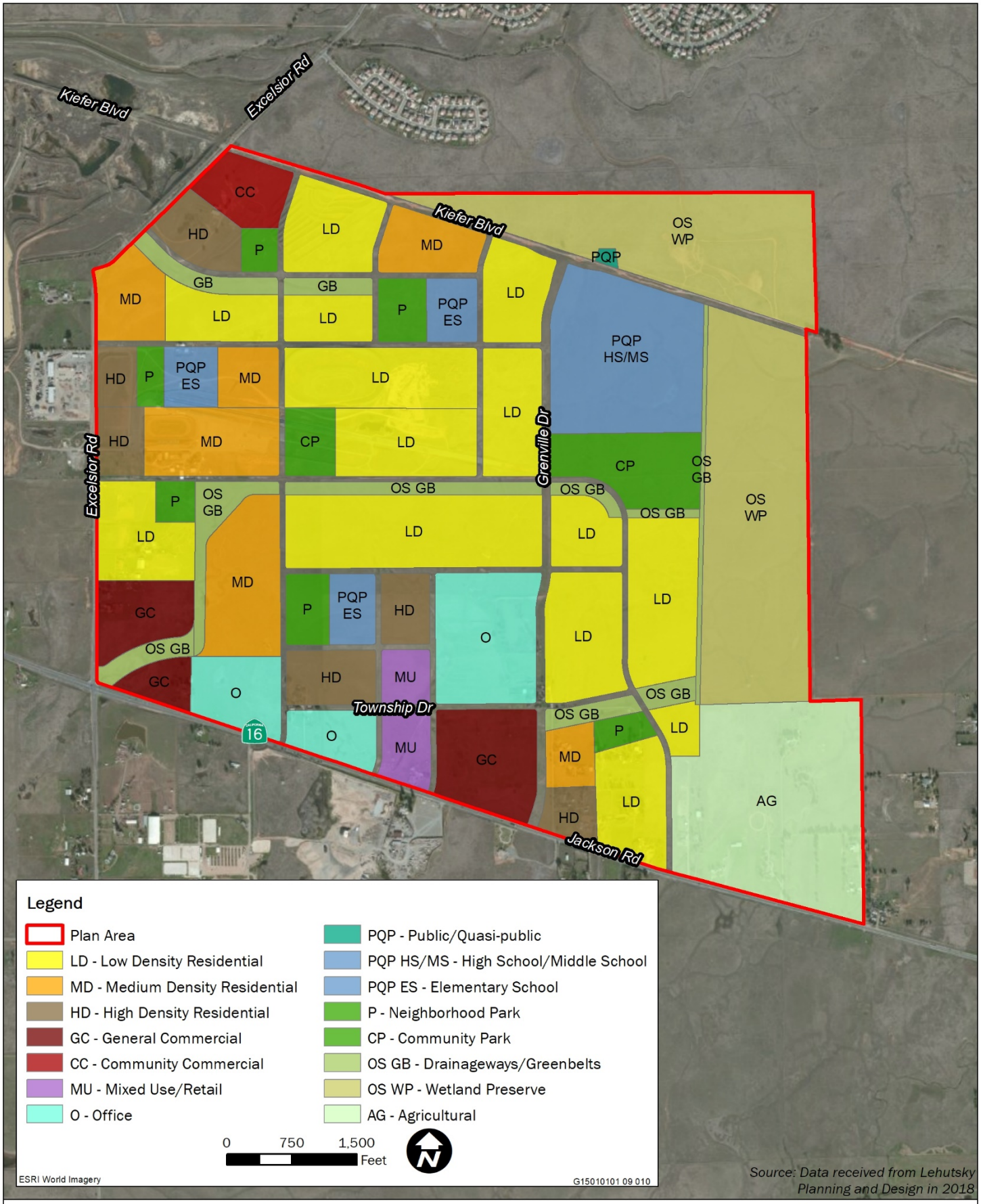
Residential Designations	DU	Person per DU	Population
LD-Low Density Residential	2,134	3.1	6,615
MD-Medium Density Residential	1,817	2.8	5,088
HD-High Density Residential[1]	2,187	2.2	4,811
Total	**6,138**		**16,514**

Source: Prepared by Ascent based on metrics provided in the Jackson Township Specific Plan, Chapter 6

1. Includes 100 Mixed-Use units.

ALTERNATIVE 1C: INCREASED OFFICE WITH NORTHWEST CORNER RESIDENTIAL-COMMERCIAL SWAP

Alternative 1C is a combination of Alternatives 1A and 1B. Like Alternative 1A, this alternative would replace a 22.3-acre Medium Density Residential parcel, 16.9-acre High Density Residential parcel, and bisecting roadway with a 40.1-acre Office parcel with an additional 873,300 square feet of office space. Alternative 1C also incorporates the three repositioned parcels in the northwest corner of the Plan Area, including the reduction of community commercial space to 175,300 square feet. Overall, Alternative 1C would result in the development of 5,692 residential units, including 2,134 low density, 1,527 medium density, 1,931 high-density units, and 100 mixed use residential units. This represents an overall reduction of 451 units, including 245 fewer medium density units and 206 high-density units compared to the Project. Community commercial space would decrease by 16,300 square feet and office space would increase by 873,300 square feet. All other proposed land uses would remain consistent with the proposed Project. See Table Alt-5 for the detailed land use summary and Plate Alt-3 for the land use plan.



Source: Data received from Lehutsky Planning and Design in 2018

Plate Alt-3: Alternative 1C Land Use Diagram

ASCENT ENVIRONMENTAL

Table Alt-5: Alternative 1C Land Use Summary

Residential Designations	Acres	Average Density	Density Range (DU/acre)	DU	% of DU
LD- Low Density Residential	355.7	6.0	1.0–10.9	2,134	37.5%
MD-Medium Density Residential	117.5	13.0	11.0–19.9	1,527	26.8%
HD- High Density Residential	66.6	29.0	20.0–30.0	1,931	33.9%[7]
Subtotal	**539.8**			**5,592**	**98.2%**
Commercial + Office Zones	**Acres**	**FAR**	**Square Footage**	**DU**	**% of DU**
GC-General Commercial	59.3	0.25	645,700	n/a[1]	
CC-Community Commercial	16.1	0.25	175,300	n/a[1]	
MU-Mixed Use	19.6	0.50	427,000	100[5]	1.8%[7]
O- Office	73.7	0.50	1,605,100	n/a[1]	
Subtotal	**168.7**		**2,853,100**	**100**	**1.8%**
Public/Quasi Public Zones	**Acres**				
PQP-Tank Site	1.0				
PQP-High School/Middle School	70.0				
PQP-Elementary School	30.0				
Subtotal	**101.0**				
Park + Open Space Zones	**Acres**				
CP- Community Park	39.2[3]				
P- Neighborhood Park	39.1[3]				
OS- Wetland Preserve	214.3				
OS- Greenbelt/Drainage Corridor	60.9				
OS- Landscape Corridor	14.5				
Subtotal	**368.0**				
AG-Agriculture	109.8				
RW- Primary Roadways	103.7				
TOTAL	**1,391.0**		**10.4[6]**	**5,692**	**100%**

Notes: DU = dwelling unit, FAR = Floor-Area Ratio (i.e. a FAR of 0.25 means that for every 1 acre of land in the category–like General Commercial–0.25 acre will be used for a structure)

1. Dwelling units are not permitted in these designations.
2. Park requirement calculation (not including AG zoning): LD/MD 3,661 DU x 0.0142 for a total of 52.0 acres and HD/MU 2,031 DU x 0.0119 for a total of 24.2 acres, for a combined total of **76.2 acres.**
3. Park credit calculations: 78.3 acres of Community/Neighborhood Parks + 3.0 acres of Greenbelt where abutting the 28.6-acre Community park or a total of **81.3 acres**
4. 100 dwelling units are assigned to the 8.2-acre MU parcel only, 0 units assigned to the 11.4-acre parcel.
5. Double net density calculation: 5,692 DU/548 acres (539.8 acres + 8.2 acres of MU) for a total of **10.4 DU/acres.** Note: this does not include the 109.3 acres of AG or the 10% net residential acreage exclusion allowed per Policy LU 120 CB-1.
6. A minimum 34.8% of a Master Plan's units must be accommodated on multi-family zoned land, this includes HD and MU parcel allocations of 2,031 DU or 35.7%.

At buildout, the population of the Plan Area is anticipated to be approximately 15,359 residents with implementation of Alternative 1C (see Table Alt-6).

Table Alt-6: Alternative 1C Population Projections

Residential Designations	DU	Person per DU	Population
LD-Low Density Residential	2,134	3.1	6,615
MD-Medium Density Residential	1,527	2.8	4,276
HD-High Density Residential[1]	2,031	2.2	4,468
Total	**5,692**		**15,359**

Source: Prepared by Ascent based on metrics provided in the Jackson Township Specific Plan, Chapter 6.

1. Includes 100 Mixed-Use units.

ALTERNATIVE 2: SSHCP-CONSISTENT WETLAND PRESERVE

The analysis of Alternative 2 can be found along with the Project analysis in Chapters 4 through 20 of this EIR, but a brief description is provided here. Alternative 2 was developed to address concerns over the potential loss of some wetlands and habitat areas located east of the future Grenville Drive adjacent to, but outside of, the wetland preserve proposed as part of the Project (see Plate Alt-4). Under this alternative, a large portion of the area designated as Low Density Residential as part of the Project and Alternatives 1A through 1C would be included as an additional wetland preserve area. The area, referred to as “the thumb,” would jut out to the west from the proposed wetland preserve to include a cluster of vernal pools not proposed for preservation under the Project and would nearly reach Tree View Lane (to be renamed Grenville Drive). The thumb would be immediately be surrounded by a greenbelt area, with Low Density Residential surrounding it. This reconfiguration of uses immediately surrounding the expanded preserve area would result in a slight increase in size and change in configuration of the proposed Community Park. To account for the loss of land designated for Low Density Residential to accommodate the additional preserve area, one of the large parcels adjacent to Kiefer Road would change from Medium Density Residential to Low Density Residential, which would result in an increase in the amount of Low Density Residential and a decrease in Medium Density Residential. In addition, approximately 35.1 acres of land intended to remain designated as Agriculture under the Project would be re-designated to Low Density Residential. Aside from those changes, the Land Use plan would remain consistent with the Land Use plan for the Project. Plate Alt-5 graphically summarizes the differences between the Project and Alternative 2.

Overall, Alternative 2 would increase the size of the wetland preserve from 214.3 acres to approximately 259.8 acres and would preserve a cluster of additional vernal pools, for an additional 4.6 acres of waters of the U.S. on property owned by the Project Applicant. The size of the larger Community Park would increase from 28.6 acres to approximately 30.0 acres. The acreage of Low Density Residential would go from 355.7 acres with 2,134 units under the Project to 382.6 acres with 2,295 units. Land designated for Medium Density Residential would go from 136.3 acres with 1,772 units to 124.5 acres with 1,245 units. Land designated for High Density Residential would go from 85.5 acres with 2,137 units to 82.0 acres with 2,050 units. Like the Project, Alternative 2 would include 100 units in the mixed-use parcel.

The wetland preserve in Alternative 2 was designed to be consistent with the SSHCP preserve boundary. With the 45.5-acre increase in area designated Wetland Preserve, Alternative 2 would result in a net decrease in areas designated for Agriculture (35.1 acres) and Primary Roadways (17.9 acres) (Table Alt-7).

Table Alt-7: Alternative 2 Land Use Summary

Residential Designations	Acres	Average Density	Density Range (DU/acre)	DU	% of DU
LD- Low Density Residential	382.6	6.0	1.0-8.9	2,295	40.3%
MD-Medium Density Residential	124.5	10.0	9.0-15.9	1,245	21.9%
HD- High Density Residential	82.0	25.0	16.0-30.0	2,050	36.0%
Subtotal	**589.1**			**5,590**	**98.2%**
Commercial + Office Zones	**Acres**	**FAR**	**Square Footage**	**DU**	**% of DU**
GC-General Commercial	59.7	0.25	650,100	n/a[1]	
CC-Community Commercial	16.2	0.25	176,400	n/a[1]	
MU-Mixed Use	19.7	0.50	429,000	100[5]	1.8%
O- Office	35.2	0.50	766,600	n/a[1]	
Subtotal	**130.8**		**2,022,100**	**100**	**1.8%**
Public/Quasi Public Zones	**Acres**				
PQP-Water Tank Site	1.0				
PQP-High School/Middle School	70.0				
PQP-Elementary School	30.0				
Subtotal	**101.0**				
Park + Open Space Zones	**Acres**				
CP- Community Park	40.6				
P- Neighborhood Park	38.2				
OS- Wetland Preserve	259.8				
OS- Greenbelt/Drainage Corridor	55.6				
OS- Landscape Corridor	14.5				
Subtotal	**408.7**				
AG-Agriculture	74.7				
RW- Primary Roadways	86.7				
TOTAL	**1,391.0**		**10.6[5]**	**5,690**	**100%**

1. Dwelling units are not permitted in these designations.
2. Park requirement calculation (not including AG zoning): LD/MD 3540 DU x .0142= 50.3 ac. and HD/MU 2,150 DU x .0119=25.6 Total acres= **75.9**
3. Park credit calculations: Comm/ Neigh. Parks=**78.8 acres**
4. 100 dwelling units are assigned to the 7.5-acre MU parcel only, 0 units assigned to the 12.2-acre parcel.
5. Double net residential density is calculated as follows: Base residential acreage is 589.1 acres + 7.5 MU= 596.6 – 59.6 (10% net residential acreage exclusion allowed per Policy LU 120 CB-1.) = **537.0**. Total units of 5,690/537 acres= 10.6 du/acre
6. A minimum 34.8% of a Master Plan's units must be accommodated on multi-family zoned land, this includes HD and MU parcel allocations of 2,150 DU =37.7%.

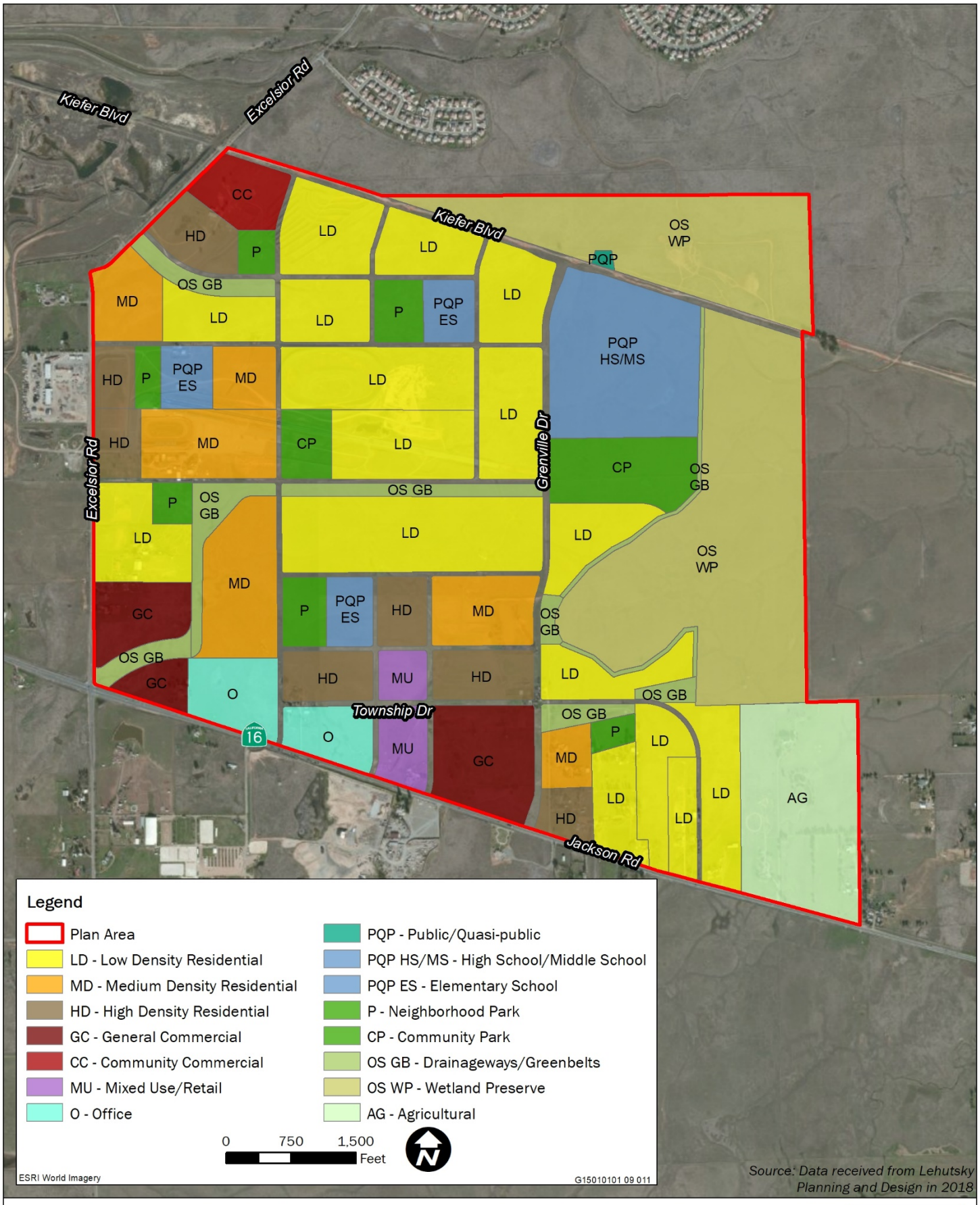
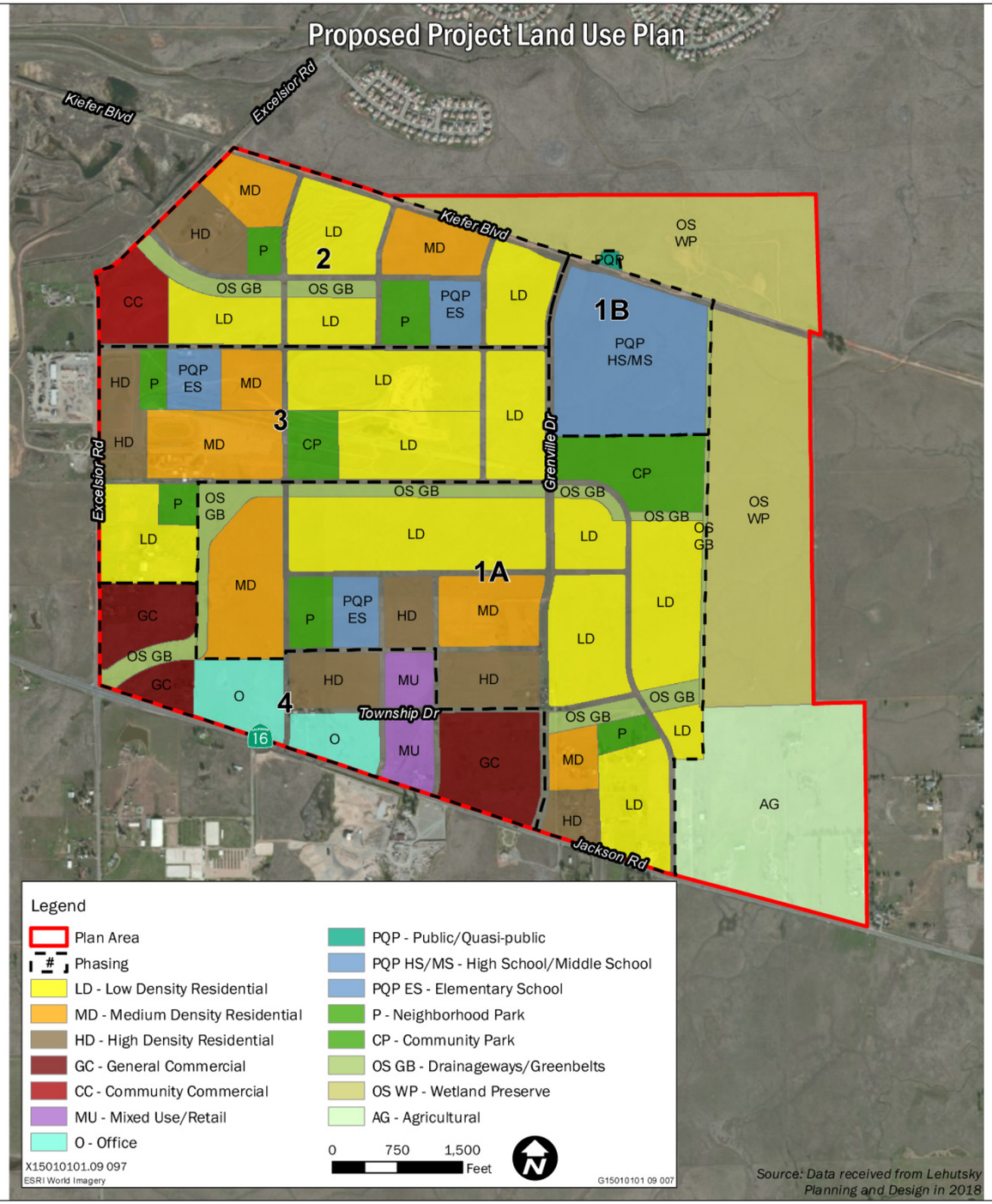


Plate Alt-4: Alternative 2 Land Use Diagram

ASCENT ENVIRONMENTAL



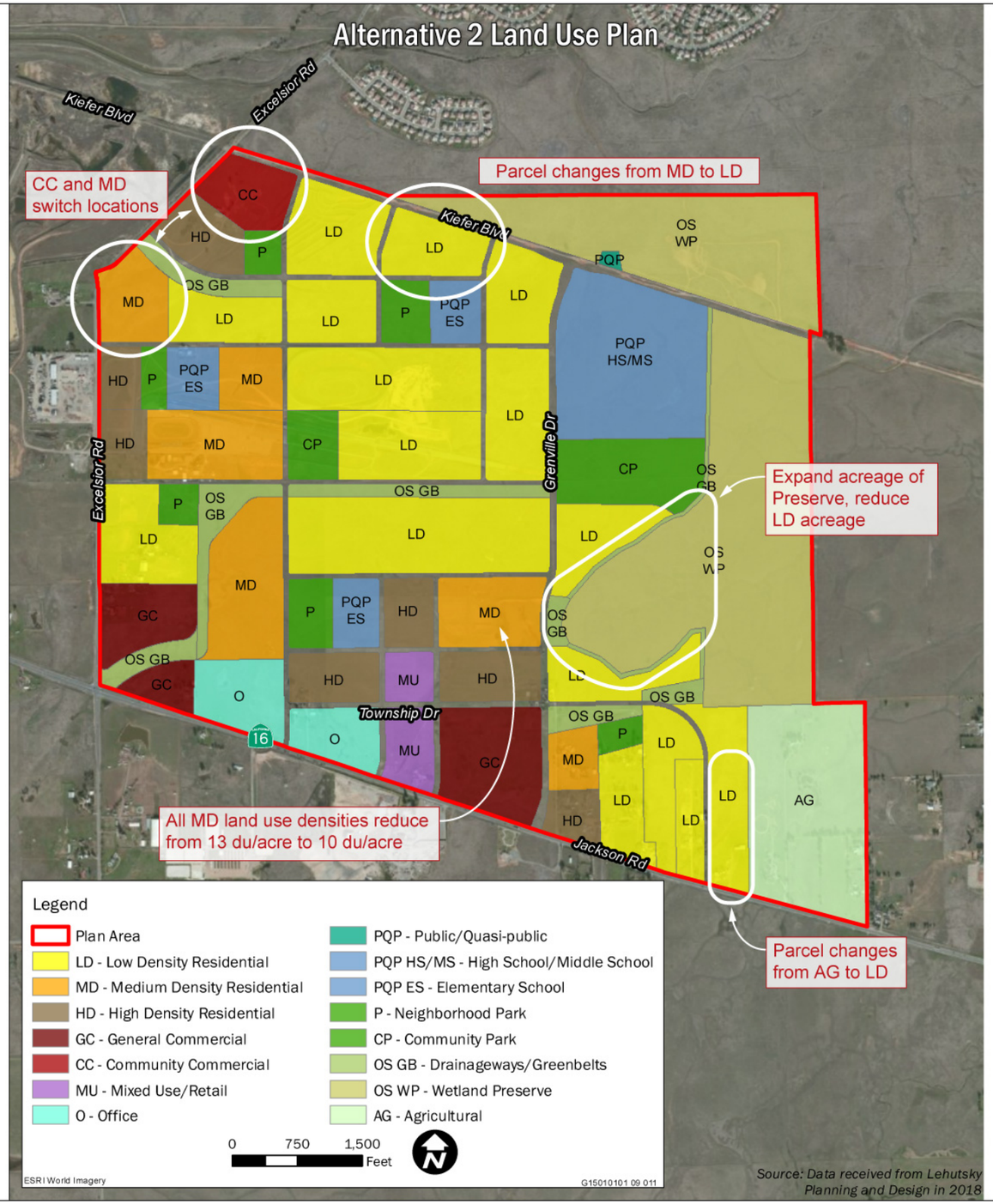


Plate Alt-5: Comparison between Project and Alternative 2 Land Use Proposals

At buildout, the population of the Plan Area is anticipated to be approximately 15,331 residents with implementation of Alternative 2 (see Table Alt-8).

Table Alt-8: Alternative 2 Population Projections

Residential Designations	DU	Person per DU	Population
LD-Low Density Residential	2,295	3.1	7,115
MD-Medium Density Residential	1,245	2.8	3,486
HD-High Density Residential[1]	2,150	2.2	4,730
Total	**5,690**		**15,331**

Source: Prepared by Ascent based on metrics provided in the Jackson Township Specific Plan, Chapter 6

1. Includes 100 Mixed-Use units.

ALTERNATIVE 2A: SSHCP-CONSISTENT WETLAND PRESERVE THUMB WITH INCREASED OFFICE

The Project Applicant designed Alternative 2A to combine Alternatives 1C and 2. This alternative combines the larger preserve area found in Alternative 2 with the increased office space and location of the Community Commercial parcel in the northwest corner of the plan area as shown in Alternative 1C. Like Alternative 2, the larger preserve area was designed to be consistent with the SSHCP. Alternative 2A would modify the wetland preserve on the eastern boundary of the Plan Area, creating a “thumb” that includes the protection of an additional 4.6 acres of vernal pools along the existing drainage corridor on property owned by the Project Applicant.

Alternative 2A would also replace an approximately 22.3-acre Medium Density Residential parcel, a 16.9-acre High Density Residential parcel, and a proposed roadway between the two parcels with one approximately 39.1-acre Office parcel, as well as replace a parcel designed for Medium Density Residential under the Project with Low Density Residential directly south of Kiefer Boulevard (Plate Alt-6). As with Alternative 2, Alternative 2A would result in a 45.5-acre increase in area designated Wetland Preserve from what is proposed by the Project. The alternative would also result in a decrease in areas designated for Residential (26.3 acres), Agriculture (35.1 acres), and Primary Roadways (19.1 acres) compared to the Project (Table Alt-9).

Table Alt-9: Alternative 2A Land Use Summary

Residential Designations	Acres	Average Density	Density Range (DU/acre)	DU	% of DU
LD- Low Density Residential	382.6	6.0	1.0-8.9	2,295	45.2%
MD-Medium Density Residential	102.2	10.0	9.0-15.9	1,022	20.1%
HD- High Density Residential	66.4	25.0	16.0-30.0	1,660	32.7%
Subtotal	**551.2**			**4,977**	**98.0%**
Commercial + Office Zones	**Acres**	**FAR**	**Square Footage**	**DU**	**% of DU**
GC-General Commercial	59.7	0.25	650,100	n/a[1]	
CC-Community Commercial	16.2	0.25	176,400	n/a[1]	
MU-Mixed Use	19.7	0.50	429,000	100[5]	2.0%

Residential Designations	Acres	Average Density	Density Range (DU/acre)	DU	% of DU
O- Office	74.3	0.50	1,618,200	n/a[1]	
Subtotal	**169.9**		**2,873,700**	**100**	**2.0%**
Public/Quasi Public Zones	**Acres**				
PQP-Water Tank Site	1.0				
PQP-High School/Middle School	70.0				
PQP-Elementary School	30.0				
Subtotal	**101.0**				
Park + Open Space Zones	**Acres**				
CP- Community Park	40.6				
P- Neighborhood Park	38.2				
OS- Wetland Preserve	259.8				
OS- Greenbelt/Drainage Corridor	55.6				
OS- Landscape Corridor	14.5				
Subtotal	**408.7**				
AG-Agriculture	74.7				
RW- Primary Roadways	85.5				
TOTAL	**1,391.0**		**10.1[5]**	**5,077**	**100%**

1. Dwelling units are not permitted in these designations.
2. Park requirement calculation (not including AG zoning): LD/MD 3,317 DU x .0142= 47.1 ac. and HD/MU 1,760 DU x .0119 = 21.0 Total acres= **68.1**.
3. Park credit calculations: Comm/ Neigh. Parks=**78.8 acres**.
4. 100 dwelling units are assigned to the 7.5-acre MU parcel only, 0 units assigned to the 12.2-acre parcel.
5. Double net residential density is calculated as follows: Base residential acreage is 551.2 acres + 7.5 MU= 558.7 – 55.9 (10% net residential acreage exclusion allowed per Policy LU 120 CB-1.) = **502.8**. Total units of 5,077/502.8 acres= 10.1 du/acre.
6. A minimum 34.8% of a Master Plan's units must be accommodated on multi-family zoned land, this includes HD and MU parcel allocations of 1,760 DU =34.7%.

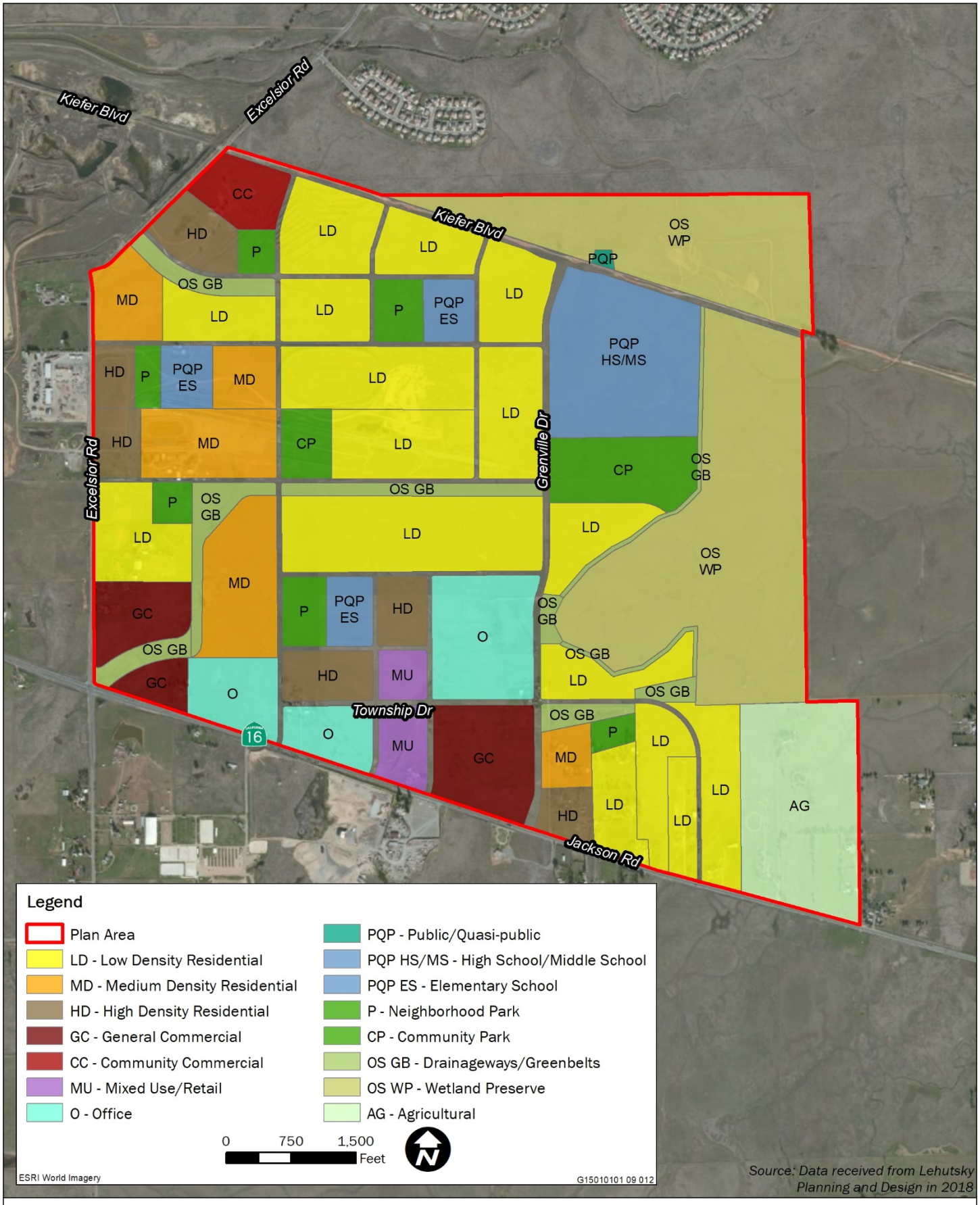
At buildout, the population of the Plan Area is anticipated to be approximately 13,848 residents with implementation of Alternative 2A (see Table Alt-10).

Table Alt-10: Alternative 2A Population Projections

Residential Designations	DU	Person per DU	Population
LD-Low Density Residential	2,295	3.1	7,115
MD-Medium Density Residential	1,022	2.8	2,862
HD-High Density Residential[1]	1,760	2.2	3,872
Total	**5,077**		**13,848**

Source: Prepared by Ascent based on metrics provided in the Jackson Township Specific Plan, Chapter 6

1. Includes 100 Mixed-Use units.



Source: Data received from Lehutsky Planning and Design in 2018

Plate Alt-6: Alternative 2A Land Use Diagram

ASCENT ENVIRONMENTAL

ALTERNATIVE 3: INCREASED WETLAND PRESERVE

Alternative 3 would include an increase in the size of the wetland preserve area at the eastern edge of the Plan Area to maximize the protection of vernal pools and seasonal wetlands (Plate Alt-7). Under Alternative 3, most of the land (291.9 acres) located east of Tree View Lane (to be renamed Grenville Drive) would be designated for protection, an additional 77.6 acres over what is proposed by the Project. The land use designations for this alternative would be adjusted to accommodate the increase in area designated Wetland Preserve and provide appropriate buffers. Residential land use would decrease by 85.9 acres, nearly all of which would be Low Density Residential. There would be a corresponding reduction in area for community and neighborhood parks, as well as schools. To accommodate this much larger preserve area, the high school/middle school site would be moved to the west side of Tree View Lane/Grenville Drive. The community park would be moved north to the southeast corner of the intersection of Tree View Lane/Grenville Drive and Kiefer Boulevard. Approximately 24.4 acres of land proposed for Agricultural designation would be put into wetland preserve, which would extend the preserve all the way south to Jackson Road. There would also be areas of Low Density Residential east of Tree View Lane/Grenville Drive adjacent to the wetland preserve.

One major difference between Alternative 3 and the other alternatives would be that instead of the area north of Kiefer Road being an extension of the wetland preserve, this area would be designated for Light Industrial uses, with 805,800 square feet of space with a FAR of 0.20. This is consistent with the existing General Plan designations of these nonparticipating parcels. Therefore, although this alternative increases the wetland preserve area, it would not be consistent with the SSHCP preserve strategy.

Overall, this alternative would result in the development of 1,605 Low Density Residential units, 1,798 Medium Density Residential units, 2,137 High Density Residential units, and 100 Mixed Use units, for a total of 5,640 residential units. There would also be approximately 2.8 million square feet of commercial and industrial space. Although there would be a net increase in park and open space zones compared to the Project, there would be less area devoted to parks and greenbelts. Agricultural areas would also decrease (a 24.4-acre reduction) compared to the Project, as would the area used for Primary Roadways (17.0 acre reduction) (Table Alt-11).

Table Alt-11: Alternative 3 Land Use Summary

Residential Designations	Acres	Average Density	Density Range (DU/acre)	DU	% of DU
LD- Low Density Residential	267.8	6.0	1.0-10.9	1,605	28.5%
MD-Medium Density Residential	138.3	13.0	11.0-19.9	1,798	31.9%
HD- High Density Residential	85.5	25.0	20.0-30.0	2,137	37.9%
Subtotal	**491.6**			**5,540**	**98.3%**
Commercial + Office Zones	**Acres**	**FAR**	**Square Footage**	**DU**	**% of DU**
GC-General Commercial	59.3	0.25	645,700	n/a[1]	
CC-Community Commercial	17.6	0.25	191,600	n/a[1]	

Residential Designations	Acres	Average Density	Density Range (DU/acre)	DU	% of DU
MU-Mixed Use	19.6	0.50	427,000	100	1.7%
O- Office	33.6	0.50	731,800	n/a[1]	
LI-Light Industrial	92.5	0.20	805,800	n/a[1]	
Subtotal	**222.6**		**2,801,900**	**100**	**1.7%**
Public/Quasi Public Zones	**Acres**				
PQP-Tank Site	1.0				
PQP-High School/Middle School	70.0				
PQP-Elementary School	20.0				
Subtotal	**91.0**				
Park + Open Space Zones	**Acres**				
CP- Community Park	33.6.				
P- Neighborhood Park	30.9				
OS- Wetland Preserve	291.9				
OS- Greenbelt/Drainage Corridor	41.9				
OS- Landscape Corridor	14.5				
Subtotal	**412.8**				
AG-Agriculture	85.4				
RW- Primary Roadways	87.6				
TOTAL	**1,391.0**		**11.28**	**5,640**	**100%**

1. Dwelling units are not permitted in these designations.
2. Park requirement calculation (not including AG zoning): LD/MD 3403 DU x .0142 =48.4ac. and HD/MU 2237 DU x .0122= 26.6 Total acres= 75.0.
3. Park credit calculations: 64.5 acres of Comm/ Neigh. Parks.
4. 100 dwelling units are assigned to the 8.2-acre MU parcel only, 0 units assigned to the 11.4-acre parcel.
5. Double net density calculation: 5640/499.8 acres= (491.6 ac.+8.2 ac. of MU)= 11.28 du/acre Note: this does not include the AG or the 10% net residential acreage exclusion allowed per Policy LU 120 CB-1.
6. A minimum 34.8% of a Master Plan's units must be accommodated on multi-family zoned land, this includes HD and MU parcel allocations of 2237 DU = 39.6%.

At buildout, the population of the Plan Area is anticipated to be approximately 14,931 residents with implementation of Alternative 3 (see Table Alt-12).

Table Alt-12: Alternative 3 Population Projections

Residential Designations	DU	Person per DU	Population
LD-Low Density Residential	1,605	3.1	4,976
MD-Medium Density Residential	1,798	2.8	5,034
HD-High Density Residential[1]	2,237	2.2	4,921
Total	**5,640**		**14,931**

Source: Prepared by Ascent based on metrics provided in the Jackson Township Specific Plan, Chapter 6

1. Includes 100 Mixed-Use units.

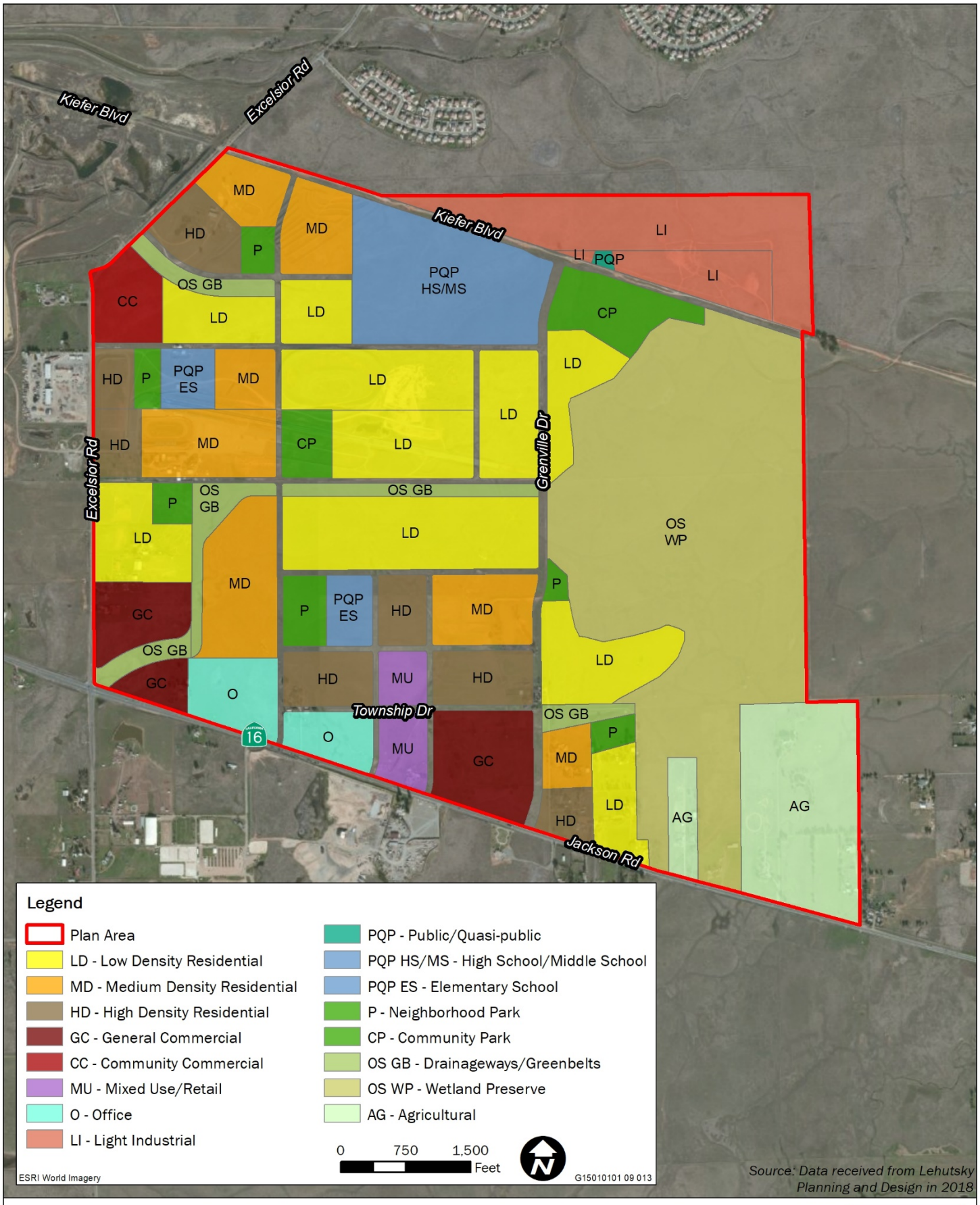


Plate Alt-7: Alternative 3 Land Use Diagram

ASCENT ENVIRONMENTAL

ALTERNATIVE 4: CENTRALIZED LIGHT INDUSTRIAL

Alternative 4 would designate APN 067-0050-005, currently occupied by the Sacramento Raceway, as Light Industrial, consistent with its current zoning. The area north of this parcel would be reconfigured, moving the greenbelts and parks directly adjacent to it, to provide a buffer between future industrial and residential uses (Plate Alt-8). The Village Center and surrounding properties in the northwest corner of the Plan Area would be reconfigured, but the uses would remain relatively consistent with the proposed Project. The areas east of Tree View Lane, including the wetland preserve, and the areas south of the proposed Light Industrial property would be similar to those proposed under the Project.

Residential area would decrease by 147.2 acres compared to the Project, and there would be a corresponding reduction in area for community and neighborhood parks, as well as schools. There would be a total of 186.7 acres designated Light Industrial in the Plan Area. There would also be a reduction in area used for Primary Roadways (17.4 acres) (Table Alt-13).

Table Alt-13: Alternative 4 Land Use Summary

Residential Designations	Acres	Average Density	Density Range (DU/acre)	DU	% of DU
LD- Low Density Residential	269.2	6.0	1.0-10.9	1,615	35.8%
MD-Medium Density Residential	102.6	13.0	11.0-19.9	1,334	29.6%
HD- High Density Residential	58.5	25.0	20.0-30.0	1,462	32.4%
Subtotal	**430.3**			**4,411**	**97.8%**
Commercial + Office Zones	**Acres**	**FAR**	**Square Footage**	**DU**	**% of DU**
GC-General Commercial	61.0	0.25	664,300	n/a[1]	
CC-Community Commercial	18.6	0.25	202,500	n/a[1]	
MU-Mixed Use	19.6	0.50	427,000	100[5]	2.2%
O- Office	33.6	0.50	731,800	n/a[1]	
LI- Light Industrial	186.7	0.20	1,626,500		
Subtotal	**319.5**		**3,652,100**	**100**	**2.2%**
Public/Quasi Public Zones	**Acres**				
PQP-Tank Site	1.0				
PQP-High School/Middle School	70.0				
PQP-Elementary School	20.0				
Subtotal	**91.0**				
Park + Open Space Zones	**Acres**				
CP- Community Park	28.6				
P- Neighborhood Park	30.6				
OS- Wetland Preserve	214.3				
OS- Greenbelt/Drainage Corridor	65.2				

Residential Designations	Acres	Average Density	Density Range (DU/acre)	DU	% of DU
OS- Landscape Corridor	14.5				
Subtotal	**353.2**				
AG-Agriculture RW- Primary Roadways	109.8 87.2				
TOTAL	**1,391.0**		**10.28**	**4,511**	**100%**

1. Dwelling units are not permitted in these designations.
2. Park requirement calculation (not including AG zoning): LD/MD 2,949 DU x .0142=41.9 ac. and HD/MU 1562 DU x .0119=18.6 Total acres= 60.5.
3. Park credit calculations: 59.2 acres of Comm/ Neigh. Parks + 3 ac. credit for GB adjacent to 28.6-acre Comm Park 62.2 acres.
4. 100 dwelling units are assigned to the 8.2-acre MU parcel only, 0 units assigned to the 11.4-acre parcel.
5. Double net density calculation: 4,511 DU/ 438.5 acres (430.3 ac.+8.2 ac. of MU) = 10.28 du/ac. Note: this does not include the 109.3 acres of AG or the 10% net residential acreage exclusion allowed per Policy LU 120 CB-1.
6. A minimum 34.8% of a Master Plan's units must be accommodated on multi-family zoned land, this includes HD and MU parcel allocations of 1,562 DU = 34.6%.
7. New Double net density- 4511/438.7 acres= 10.28 du/acre.

At buildout, the population of the Plan Area is anticipated to be approximately 12,178 residents with implementation of Alternative 4 (see Table Alt-14).

Table Alt-14: Alternative 4 Population Projections

Residential Designations	DU	Person per DU	Population
LD-Low Density Residential	1,615	3.1	5,007
MD-Medium Density Residential	1,334	2.8	3,735
HD-High Density Residential[1]	1,562	2.2	3,436
Total	**4,511**		**12,178**

Source: Prepared by Ascent based on metrics provided in the Jackson Township Specific Plan, Chapter 6

1. Includes 100 Mixed-Use units.

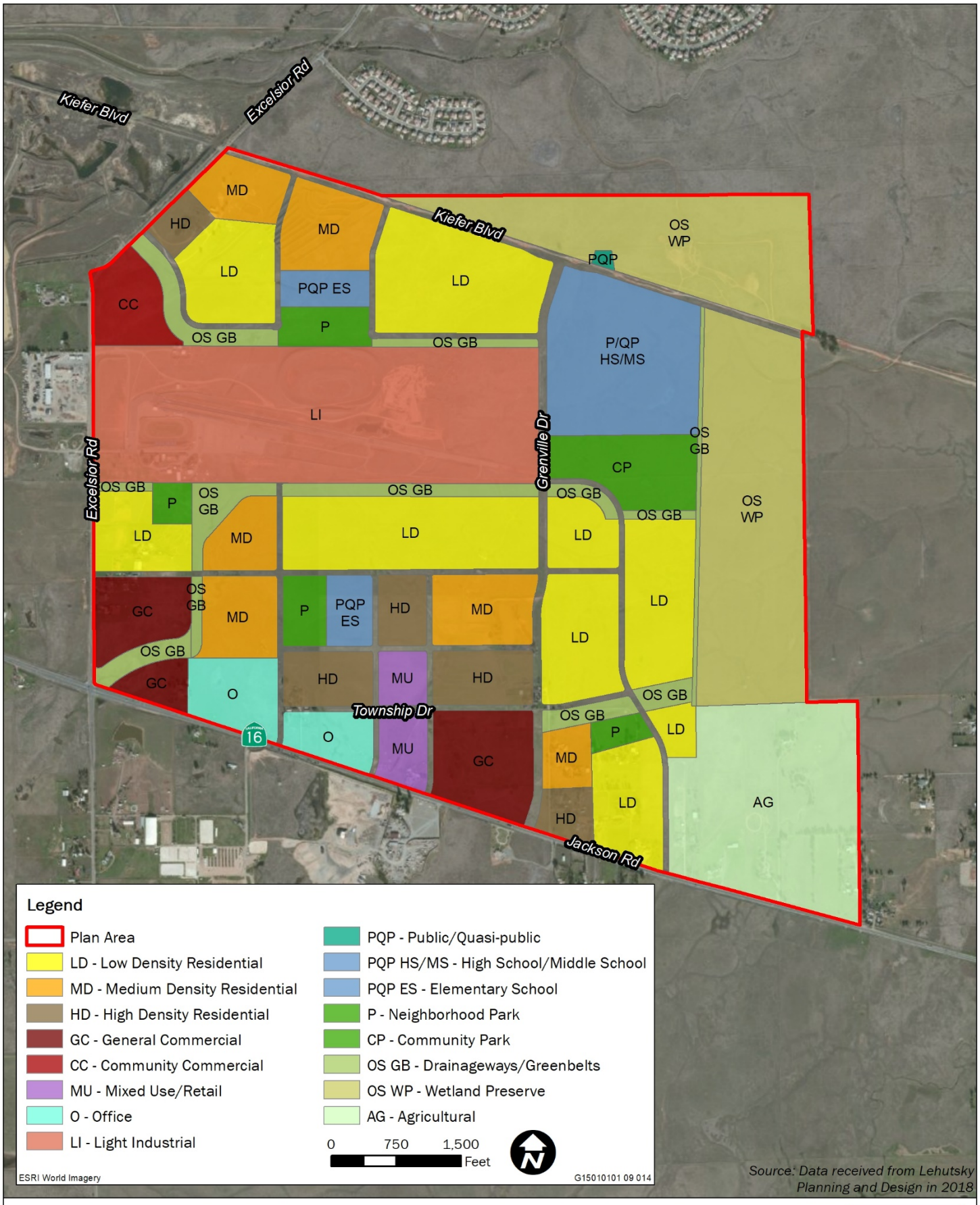


Plate Alt-8: Alternative 4 Land Use Diagram

ASCENT ENVIRONMENTAL

Evaluation of Alternatives

This analysis addresses the effects of the No Project Alternative and the following Alternatives:

- Alternative 1A: Increased Office
- Alternative 1B: Northwest Corner Residential-Commercial Swap
- Alternative 1C: Increased Office with Northwest Corner Residential-Commercial Swap
- Alternative 2: SSHCP-Consistent Wetland Preserve
- Alternative 2A: SSHCP-Consistent Wetland Preserve Thumb with Increased Office
- Alternative 3: Increased Wetland Preserve
- Alternative 4: Centralized Light Industrial

Alternative 2 is not addressed in this chapter: please refer to Chapters 4 through 20 of this EIR for the analysis. Although the SSHCP was not adopted at the time that the Project Applicant filed a formal application for the Project in April of 2012, the Plan Area is within the Urban Development Area identified in the SSHCP, and the Project is included as a covered activity (under the category “Master Plans Known at the Time of SSHCP Preparation”). In anticipation of the adoption of the SSHCP, the County requested that the Project Applicant develop a project alternative that would be consistent with SSHCP requirements, including compliance with the Covered Activity descriptions and the SSHCP Avoidance and Minimization Measures listed in the SSHCP. This alternative is evaluated at an equal level of detail as the Project in this EIR because it responds to recent regional planning efforts. Therefore, Alternative 2 is not addressed further in this chapter.

Aesthetics

No Project Alternative

Development of the Plan Area according to the existing zoning would result in limited potential for changes in the portion of the Plan Area designated for agricultural use. The addition of two residences in this area would not substantially affect visual character or quality, nor is there a potential for the introduction of new sources of substantial light or glare. The western area of the Plan Area could be developed for industrial uses, which would be a substantial change to the character and quality of the area and could introduce sources of light or glare. Because the potential for changes to the visual character of the Plan Area would be less overall, the visual and lighting impacts of the No Project Alternative would be less than anticipated for the Project.

Alternatives 1A, 1B, and 1C

Under Alternatives 1A, 1B, and 1C, development would occur at a similar level to, but in slightly different configurations than, the Project. Overall, these alternatives would result in the near complete conversion of the Plan Area from undeveloped rural land to a fully developed urban community, which would result in a permanent substantial alteration to

existing viewsheds within the area, as well as introducing new sources of light and glare. Like the Project, Development Standards and Design Guidelines would be incorporated into the Alternatives 1A, 1B, and 1C so that they would be designed to be consistent with the design aesthetic of the community to create a cohesive and unified presentation across the development. Nonetheless, substantial degradation of the character and visual quality of the Plan Area could occur.

Alternatives 1A, 1B, and 1C would also comply with the Design Guidelines that require lighting to be focused downward whenever possible to avoid light pollution and require parking lighting to have automatic controls to dim lights after certain hours or when no one is present. Overall, there would not be a substantial difference in the potential for creation of new sources of daytime glare in comparison to the Project. However, there would be no mitigation available to address the existing lighting on the raceway parcel. Alternatives 1A, 1B, and 1C would result in effects on aesthetics that would be similar to the Project.

Alternative 2A

Alternative 2A would result in less development at the eastern boundary of the Plan Area than the Project. This could result in slightly less offsite lighting effects to the east of the Plan Area. However, like the Project, this alternative would introduce a substantial amount of new lighting to an area that is currently rural and largely unlit. In addition, although Alternative 2A would result in less residential development and associated photovoltaic (PV) panels than the Project, implementation of Alternative 2A would not result in a substantial difference in the potential for creation of new sources of daytime glare in comparison to the Project because the overall level of development would be similar. In addition, although Alternative 2A would increase the area set aside for open space, it would also result in the near complete conversion of the Plan Area from undeveloped rural land to a fully developed urban community, which would result in a permanent, substantial alteration to existing viewsheds within the area. Development Standards and Design Guidelines would create a cohesive and unified presentation across the development and regulate lighting. However, there would be no mitigation available to address the existing lighting on the raceway parcel. Overall, impacts would be similar to the Project.

Alternative 3

Alternative 3 would increase the area set aside for open space, which could reduce the potential for degradation of views on the eastern edge of the Plan Area. This could result in slightly less offsite lighting effects to the east of the Plan Area and less residential development and associated PV panels. However, this alternative would allow for Light Industrial development north of Kiefer Boulevard, which could result in an increase in lighting in the northeast corner of the Plan Area, adjacent to the existing Mather Preserve, and nearby the existing Independence at Mather community.

Overall, this alternative would result in the near complete conversion of the Plan Area from undeveloped rural land to a fully developed urban community, which would result in a permanent, substantial alteration to existing viewsheds within the area. Like the Project, Development Standards and Design Guidelines would be incorporated into Alternative 3 so that they would be designed to be consistent with the design aesthetic

of the community to create a cohesive and unified presentation across the development. Design Guidelines also require lighting to be focused downward whenever possible to avoid light pollution and parking lighting to have automatic controls to dim lights after certain hours or when no one is present. Alternative 3 would have a similar effect on the degradation of the character and visual quality of the Plan Area but could result in additional lighting adjacent to the Mather Preserve on the parcels north of Kiefer Boulevard. There would be no mitigation available to address the existing lighting on the raceway parcel. Overall, there would not be a substantial difference in the potential for effects to aesthetics in comparison to the Project; impacts would be similar.

Alternative 4

Alternative 4 would result in similar levels of development to the Project but would not change the designation of the raceway parcel. Overall, this alternative would result in the near complete conversion of the Plan Area from undeveloped rural land to a fully developed urban community, which would result in a permanent substantial alteration to existing viewsheds within the area. Like the Project, Development Standards and Design Guidelines would be incorporated into Alternative 4 so that they would be designed to be consistent with the aesthetic of the community to create a cohesive and unified presentation across the development.

Alternative 4 would result in less residential development and associated PV panels than the Project. Further, residential land uses would be setback from the central industrial parcel, which would reduce the potential for lighting effects if the raceway remains in operation during early phases of development. Overall, there would not be a substantial difference in the potential for creation of new sources of daytime glare in comparison to the Project. The effects on aesthetics would be similar to the Project.

Agricultural Resources

No Project Alternative

The No Project Alternative would allow for the continued use of the Plan Area for agriculture. While the Project would result in the loss of Farmland to non-agricultural uses, this alternative would not result in the conversion of agricultural lands. Overall, the agricultural resource impacts of the No Project Alternative would be less than the Project.

Alternatives 1A, 1B, 1C, 2A, 3, and 4

The Alternatives 1A, 1B, 1C, 2A, 3, and 4 would all result in the conversion of more than 50 acres of Prime Farmland and Farmland of Local Importance to non-agricultural uses. Implementation of Mitigation Measure AG-1 would require preservation of Farmland at a 1:1 ratio, consistent with Policy AG-5 of the 2030 General Plan. However, because prime soils are a finite resource and new agricultural soils would not be created there would be a substantial net-loss of agricultural production within Sacramento County. The current agricultural operations on adjacent and non-participating properties are limited and include mostly small agricultural residential lots. In addition, buyers of properties adjacent to Excelsior Road, Jackson Road, and a non-participating property are required to receive notice through the title report that they could be subject to

inconvenience or discomfort resulting from accepted farming activities as per provisions of the County Right-To-Farm Ordinance (Sacramento County Code Chapter 14.05) and 2030 General Plan Policy AG-4, as proposed in Mitigation Measure AG-2. Overall, impacts to agricultural resources would be similar to the Project because these alternatives would result in conversion of the same amount of Farmland as the Project and there would be the same potential for conflict with existing, adjacent agricultural uses.

Air Quality

No Project Alternative

The No Project Alternative would generate lower air pollutant emissions (particulate matter and ozone precursors) because of continued agricultural activities and rural residential use of the majority of the Plan Area. This alternative would avoid project air quality impacts related to TAC and potential odor generation. The significant construction, operational, and cumulative air quality impacts identified for the project would not occur. Therefore, the air quality impacts of the No Project Alternative would be less than those that would occur with the Project.

Alternatives 1A, 1B, and 1C

Although Alternatives 1A, 1B, and 1C differ from the Project in their mix of land uses and trip generation, construction impacts are likely to be similar due to the size and scale of the overall development under these alternatives. Application of Mitigation Measures AQ-1a and AQ-1b would be sufficient to reduce construction impacts to levels below SMAQMD mass emissions thresholds. Operational impacts are also likely to be similar to the Project due to the size and scale of the overall development. Implementation of Mitigation Measure AQ-2b would reduce operational emissions as; however, this reduction would not be sufficient to reduce emissions of NO_X and PM_{10} below SMAQMD's operational mass emissions threshold. Alternatives 1A, 1B, and 1C would be beholden to the same air quality plans cited in the discussion of the Project's consistency with applicable air quality plans. Because operational emissions of NO_X and PM_{10} could not be reduced to below SMAQMD's operational mass emissions thresholds, despite the application of mitigation, Alternatives 1A, 1B, and 1C would not be consistent with local plans to improve air quality.

Due to the size and scale of the overall development, Alternatives 1A, 1B, and 1C would also result in the addition of new trips of similar volume to the Project. As discussed for the Project, the number of new daily trips would not meet SMAQMD's Second-Tier criteria (i.e., intersections that accommodate 31,600 or more vehicles per hour) to trigger an adverse CO impact. TAC exposure impacts are also likely to be similar. Implementation of Mitigation Measure AQ-3 would be sufficient to reduce potential TAC exposure by providing guidelines when siting sensitive land uses near land uses that could be sources of diesel PM and TACs.

Alternatives 1A, 1B, and 1C would be located within the 4-mile buffer zone to the existing Sacramento Rending Company's Rendering Plant (i.e., 0.5 mile to the west) recommended by SMAQMD. Due to the odors produced by the Sacramento Rendering Plant, which is exempt from then SMAQMD nuisance rule by the Right to Farm Act,

odor impacts could affect future residents of the Plan Area in a similar manner as described for the Project. Overall, the Air Quality impacts of Alternatives 1A, 1B, and 1C would be similar to the Project.

Alternative 2A

Although Alternative 2A differs from the Project in the mix of land uses and trip generation, construction impacts are likely to be similar due to the size and scale of the overall development under these alternatives. Application of Mitigation Measures AQ-1a and AQ-1b would be sufficient to reduce construction impacts to levels below SMAQMD mass emissions thresholds. Operational impacts are also likely to be similar to the Project due to the size and scale of the overall development. Implementation of Mitigation Measure AQ-2b would reduce operational emissions as; however, this reduction would not be sufficient to reduce emissions of NO_X and PM_{10} below SMAQMD's operational mass emissions threshold. Alternative 2A would be beholden to the same air quality plans cited in the discussion of the Project's consistency with applicable air quality plans. Because operational emissions of NO_X and PM_{10} could not be reduced to below SMAQMD's operational mass emissions thresholds, despite the application of mitigation, Alternative 2A would not be consistent with local plans to improve air quality.

Alternative 2A would result in fewer residences and more acreage dedicated to wetlands preservation, which would generate fewer additional daily trips than the Project. As discussed for the Project, the number of new daily trips would not meet SMAQMD's Second-Tier criteria (i.e., intersections that accommodate 31,600 or more vehicles per hour) to trigger an adverse CO impact. TAC exposure impacts are also likely to be similar due to the size and scale of the overall development. Implementation of Mitigation Measure AQ-3 would be sufficient to reduce potential TAC exposure by providing guidelines when siting sensitive land uses near land uses that could be sources of diesel PM and TACs.

Alternative 2A would be located within the 4-mile buffer zone to the existing Sacramento Rending Company's Rendering Plant (i.e., 0.5 mile to the west) recommended by SMAQMD. Due to the odors produced by the Sacramento Rendering Plant, which is exempt from then SMAQMD nuisance rule by the Right to Farm Act, odor impacts would affect future residents of the Plan Area in a similar manner as described for the Project. Overall, the Air Quality impacts of Alternative 2A would be similar to the Project.

Alternative 3

Although Alternative 3 differs from the Project in the mix of land uses and trip generation, construction impacts are likely to be similar due to the size and scale of the overall development under these alternatives. Application of Mitigation Measures AQ-1a and AQ-1b would be sufficient to reduce construction impacts to levels below SMAQMD mass emissions thresholds. Operational impacts are also likely to be similar to the Project due to the size and scale of the overall development. Implementation of Mitigation Measure AQ-2b would reduce operational emissions as; however, this reduction would not be sufficient to reduce emissions of NO_X and PM_{10} below SMAQMD's operational mass emissions threshold. Alternative 3 would be beholden to the same air quality plans cited in the discussion of the Project's consistency with applicable air quality plans. Because

operational emissions of NO_X and PM_{10} could not be reduced to below SMAQMD's operational mass emissions thresholds, despite the application of mitigation, Alternative 3 would not be consistent with local plans to improve air quality.

Alternative 3 would result in fewer residences and more acreage dedicated to wetlands preservation, which would generate fewer additional daily than the Project. As discussed for the Project, the number of new daily trips would not meet SMAQMD's Second-Tier criteria (i.e., intersections that accommodate 31,600 or more vehicles per hour) to trigger an adverse CO impact. TAC exposure impacts are also likely to be similar due to the size and scale of the overall development. Implementation of Mitigation Measure AQ-3 would be sufficient to reduce potential TAC exposure by providing guidelines when siting sensitive land uses near land uses that could be sources of diesel PM and TACs.

Alternative 3 would be located within the 4-mile buffer zone to the existing Sacramento Rending Company's Rendering Plant (i.e., 0.5 mile to the west) recommended by SMAQMD. Due to the odors produced by the Sacramento Rendering Plant, which is exempt from then SMAQMD nuisance rule by the Right to Farm Act, odor impacts would affect future residents of the Plan Area in a similar manner as described for the Project. Overall, the Air Quality impacts of Alternative 4 would be similar to the Project.

Alternative 4

Although Alternative 4 differs from the Project in the mix of land uses and trip generation, construction impacts are likely to be similar due to the size and scale of the overall development under these alternatives. Application of Mitigation Measures AQ-1a and AQ-1b would be sufficient to reduce construction impacts to levels below SMAQMD mass emissions thresholds. Operational impacts are also likely to be similar to the Project due to the size and scale of the overall development. Implementation of Mitigation Measure AQ-2b would reduce operational emissions as; however, this reduction would not be sufficient to reduce emissions of NO_X and PM_{10} below SMAQMD's operational mass emissions threshold. Alternative 4 would be beholden to the same air quality plans cited in the discussion of the Project's consistency with applicable air quality plans. Because operational emissions of NO_X and PM_{10} could not be reduced to below SMAQMD's operational mass emissions thresholds, despite the application of mitigation, Alternative 4 would not be consistent with local plans to improve air quality.

As discussed for the Project, the number of new daily vehicle trips would not meet SMAQMD's Second-Tier criteria (i.e., intersections that accommodate 31,600 or more vehicles per hour) to trigger an adverse CO impact. TAC exposure impacts are also likely to be similar due to the size and scale of the overall development. Implementation of Mitigation Measure AQ-3 would be sufficient to reduce potential TAC exposure by providing guidelines when siting sensitive land uses near land uses that could be sources of diesel PM and TACs.

Alternative 4 would be located within the 4-mile buffer zone to the existing Sacramento Rending Company's Rendering Plant (i.e., 0.5 mile to the west) recommended by SMAQMD. Due to the odors produced by the Sacramento Rendering Plant, which is exempt from then SMAQMD nuisance rule by the Right to Farm Act, odor impacts

would affect future residents of the Plan Area in a similar manner as described for the Project. Overall, the Air Quality impacts of Alternative 4 would be similar to the Project.

Airport Compatibility

No Project Alternative

Under the No Project Alternative, it is assumed that development could occur in a manner consistent with the current zoning designations. This would result in limited potential for changes in land use in most of the Plan Area but would allow for light industrial development along the eastern boundary of the Plan Area and in the northeast corner, which is within the overflight zone. Such development would not be anticipated to result in any incompatible land use.

Development would be implemented in a manner consistent with the Airport Planning Policy Area (APPA), 2030 General Plan, and zoning code. Further, development in the Overflight Zone would be subject to SACOG review. This review process would ensure that development would not interfere with the safe and efficient use of navigable air space. Development of the portion of the Plan Area that is zoned industrial would also in a net reduction of wetland features with the potential to serve as wildlife attractants, which could improve safe and efficient use of navigable airspace. Therefore, the No Project Alternative would not create substantial safety hazards to people living and working in the vicinity of an airport, expose sensitive receptors to excessive noise, or impair the safe and efficient use of navigable air space. Impacts would be similar to, but less than, those anticipated with implementation of the Project.

Alternatives 1A, 1B, and 1C

Proposed land uses within the Overflight Zone include low, medium, and high density residential; a portion of the wetland preserve, five park sites, two greenbelts, two schools, the joint high school/middle school site, the Village Center, and other commercial uses. The school sites would be subject to the review detailed in the Education Code. The Town Center and all industrial uses would be located outside of the Overflight zone. None of the restricted uses cited in the CLUP land use compatibility table are proposed within the area located within the Overflight Zone. Therefore, these alternatives would not create substantial safety hazards to people living and working near an airport.

Alternatives 1A, 1B, and 1C would be implemented in a manner consistent with the APPA and 2030 General Plan, including the use of noise insulation. Alternatives 1A, 1B, and 1C would also be governed by the zoning code or CLUP restrictions on building height, whichever is more conservative. With implementation of Mitigation Measure AC-1, upon acceptance of completed applications for development within the Plan area, the County would send the project information to the Airport Land Use Commission (ALUC) for consistency review. This review process would ensure that development would not interfere with the safe and efficient use of navigable air space. Impacts would be similar to those anticipated with implementation of the Project.

Alternative 2A

Alternative 2A would not create substantial safety hazards to people living and working in the vicinity because proposed land uses would be compatible with the Overflight Zone. Alternative 2A would be implemented in a manner consistent with the APPA and 2030 General Plan, including the use of noise insulation. The height of structures under Alternative 2A would be governed by the zoning code or CLUP restrictions, whichever is more conservative. Further, although Alternative 2A would increase the amount of land designated for wetland preserve, development of the Plan Area would result in a net reduction of wetland features with the potential to serve as wildlife attractants.

With implementation of Mitigation Measure AC-1, upon acceptance of completed applications for development within the Plan Area, the County would send the project information to the ALUC for consistency review. This review process would ensure that development would not interfere with the safe and efficient use of navigable air space. Therefore, this alternative would not create substantial safety hazards to people living and working near an airport, expose sensitive receptors to excessive noise, or impair the safe and efficient use of navigable air space. Impacts would be similar to those anticipated with implementation of the Project.

Alternative 3

Alternative 3 would be governed by the zoning code or CLUP restrictions on building height, whichever is more conservative. Alternative 3 would increase the amount of land designated for wetland preserve. However, development of the remainder of the Plan Area would result in a net reduction of wetland features with the potential to serve as wildlife attractants.

With implementation of Mitigation Measure AC-1, upon acceptance of completed applications for development within the Plan area, the County would send the project information to the ALUC for consistency review. This review process would ensure that development would not interfere with the safe and efficient use of navigable air space. Therefore, this alternative would not create substantial safety hazards to people living and working near an airport, expose sensitive receptors to excessive noise, or impair the safe and efficient use of navigable air space. Impacts would be similar to those anticipated with implementation of the Project.

Alternative 4

Alternative 4 includes industrial land uses within the Overflight Zone, but would not be anticipated to result in any incompatible uses. Alternative 4 would be implemented in a manner consistent with the APPA and 2030 General Plan, including the use of noise insulation. Alternative 4 would be governed by the zoning code or CLUP restrictions on building height, whichever is more conservative. Development of the Plan Area would result in a net reduction of wetland features with the potential to serve as wildlife attractants. With implementation of Mitigation Measure AC-1, upon acceptance of completed applications for development within the Plan area, the County would send the project information to the ALUC for consistency review. This review process would ensure that development would not interfere with the safe and efficient use of navigable air space. Therefore, this alternative would not create substantial safety hazards to

people living and working near an airport, expose sensitive receptors to excessive noise, or impair the safe and efficient use of navigable air space. Impacts would be similar to those anticipated with implementation of the Project.

Biological Resources

The Project and Alternatives 1A, 1B, 1C, and 4 would include 214.3 acres of wetland preserve, while Alternatives 2, 2A, and 3 would contain larger wetland preserves (Table Alt-15).

Table Alt-15: Preserve Area by Alternative

Alternatives	Direct Impact Area from Development (acres)	Preserved Area (acres)	Agricultural Area (acres)
Proposed Project, Alternative 1A, Alternative 1B, Alternative 1C, Alternative 4	1,176.7	214.3	109.8
Alternative 2, Alternative 2A	1,131.2	259.8	74.7
Alternative 3	1,099.4	291.6	85.4

The acreage of potential direct and indirect effects to habitat for vernal pool invertebrates are summarized in Table Alt-16. Direct effects would occur if habitat for vernal pool invertebrates is affected by site grading or other ground disturbing activities. Alternatives 1A, 1B, 1C, and 4 would have the same effects as the Project; Alternatives 2, 2A, and 3 would result in fewer direct impacts, more indirect impacts, and more preservation.

Table Alt-16: Impacts to Suitable Vernal Pool Invertebrate Habitat by Alternative

Alternatives	Suitable Habitat for Vernal Pool Crustaceans			
	Direct Impact (acres)	Indirect Impact (acres)	Preserved Vernal Pools (acres)	Preserved Vernal Pools, Possible Impact from Eastern Development (acres)
Proposed Project, Alternative 1A, Alternative 1B, Alternative 1C, Alternative 4	30.30	1.47	4.19	1.89
Alternative 2, Alternative 2A	25.61	4.13	6.22	1.89
Alternative 3	21.10	5.14	9.72	1.89

Tables Alt-17 and Alt-18 provide the potential impacts and planned preservation of jurisdictional features under each of the Alternatives.

Table Alt-17: Potential Impacts to Jurisdictional Features on Applicant-Owned Properties By Alternative

Alternatives	Wetland Impacts (acres)						Other Waters Impacts (acres)					Total Direct Impact (acres)
	Depressional Seasonal Wetlands	Depressional Perennial Marsh	Vernal Pool	Riverine Seasonal Wetland	Riverine Perennial Wetland	Total Wetlands	Intermittent Drainage	Ephemeral Drainage	Pond	Ditch/Canal	Total Other Waters	
Proposed Project, Alternative 1A, Alternative 1B, Alternative 1C, Alternative 4	4.20	1.03	22.83	3.26	10.05	***41.38***	0.08	0.23	5.04	0.31	***5.65***	**47.03**
Alternative 2, Alternative 2A	4.08	1.03	18.39	3.14	10.05	***36.69***	0.08	0.23	5.04	0.31	***5.65***	**42.35**
Alternative 3	3.66	1.03	14.89	2.55	10.05	***32.18***	0.54	0.23	5.04	0.31	***6.12***	**38.30**

Note: Information in this table reflects the Applicant-owned and non-participating properties as of the last supplement to the Delineation Report, October 29, 2015

Table Alt-18: Potential Preservation of Jurisdictional Features on Applicant-Owned Properties By Alternative

Alternatives	Wetland Preserved (acres)						Other Waters Preserved (acres)					Total Preserved (acres)
	Depressional Seasonal Wetlands	Depressional Perennial Marsh	Vernal Pool	Riverine Seasonal Wetland	Riverine Perennial Marsh	Total Wetlands	Intermittent Drainage	Ephemeral Drainage	Pond	Ditch/Canal	Total Other Waters	
Proposed Project, Alternative 1A, Alternative 1B, Alternative 1C, Alternative 4	0.21	0.0	5.02	0.44	0.0	***5.67***	1.11	0.00	0.00	0.00	***1.11***	**6.78**
Alternative 2, Alternative 2A	0.33	0.0	9.46	0.56	0.0	***10.35***	1.11	0.00	0.00	0.00	***1.11***	**11.46**
Alternative 3	0.75	0.0	12.96	1.15	0.0	**14.86**	0.65	0.00	0.00	0.00	***0.65***	**15.51**

Note: Information in this table reflects the Applicant-owned and non-participating properties as of the last supplement to the Delineation Report, October 29, 2015

No Project Alternative

Under the No Project Alternative, activity within the Plan Area would be limited to the continued operation of agricultural and rural residential uses, with potential for industrial development in the western portion of the Plan Area. This would retain the grasslands, agricultural habitat, and trees in some of the Plan Area that support special-status plant and wildlife species known to occur in the region. However, industrial development could occur in the area with the most valuable wetlands and would be inconsistent with the SSHCP. Although the total area of development would be less, due to the potential for loss of the highest value habitat, the biological resource impacts of the No Project Alternative would be similar to, but less than, the Project overall.

Alternatives 1A, 1B, and 1C

The development proposed under the Alternatives 1A, 1B, and 1C may have slightly different placement of land uses than the Project; however, the location and level of development is generally the same throughout the Plan Area. Therefore, these alternatives would result in the same level of impact to vernal pool invertebrate habitat. Alternatives 1A, 1B, and 1C would result in loss of habitat for vernal pool invertebrates and death of listed vernal pool invertebrates that could cause substantial reductions in the populations of these species and inhibit their recovery.

These alternatives would result in the same level of impact to special-status plant, valley elderberry longhorn beetle, burrowing owl, and tricolored blackbird habitat when compared to the Project. Although the total acreage of impact may vary by alternative, all of these alternatives would result in a loss of potential habitat that could reduce local and regional populations of these special-status species.

Impacts to Swainson’s hawk foraging habitat would also remain the same as they would under the Project because impacts are dependent on where the development would occur within the current zoning of the of the various portions of the Plan Area. Alternatives 1A, 1B, and 1C would have the same development footprint as the Project, although the placement of land uses within the footprint would differ from the Project. Therefore, Alternatives 1A, 1B, and 1C would result in the same impact of 516.7 acres of foraging habitat, consistent with the Project.

If Alternative 1A, 1B, or 1C is adopted in lieu of the Project, impacts to Cooper’s hawk, white-tailed kite, grasshopper sparrow, song sparrow (Modesto population), yellow-headed blackbird, northern harrier, or loggerhead shrike nests may differ from those under the Project because the likelihood that nests would be subject to adverse effects is dependent on the area of impact. Although the total acreage of impact may vary by alternative, all of these alternatives would result in a potential loss of active nests. Although the total acreage of impact may vary, all of these alternatives would also result in a loss of foraging habitat for other special-status birds and the loss of active common raptor and other common bird nests.

Alternatives 1A, 1B, and 1C would each also result in a similar potential for loss of American badger dens and special status bat roosts. The impacts to western pond turtle are likely to be the same for these alternatives because the perennial marsh areas and

the pond on the southern side of the Plan Area along with associated uplands would be developed under all of these alternatives. These alternatives would also result in loss and degradation of habitat for western spadefoot that could cause substantial reductions in population numbers, which could contribute to a trend toward State or federal listing.

The impacts related to the loss of wetlands and other waters associated with Alternatives 1A, 1B, and 1C would be the same as under the Project. Fill of wetlands and other waters within the Plan Area under each of these Alternatives would constitute a substantial reduction in the quantity of wetlands and other waters within the region.

The impacts to riparian habitat are likely to be the same for these alternatives because the large irrigation pond and other small ponds within the Plan Area where riparian habitat may occur would be developed. While the area of development and the wetland preserve proposed under Alternatives 1A, 1B, and 1C would differ, all of these alternatives would include a wetland preserve that would allow for the continued use of the Plan Area for movement of terrestrial and aquatic species between existing and planned preserves under the SSHCP and would, therefore, not interfere substantially with the movement of native resident or migratory species. Impacts associated with loss of native trees and non-native native tree canopy would remain the same as under the Project.

As described for the Project, Alternatives 1A, 1B, and 1C would not strictly conform to the requirements for stream channel re-routing, widening, or deepening set forth in the SSHCP. However, Appendix K to the SSHCP includes a variance to Avoidance and Minimization Measure STREAM-5 for the Project that would also apply to these alternatives, and this inconsistency would be addressed through implementation of Mitigation Measures BR-18 through BR-20. Alternatives 1A, 1B, and 1C would preserve 214.3 acres which does not meet the 225 acres called for in the Conservation Strategy of the SSHCP, as discussed for the Project. Alternatives 1A, 1B, and 1C would have similar effects on biological resources when compared to the Project.

Alternative 2A

Alternative 2A proposes the same larger wetland preserve as Alternative 2 and is also consistent with the SSHCP. Alternative 2A would also have a reduced acreage of impact to vernal pool invertebrate habitat when compared to the Project. Alternative 2A would result in loss of habitat for vernal pool invertebrates and death of listed vernal pool invertebrates that could cause substantial reductions in the populations of these species and inhibit their recovery.

The location and level of development throughout the Plan Area under the Project and Alternative 2A would be similar and, therefore, this alternative would result in the same level of impact to special-status plant, valley elderberry longhorn beetle, burrowing owl, and tricolored blackbird habitat. Alternative 2A would result in a loss of potential habitat that could reduce local and regional populations of these special-status species.

Impacts to Swainson’s hawk foraging habitat would also remain the same as they would under the Project because impacts are dependent on where the development occurs. While Alternative 2A would result in a larger wetland preserve and a smaller area of development than the Project, the additional area of preserve would be in the portion of

the Plan Area zoned M-1, which is assumed to provide no habitat value in the impact analysis based on the County's methodology as described in the Biological Resources chapter. Therefore, this alternative would result in the same impact of 516.7 acres of foraging habitat.

If Alternative 2A is adopted in lieu of the Project, impacts would still be anticipated to Cooper's hawk, white-tailed kite, grasshopper sparrow, song sparrow (Modesto population), yellow-headed blackbird, northern harrier, or loggerhead shrike nests, as well as loss of foraging habitat for other special-status birds and the loss of active common raptor and other common bird nests. These impacts may differ from those under the Project because the likelihood that nests would be subject to adverse effects is dependent on the area of impact and Alternative 2A would develop less of the Plan Area than the Project.

Alternative 2A would also result in a similar potential for loss of American badger dens and special status bat roosts as anticipated with the Project. The impacts to western pond turtle are likely to be the same as those described for the Project because the perennial marsh areas and the pond on the southern side of the Plan Area along with associated uplands would still be developed. Alternative 2A would also result in loss and degradation of habitat for western spadefoot that could cause substantial reductions in population numbers, which could contribute to a trend toward State or federal listing.

Alternative 2A would have a reduced acreage of impact on wetlands and other waters when compared to the Project (Table Alt-17) and would include a larger area of wetland preserve (Table Alt-18). Like Alternative2, this alternative is also consistent with the SSHCP. Fill of wetlands and other waters within the Plan Area under Alternative 2A would constitute a substantial reduction in the quantity of wetlands and other waters within the region.

The impacts to riparian habitat are likely to be the same as anticipated with the Project because the large irrigation pond and other small ponds within the Plan Area where riparian habitat may occur would be developed. While the area of development and the wetland preserve proposed under Alternative 2 would differ, this alternative would include a wetland preserve that would allow for the continued use of the Plan Area for movement of terrestrial and aquatic species between existing and planned preserves under the SSHCP and would, therefore, not interfere substantially with the movement of native resident or migratory species. Impacts associated with loss of native trees and non-native native tree canopy would remain the same as they would under the Project.

As described for the Project, Alternative 2A would not strictly conform to the requirements for stream channel re-routing, widening, or deepening in the SSHCP Conservation Strategy. However, Appendix K to the SSHCP includes a variance to Avoidance and Minimization Measure STREAM-5 for the Project that would also apply to this alternative, and this inconsistency would be addressed by implementation of Mitigation Measures BR-18 through BR-20. Alternative 2A would set aside 259.8 acres, which is more than the 225 acres called for in the SSHCP Conservation Strategy, and this preserve area includes the portion of the important core preserve within Preserve Planning Unit 2 adjacent to the Mather Preserve planned as part of the SSHCP

conservation strategy. Effects on biological resources of implementing Alternative 2A would be similar to, but less than, the Project.

Alternative 3

While all of the alternatives would result in loss of habitat for vernal pool invertebrates and death of listed vernal pool invertebrates that could cause substantial reductions in the populations of these species and inhibit their recovery, Alternative 3 would have the lowest acreage of impact of all the alternatives.

The location and level of development throughout the Plan Area would be similar and, therefore, this alternative would result in the same level of impact to special-status plant, valley elderberry longhorn beetle, burrowing owl, and tricolored blackbird habitat as anticipated with the Project. Alternative 3 would result in a loss of potential habitat that could reduce local and regional populations of these special-status species.

Impacts to Swainson's hawk foraging habitat would also remain the same as they would under the Project because impacts are dependent on where the development would occur within the current zoning of the of the various portions of the Plan Area. While Alternative 3 would result in a larger wetland preserve and a smaller area of development than the Project, the additional area of preserve would be in the portion of the Plan Area zoned M-1, which is assumed to provide no habitat value in the impact analysis based on the County's methodology as described in the Biological Resources chapter. Therefore, Alternative 3 would result in the same impact of 516.7 acres of foraging habitat.

If Alternative 3 is adopted in lieu of the Project, impacts to Cooper's hawk, white-tailed kite, grasshopper sparrow, song sparrow (Modesto population), yellow-headed blackbird, northern harrier, or loggerhead shrike nests may differ from those under the Project because the likelihood that nests would be subject to adverse effects is dependent on the area of impact. Alternative 3 would result in a potential loss of active nests. Alternative 3 would also result in a loss of foraging habitat for other special-status birds and the loss of active common raptor and other common bird nests.

Alternative 3 would also result in a similar potential for loss of American badger dens and special status bat roosts. The impacts to western pond turtle are likely to be the same as anticipated with the Project because the perennial marsh areas and the pond on the southern side of the Plan Area along with associated uplands would be developed. Alternative 3 would result in loss and degradation of habitat for western spadefoot that could cause substantial reductions in population numbers, which could contribute to a trend toward State or federal listing.

Alternative 3 would have the lowest acreage of impact (Table Alt-17) and largest wetland preserve of all alternatives to the Project evaluated in this analysis (Table Alt-18). However, fill of wetlands and other waters associated with this alternative would still constitute a substantial reduction in the quantity of wetlands and other waters within the region.

The impacts to riparian habitat are likely to be the same for Alternative 3 as anticipated with the Project because the large irrigation pond and other small ponds within the Plan Area where riparian habitat may occur would be developed. While the area of

development and the wetland preserve proposed under Alternative 3 would differ from that proposed for the Project, this alternative would include a wetland preserve that would allow for the continued use of the Plan Area for movement of terrestrial and aquatic species between existing and planned preserves under the SSHCP and would, therefore, not interfere substantially with the movement of native resident or migratory species. Impacts associated with loss of native trees and non-native native tree canopy would remain the same as they would under the Project.

As described for the Project, Alternative 3 would not strictly conform to the requirements for stream channel re-routing, widening, or deepening in the SSHCP Conservation Strategy. However, Appendix K to the SSHCP includes a variance to Avoidance and Minimization Measure STREAM-5 for the Project that would also apply to this alternative, and this inconsistency would be addressed by implementation of Mitigation Measures BR-18 through BR-20. Alternative 3 would set aside 291.9 acres in a wetland preserve which would exceed the 225 acres called for in the SSHCP Conservation Strategy. However, the wetland preserve under Alternative 3 does not include a portion of the planned core preserve within Preserve Planning Unit 2 of the SSHCP that abuts the existing Mather Preserve. This inconsistency could result in increased indirect effects on the Mather Preserve when compared to the SSHCP conservation strategy due to additional development on the edge of the Mather Preserve. Overall, Alternative 3 would have similar effects on biological resources when compared to the Project.

Alternative 4

The development proposed under Alternative 4 may have slightly different placement of land uses than the Project; however, the location and level of development is generally the same throughout the site. Therefore, these alternatives would result in the same level of impact to vernal pool invertebrate habitat. Alternative 4 would result in loss of habitat for vernal pool invertebrates and death of listed vernal pool invertebrates that could cause substantial reductions in the populations of these species and inhibit their recovery.

The location and level of development throughout the Plan Area would be similar under Alternative 4 and the Project and, therefore, this alternative would result in the same level of impact to special-status plant, valley elderberry longhorn beetle, burrowing owl, and tricolored blackbird habitat. Alternative 4 would result in a loss of potential habitat that could reduce local and regional populations of these special-status species.

Under Alternative 4, impacts to Swainson’s hawk foraging and nesting habitat would also remain the same as they would under the Project because impacts are dependent on where the development would occur within the current zoning of the of the various portions of the Plan Area. Alternative 4 would have the same development footprint as the Project, although the placement of land uses within the footprint would differ from the Project. Therefore, this alternative would result in the same impact of 516.7 acres of foraging habitat.

If Alternative 4 is adopted in lieu of the Project, impacts to Cooper’s hawk, white-tailed kite, grasshopper sparrow, song sparrow (Modesto population), yellow-headed blackbird, northern harrier, and loggerhead shrike nests are anticipated to be similar to the Project because the likelihood that nests would be subject to adverse effects is

dependent on the area of impact and Alternative 4 would result in the developing the same portions of the Plan Area as the Project. Alternative 4 would also result in a loss of foraging habitat for other special-status birds and the loss of active common raptor and other common bird nests.

Alternative 4 would also result in a similar potential for loss of American badger dens and special status bat roosts. The impacts to western pond turtle are likely to be the same for Alternative 4 as anticipated with the Project because the perennial marsh areas and the pond on the southern side of the Plan Area along with associated uplands would be developed. Alternative 4 would result in loss and degradation of habitat for western spadefoot that could cause substantial reductions in population numbers, which could contribute to a trend toward State or federal listing.

For Alternative 4, the impacts related to the loss of wetlands and other waters would be the same as those under the Project. Fill of wetlands and other waters within the Plan Area would constitute a substantial reduction in the quantity of wetlands and other waters within the region.

The impacts to riparian habitat are likely to be the same as anticipated with the Project because the large irrigation pond and other small ponds within the Plan Area where riparian habitat may occur would be developed. Like the Project, Alternative 4 would include a wetland preserve that would allow for the continued use of the Plan Area for movement of terrestrial and aquatic species between existing and planned preserves under the SSHCP and would, therefore, not interfere substantially with the movement of native resident or migratory species. Impacts associated with loss of native trees and non-native native tree canopy would remain the same as they would under the Project.

As described for the Project, Alternative 4 would not strictly conform to the requirements for stream channel re-routing, widening, or deepening in the SSHCP Conservation Strategy. However, Appendix K to the SSHCP includes a variance to Avoidance and Minimization Measure STREAM-5 for the Project that would also apply to this alternative, and This inconsistency would be addressed by implementation of Mitigation Measures BR-18 through BR-20. Alternative 4 would preserve 214.3 acres which does not meet the 225 acres called for in the Conservation Strategy of the SSHCP, as discussed for the Project. Alternative 4 would have similar effects on biological resources when compared to the Project.

Climate Change

No Project Alternative

The No Project Alternative would generate lower GHG emissions from continued agricultural operations in the Plan Area. Overall, the GHG emission impacts of the No Project Alternative would be less than those that would occur with the Project.

Alternatives 1A, 1B, 1C, 2A, 3, and 4

Although Alternatives 1A, 1B, 1C, 2A, 3, and 4 differ from the Project in the mix of land uses and trip generation, construction and operational GHG impacts are likely to be similar due to the size and scale of the overall development. Similar to the Project,

application of Mitigation Measure CC-1a may not reduce the effects of Alternatives 1A, 1B, 1C, 2A, 3, and 4 to Sacramento County's per capita thresholds (Mitigation Measure CC-1a would reduce climate change impacts to levels below SMAQMD per capita thresholds). Mitigation Measure CC-1b would require that the Project Applicant develop a Project-specific GHGRP and/or other feasible, onsite GHG reduction mitigation measures sufficient to reduce operational GHG emissions to Sacramento County's per capita thresholds of significance for residential and nonresidential energy, and transportation. The contribution to global climate change would be similar to the Project.

Cultural Resources

No Project Alternative

Under the No Project Alternative, ground disturbance would be largely concentrated in the area zoned for industrial uses. Overall, impacts to archaeological, historical, paleontological, and tribal cultural resources under the No Project Alternative would be less than under the Project due to the reduced ground disturbance.

Alternatives 1A, 1B and 1C

Development of Alternatives 1A, 1B, and 1C would result in the same areas being subject to ground disturbing activities as the Project and would, therefore, have the same potential to encounter unknown archaeological resources and result in the potential for demolition of historic structures. Impacts to unevaluated resources within the 25-acre parcel added to the Area of Potential Effect (APE), and unknown resources within non-participating properties would require further evaluation.

There are no known burials of human remains within the Plan Area, but it is possible that unknown remains could be uncovered during ground disturbing activities. As with the Project, compliance with California Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097 would address this impact**.** Implementation and build-out of Alternative 1A may be subject to subsequent discretionary projects that would require site-specific, project-level analysis to fulfill CEQA requirements. This would include AB 52 consultation that could lead to the identification of TCRs. As with the Project, this would be addressed through compliance with PRC Sections 21074, 21080.3.1, 21080.3.2, and 21082.3. Effects on cultural resources would, therefore, be similar to the Project.

Alternative 2A

Alternative 2A would have a reduced development footprint due to the additional area of wetland preserve. Development of Alternative 2A would result in demolition of the same historic structures as the Project, however, because there are not structures in the "thumb" area that would be preserved under these alternatives. There are no known archaeological resources within the Plan Area, but it is possible that unknown resources could be uncovered during ground disturbing activities. Impacts to unevaluated resources within the 25-acre parcel added to the APE, and unknown resources within non-participating properties would require further evaluation.

There are no known burials of human remains within the Plan Area, but it is possible that unknown remains could be uncovered during ground disturbing activities. As with the Project, compliance with California Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097 would address this impact**.**

Development of Alternative 2A would result in the same areas being subject to ground disturbing activities as the Project and would, therefore, have the same potential to encounter unknown archaeological resources and result in the potential for demolition of historic structures. Impacts to unevaluated resources within the 25-acre parcel added to the APE, and unknown resources within non-participating properties would require further evaluation. Implementation and build-out of Alternative 2A may be subject to subsequent discretionary projects that would require site-specific, project-level analysis to fulfill CEQA requirements. This would include AB 52 consultation that could lead to the identification of TCRs. As with the Project, this would be addressed through compliance with PRC Sections 21074, 21080.3.1, 21080.3.2, and 21082.3. Effects on cultural resources would, therefore, be similar to the Project.

Alternative 3

Alternative 3 would result in a reduced development footprint that may decrease the potential to encounter unanticipated archaeological resources within the Plan Area. Nonetheless the potential to uncover undocumented resources would occur throughout the majority of the Plan Area. Further, the non-participating areas have not been subject to archaeological survey. Impacts to unevaluated resources within the 25-acre parcel added to the APE, and unknown resources within non-participating properties would require further evaluation.

There are no known burials of human remains within the Plan Area, but it is possible that unknown remains could be uncovered during ground disturbing activities. As with the Project, compliance with California Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097 would address this impact**.** Implementation and build-out of Alternative 3 may be subject to subsequent discretionary projects that would require site-specific, project-level analysis to fulfill CEQA requirements. This would include AB 52 consultation that could lead to the identification of TCRs. As with the Project, this would be addressed through compliance with PRC Sections 21074, 21080.3.1, 21080.3.2, and 21082.3. Effects on cultural resources would, therefore, be similar to the Project.

Alternative 4

Development of Alternative 4 result in the same areas being subject to ground disturbing activities as the Project and would, therefore, have the same potential to encounter unknown archaeological resources and result in the potential for demolition of historic structures. Further, the non-participating areas have not been subject to archaeological survey. Impacts to unevaluated resources within the 25-acre parcel added to the APE, and unknown resources within non-participating properties would require further evaluation.

There are no known burials of human remains within the Plan Area, but it is possible that unknown remains could be uncovered during ground disturbing activities. As with the Project, compliance with California Health and Safety Code Sections 7050.5 and 7052

and PRC Section 5097 would address this impact**.** Implementation and build-out of Alternative 4 may be subject to subsequent discretionary projects that would require site-specific, project-level analysis to fulfill CEQA requirements. This would include AB 52 consultation that could lead to the identification of TCRs. As with the Project, this would be addressed through compliance with PRC Sections 21074, 21080.3.1, 21080.3.2, and 21082.3. Effects on cultural resources would, therefore, be similar to the Project.

Energy

No Project Alternative

The No Project Alternative would result in less operational and transportation energy demand than the Project because the potential for development would be reduced compared to the Project.

Alternatives 1A, 1B, and 1C

Alternatives 1A, 1B, and 1C would allow for similar levels of development, but in slightly different land use configurations when compared to the Project. There would be no major reduction in the amount and type of land developed under Alternatives 1A, 1B, and 1C and, therefore, no major increase or decrease in energy use under these alternatives. Similar to the Project, these alternatives would also include measures that would reduce Project-related energy use. Energy use associated with construction and operation of land uses under these alternatives would be considered necessary and would not result in in the wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation. These alternatives would comply with the California Energy Code and SMUD would comply with the State's Renewable Portfolio Standard. As a result, these alternatives would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. This impact would be similar to the Project**.**

Alternative 2A

Alternative 2A would result in a 45.5-acre increase in an area designated Wetland Preserve compared to the Project. Alternative 2A would include design features from the Jackson Township Specific Plan document that would increase energy efficiency in the buildings and facilities when compared to the original Project. Alternative 2A would also include design features to reduce the Project's anticipated annual VMT and, therefore, reduce transportation-related energy demand when compared to the original Project. This alternative would not result in in the wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation. This alternative would comply with the California Energy Code and SMUD would comply the State's Renewable Portfolio Standard. As a result, this alternative would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. This impact would be similar to the Project**.**

Alternative 3

Alternatives 3 would result in less development at the eastern boundary of the Plan Area by increasing the open space. Total area of land to be developed under Alternatives 3 would be less than the Project and would, therefore, result in the less energy use associated with construction and operation of the alternative. Energy use associated with construction and operation of land uses under Alternative 3 and 4 would be considered a necessary part of the Project and would not result in in the wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation. This alternative would comply with the California Energy Code and SMUD would comply the State's Renewable Portfolio Standard. As a result, the Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. This impact would be similar to the Project**.**

Alternative 4

Alternative 4 retains the existing zoning of one larger parcel in the western portion of the Plan Area, which is currently occupied by the Sacramento Raceway. Energy use associated with construction and operation of land uses under Alternative 4 would be considered a necessary part of the Project and would not result in in the wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation.

Due to the similar mix of land uses, compared to the Project, it is anticipated that, generally, a similar level of energy infrastructure would be required for the development of this alternative. Similar to the Project, this alternative would comply with the California Energy Code and SMUD would comply the State's Renewable Portfolio Standard. As a result, this alternative would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. This impact would be similar to the Project.

Geology, Soils, and Mineral Resources

No Project Alternative

The No Project Alternative would substantially reduce the potential for development in the Plan Area. Development would be subject to the same regulations as the Project, including the UBC and CBC, which would ensure the maximum necessary protection available for development within areas known to contain expansive soils. Due to the reduction in development, impacts associated with soil erosion, siltation, loss of topsoil, exposure to expansive soils, and destruction of paleontological resources would be less than those associated with development of the Project.

Alternatives 1A, 1B, and 1C

Impacts associated with soil erosion, siltation, and loss of topsoil would be the same as the impact of Project. Minor shifts in land uses would not result in changes to the level of impact, as the soil within the Plan Area would be affected in the same way, regardless of specific type of land use. Development would be subject to the same regulations as the Project, including the UBC and CBC, which would ensure the

maximum necessary protection available for development within areas known to contain expansive soils.

The potential to encounter unanticipated paleontological resources would also remain the same as under the Project. Minor shifts in land uses would result in no changes to the level of impact, because the potential is associated with land disturbance and Alternatives 1A, 1B, and 1C include substantial areas of excavation and development. With the implementation of the Mitigation Measure GS-1 construction workers and operational personnel would be alerted to the possibility of encountering paleontological resources and professionally accepted and legally compliant procedures for the discovery of paleontological resources would be implemented in the event of a find. The effects on geology, soils, and paleontological resources would be similar to the Project.

Alternative 2A

The wetland preserve would be expanded under Alternative 2A, and there would be slightly less development than under the Project, which would result in reduced potential for erosion due to less ground disturbance. Development would be subject to the same regulations as the Project, including the UBC and CBC, which would ensure the maximum necessary protection available for development within areas known to contain expansive soils.

The potential to encounter unanticipated paleontological resources would also remain the same as under the Project. Minor shifts in land uses would result in no changes to the level of impact, because the potential is associated with land disturbance and Alternative 2A includes substantial areas of excavation and development, though at a slightly lower level than the Project. With the implementation of the Mitigation Measure GS-1, impacts would be reduced because construction workers and operational personnel would be alerted to the possibility of encountering paleontological resources and professionally-accepted and legally-compliant procedures for the discovery of paleontological resources would be implemented in the event of a find. The effects on geology, soils, and paleontological resources would be similar to the Project.

Alternative 3

Alternative 3 would result is slightly less potential for erosion because there would be less ground disturbance due to an increase in the area set aside as wetland preserve and development would be subject to the same regulations as the Project. Any development would need to adhere to the UBC and CBC, which would ensure the maximum necessary protection available for development within areas known to contain expansive soils.

The potential to encounter unanticipated paleontological resources would also remain the same as under the Project. Minor shifts in land uses would result in no changes to the level of impact, because the potential is associated with land disturbance and Alternative 3 includes substantial areas of excavation and development. With the implementation of the Mitigation Measure GS-1, impacts would be reduced because construction workers and operational personnel would be alerted to the possibility of encountering paleontological resources and professionally-accepted and legally-compliant procedures for the discovery of paleontological resources would be

implemented in the event of a find. The effects on geology, soils, and paleontological resources would be similar to the Project.

Alternative 4

With implementation of Alternative 4, the same Plan Area would be potentially subject to ground disturbance as the Project and development would be subject to the same regulations as the Project. Any development would need to adhere to the UBC and CBC, which would ensure the maximum necessary protection available for development within areas known to contain expansive soils.

The potential to encounter unanticipated paleontological resources would also remain the same as under the Project. Minor shifts in land uses would result in no changes to the level of impact, because the potential is associated with land disturbance and Alternative 4 includes substantial areas of excavation and development. With the implementation of the Mitigation Measure GS-1, impacts would be reduced because construction workers and operational personnel would be alerted to the possibility of encountering paleontological resources and professionally-accepted and legally-compliant procedures for the discovery of paleontological resources would be implemented in the event of a find. The effects on geology, soils, and paleontological resources would be similar to the Project.

Hazardous Materials

No Project Alternative

The No Project Alternative could result in development of a portion of the Plan Area for light industrial use. This zoning generally allows for the assembly of manufactured goods and is not associated with use of large quantities of potentially hazardous materials. Further, any construction and operation of light industrial uses would be subject to existing regulations governing the use, transport, and disposal of hazardous materials. New land uses could occur without improvements to area roadways or the provision of additional firefighting equipment, however, which could affect the implementation of an emergency response plan or increase exposure to wildland fire hazards. Effects would be similar to those anticipated with the Project.

Alternatives 1A, 1B, and 1C

Alternatives 1A, 1B, and 1C would be subject to the same strict regulations that control the transport, use, and disposal of hazardous materials, and would not result in the development of different types of land uses that would be subject to greater risk from accidental release than the Project. Implementation of Mitigation Measures HM-1 through HM-3 would require further evaluation and characterization of the Plan Area.

Although there are differences in the land use pattern and the number of residents anticipated, there are no substantial differences in factors affecting emergency response between the Project and Alternatives 1A, 1B, and 1C. The basic roadway network would be substantially similar to the Project (a connected grid pattern, consistent with County DOT standards) and implementation would be phased so that the County's emergency planning could incorporate the growth in the Plan Area gradually.

Alternatives 1A, 1B, and 1C would urbanize the same portion of the Plan Area as the Project. It would also include the same mix of school facilities as the Project, including an elementary school on the Sacramento Raceway property. The school sites would be generally surrounded by commercial, mixed-use, and residential development; no industrial land use is proposed. The California Education Code includes requirements for evaluation and remediation of new school sites. These alternatives would also include a new fire station with equipment designed to fight grass fires. All development would be subject to regulations that require safety measures to minimize the threat of fire. Impacts would be similar to the Project.

Alternative 2A

With the 45.5-acre increase in area designated Wetland Preserve, Alternative 2A would result in slightly less potential for ground disturbance than the Project. However, the remainder of the Plan Area would remain subject to the potential for discovery of, and exposure to, contaminated soils and/or groundwater. Alternative 2A would be subject to the same strict regulations that control the transport, use, and disposal of hazardous materials, and would not result in the development of different types of land uses that would be subject to greater risk from accidental release than the Project. Implementation of Mitigation Measures HM-1 and HM-2 would require further evaluation and characterization of the Plan Area.

The effects of Alternative 2A on emergency response and evacuation plans would be similar to the Project because the basic roadway network would be substantially similar to the Project and implementation would be phased so that the County's emergency planning could incorporate the growth in the Plan Area gradually.

Alternative 2A would have similar potential for conflict with schools as discussed for the Project in Chapter 13, "Hazardous Materials." This alternative proposes the same mix of school facilities as the Project, including an elementary school on the Sacramento Raceway property. The school sites would be generally surrounded by commercial, mixed-use, and residential development; no industrial land use is proposed. The California Education Code includes requirements for evaluation and remediation of new school sites.

Alternative 2A would also increase the proportion of the Plan Area that is set aside as open space, which would translate to an increased potential for wildland fire in the Plan Area. However, this alternative would include a new fire station with equipment designed to fight grass fires, and all development would be subject to regulations that require safety measures to minimize the threat of fire. Therefore, the overall impact associated with Alternative 2A would be similar to the Project.

Alternative 3

Each of the Alternatives would result in the same areas being subject to the accidental release of hazardous materials. Alternative 3 would be subject to the same strict regulations that control the transport, use, and disposal of hazardous materials, and would not result in the development of different types of land uses that would be subject to greater risk from accidental release than the Project. Implementation of Mitigation Measures HM-1 and HM-2 would require further evaluation and characterization of the Plan Area.

Although there are differences in the land use pattern and the number of residents anticipated, there are no substantial differences in factors affecting emergency response between the Project and Alternative 3. The basic roadway network would be substantially similar to the Project (a connected grid pattern, consistent with County DOT standards) and implementation would be phased so that the County's emergency planning could incorporate the growth in the Plan Area gradually.

Alternative 3 would increase the proportion of the Plan Area that is set aside as open space. Under Alternative 3, there would be one less elementary school constructed. In addition, the joint high school and middle school campus would be located near areas designated for light industrial land use. However, the California Education Code includes requirements for evaluation and remediation of new school sites. The additional open space would also result in an increased potential for wildland fire in the Plan Area. However, Alternative 3 would include a new fire station with equipment designed to fight grass fires, and all development would be subject to regulations that require safety measures to minimize the threat of fire. Overall, impacts would be similar to the Project.

Alternative 4

This alternative would result in development of the same Plan Area as the Project, which would result in the same areas being subject to the accidental release of hazardous materials. Alternative 4 would be subject to the same strict regulations that control the transport, use, and disposal of hazardous materials, and would not result in the development of different types of land uses that would be subject to greater risk from accidental release than the Project. Implementation of Mitigation Measures HM-1 and HM-2 would require further evaluation and characterization of the Plan Area.

Although there are differences in the land use pattern and the number of residents anticipated, there are no substantial differences in factors affecting emergency response between the Project and Alternative 4. The basic roadway network would be substantially similar to the Project (a connected grid pattern, consistent with County DOT standards) and implementation would be phased so that the County's emergency planning could incorporate the growth in the Plan Area gradually.

Alternative 4 would urbanize the same portion of the Plan Area as the Project. Under Alternative 4, however, there would be one less elementary school constructed. In addition, the joint high school and middle school campus would be located near areas designated for light industrial land use. The California Education Code includes requirements for evaluation and remediation of new school sites. This alternative would also include a new fire station with equipment designed to fight grass fires. All development would be subject to regulations that require safety measures to minimize the threat of fire. Impacts would be similar to the Project.

HYDROLOGY AND WATER QUALITY

NO PROJECT ALTERNATIVE

The No Project Alternative would result in less impervious surface area as compared to future development potential under the Project. This would increase surface water infiltration and reduce sedimentation and other pollutants in stormwater runoff. Overall, the hydrology and water quality impacts of the No Project Alternative would be less than those of the Project.

ALTERNATIVES 1A, 1B, AND 1C

Alternatives 1A, 1B, and 1C would include modifications to the existing drainage and overall development of the Plan Area in a manner similar to the Project. Alternatives 1A, 1B, and 1C would implement the same Drainage Plan and result in a similar conversion of the Plan Area to impervious surfaces when compared to the Project. LID improvements would be incorporated, as discussed for the Project. Mitigation Measure HYD-1a and HYD-1b would require demonstration that the design features described above would mitigate for the development's potential effects on water quality.

Alternatives 1A, 1B, and 1C would include modifications to the existing drainage and overall development of the Plan Area at a level that is similar to the Project, and would not increase flows to the adjacent aggregate quarry. As described in HYD-2, approval of a Conditional Letter of Map Revision (CLOMR) from the Federal Emergency Management Agency (FEMA) would be required prior to any modifications to the existing floodplain.

Alternatives 1A, 1B, and 1C would occur in the same location as the Project and would have similar effects associated with the potential for flooding because of dam or levee failure due to recently completed flood protection projects and distance from dams and levees. Alternatives 1A, 1B, and 1C would result in a similar amount of impervious surface as the Project. Therefore, flooding effects in the Beach Stone Lakes (BSL) area would be similar. Alternatives 1A, 1B, and 1C would be required to comply with the same stormwater quality regulations as the Project. The effects on hydrology and water quality would be similar to the Project.

ALTERNATIVE 2A

Alternative 2A would increase the amount of undeveloped land in the eastern portion of the Plan Area, which could contribute to attenuation of stormwater and a reduction in stormwater flows. Further, the main design features of the Drainage Plan that contribute to stormwater quality and hydromodification attenuation are proposed in the western (downstream) portion of the Plan Area and would not be affected. Mitigation Measure HYD-1a and HYD-1b would require demonstration that the design features described above would mitigate for the development's potential effects on water quality.

Alternative 2A would also include modifications to the existing drainage and overall development of the Plan Area at a level that is similar to the Project, including the consolidation of Morrison Creek flows. Alternative 2A would occur in the same location as the Project and would have a similar impact associated with the potential for flooding

because of dam or levee failure due to recently completed flood protection projects and distance from dams and levees. Alternative 2A would be required to comply with the same stormwater quality regulations as the Project. The effects on hydrology and water quality would be similar to the Project.

Alternative 3

Alternative 3 would include modifications to the existing drainage and overall development of the Plan Area in a manner similar to the Project. Alternative 3 would increase the undeveloped portion of the Plan Area, which could contribute to attenuation of stormwater and a reduction in stormwater flows. These changes would occur in the eastern portion of the Plan Area. The main design features of the Drainage Plan that contribute to stormwater quality and hydromodification attenuation are proposed in the western (downstream) portion of the Plan Area and would not be affected. LID improvements would be incorporated, as discussed for the Project. Mitigation Measure HYD-1a and HYD-1b would require demonstration that the design features described above would mitigate for the development's potential effects on water quality.

Alternative 3 would include modifications to the existing drainage and overall development of the Plan Area at a level that is similar to the Project, and would not increase flows to the adjacent aggregate quarry. As described in HYD-2, approval of a CLOMR from FEMA would be required prior to any modifications to the existing floodplain.

Alternative 3 would occur in the same location as the Project and would have similar effects associated with the potential for flooding because of dam or levee failure due to recently completed flood protection projects and distance from dams and levees. Alternative 3 would result in a similar amount of impervious surface as the Project. Therefore, flooding effects in the BSL area would be similar. Alternative 3 would be required to comply with the same stormwater quality regulations as the Project. The effects on hydrology and water quality would be similar to the Project.

Alternative 4

Alternative 4 would include modifications to the existing drainage and overall development of the Plan Area in a manner similar to the Project. Alternative 4 would implement the same Drainage Plan and result in a similar conversion of the Plan Area to impervious surfaces when compared to the Project. LID improvements would be incorporated, as discussed for the Project. Mitigation Measure HYD-1a and HYD-1b would require demonstration that the design features described above would mitigate for the development's potential effects on water quality.

Alternative 4 would include modifications to the existing drainage and overall development of the Plan Area at a level that is similar to the Project, and not increase flows to the adjacent aggregate quarry. As described in HYD-2, approval of a CLOMR from FEMA would be required prior to any modifications to the existing floodplain.

Alternative 4 would occur in the same location as the Project and would have similar effects associated with the potential for flooding because of dam or levee failure due to recently completed flood protection projects and distance from dams and levees. Alternative 4 would result in a similar amount of impervious surface as the Project. Therefore, flooding effects in the BSL area would be similar. Alternative 4 would be required to comply with the same stormwater quality regulations as the Project. The effects on hydrology and water quality would be similar to the Project.

Land Use

No Project Alternative

This alternative would not result in any conflicts with existing land uses or divide an established community. No conflicts with adopted plans would occur. The No Project Alternative would avoid the loss of open space lands identified for the Project. Overall, land use impacts under this alternative would be less than, but similar to, the Project.

Alternatives 1A, 1B, 1C, 3, and 4

The SACOG Blueprint, adopted in 2005, acknowledged the Jackson Highway Corridor as an appropriate and logical area to urbanize. The 2030 General Plan, adopted in 2011, contemplated new growth areas to occur via expansion of the UPA, including the Jackson Highway area. Specific plans provide an opportunity to creatively implement the intent of the General Plan and serve as a refinement of General Plan policies. The alternatives would all establish a development framework for land use, community design and character, infrastructure improvements and a subsequent project approval structure for orderly development within the approximately 1,400-acre Plan Area that is generally consistent with the applicable policies in the 2030 General Plan (see Table Alt-19), although conformity cannot be determined at the Plan Level for all land use policies. Consistency with the 2030 General Plan is required by State law. Furthermore, no zoning, tentative maps, parcel maps, or public works projects can be approved, adopted, or undertaken unless they are consistent with the adopted specific plan.

Alternatives 1A, 1B, 1C, 3, and 4 are substantially consistent with the Project because they all require expansion of the UPA and would include similar smart growth principles. The alternatives would result in more than 10 dwelling units per acre if using “double net” methodology (see Tables Alt-1, Alt-3, Alt-5, Alt-11, and Alt-13) and would follow similar principles as the Project related to proximity to amenities, the amount of mixed use proposed, transit service, and proximity to existing employment centers. The alternatives would also score 19 points and exceed the criteria-based standards under the LU-120 evaluation. Alternatives 1A, 1B, 1C, 3, and 4 are substantially consistent with the Project with respect to the principals of the Blueprint and the land use forecasts in the MTP/SCS. Effects on land use would be similar to the Project.

Table Alt-19: Project Alternative Consistency with General Plan Policy

Policy		Consistency Discussion
		Project Alternatives 1A, 1B, 1C, 2A, 3, and 4
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.	All the alternatives include the protection of open space, including a wetland preserve that would be contiguous with existing and planned preserves and a network of greenbelts. All alternatives would be 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).	Alternative lot configurations, including clustering, may occur in the Low Density Residential and Medium Density Residential land use designations. This EIR evaluates the protection of resources at the Plan level. The alternatives would all provide adequate infrastructure capacity and provides design guidelines applicable to the Plan Area overall. Should development clustering be proposed for individual projects within the Low Density Residential and Medium Density Residential land use designations, consistency with this Policy will be required.
LU-1	The County shall not provide urban services beyond the Urban Policy Area, except when the County determines the need for health and safety purposes and the extension provisions as provided in Policy LU-1.1.	All of the alternatives include a request to expand the UPA, so if approved, each of the alternatives would be consistent with this policy.

Policy		Consistency Discussion
		Project Alternatives 1A, 1B, 1C, 2A, 3, and 4
LU-3	It is the intent of the County to focus investment of public resources on revitalization efforts within existing communities, especially within commercial corridors, while also allowing planning and development to occur within strategic new growth areas.	Each of the alternatives are located within the same Plan Area as the Project and Alternative 2, so are not located within a commercial corridor.
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.	Although each of the alternatives include a preserve area, none of them are consistent with the SSHCP hardline preserve strategy.
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.	The alternative land use plans incorporate all features outlined in Policy LU-26. Alternatives 1A, 1B, 1C, 2A, 3, and 4 would be consistent with this policy.

Policy	Consistency Discussion
	Project Alternatives 1A, 1B, 1C, 2A, 3, and 4
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.	The alternatives all include greenbelts, landscaped corridors, and parks. Most residential units within the Plan Area would be located within 0.25 mile of an open space area, park, or linear parkway; and within 0.5 mile of retail and employment land uses. Therefore, the alternatives would be consistent with this policy.
LU-113 The County shall work with SACOG to support implementation of Blueprint's policies and land use objectives.	The alternatives all have the same project boundary as the Project and Alternative 2, so each is located in an area shown as a future growth area in the SACOG Blueprint map.

du/ac = dwelling units per acre

Alternative 2A

Alternative 2A would also require expansion of the UPA and would include similar smart growth principles. Alternative 2 would result in more than 10 dwelling units per acre if using “double net” methodology (see Table Alt-19). However, Alternative 2A would provide for fewer high-density uses, only accounting for approximately 34.7 percent of all residential units, which does not meet the performance standard for PC-4 (requiring 34.8 percent high-density). Like the Project and all the alternatives, Alternative 2A would score 19 points in the criteria-based standards. However, because it would not meet performance standard PC-4 unless additional high-density housing is added to the design, effects on land use would greater than the Project.

Noise

No Project Alternative

The No Project Alternative would generally reduce the potential for construction and operation noise compared to that identified for the Project. As described above, the western portion of the Plan Area, including the triangle of property north of Kiefer Boulevard, could be built out with light industrial uses, which may result in short-term construction noise. Because permitted uses in this zone tend to consist manufacturing and assembly within an enclosed area, operational noise is not assumed to be substantial.

Further, although raceway operations are not permitted, because the facility is currently in operation, it is assumed that events could continue at the Sacramento Raceway under the No Project Alternative. Under this alternative, however, there would not be development of adjacent residential land uses, which would limit the potential for impacts. Therefore, the noise impacts of the No Project Alternative would be less than those anticipated with implementation of the Project.

Alternatives 1A, 1B, and 1C

These alternatives would result in a similar mix of land uses and the introduction of new noise-sensitive land uses. Introduction of sensitive land uses under these alternatives could result in sensitive land uses (e.g., residential) being developed and occupied before the development of adjacent land uses. Similar to the Project, sensitive receptors could be exposed to construction noise levels above the Sacramento County noise standards if the development of land uses adjacent to the sensitive receptors were to occur during nighttime hours. Implementation of the noise control measures identified in Mitigation Measure NOI-1 would substantially reduce construction noise levels and, subsequently, levels of annoyance and potential sleep disruption to occupants of nearby residential dwellings. Similar to the Project, vibration-inducing construction activity could occur within 550 feet or within 100 feet of sensitive land uses with new sensitive receptors, resulting in disturbance or possible structural damage. 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.

These alternatives would generate the same general traffic volume increases, and subsequent traffic noise level increases, along affected roadways surrounding the Plan Area. Mitigation Measures NOI-3 could reduce traffic noise levels along affected roadways. However, it is not known whether the mitigation measure would fully reduce traffic noise levels along affected roadways to below Sacramento County's transportation noise standard of 65 dB L_{dn} because there is no guarantee that residents would accept the offer of a sound barrier. Mitigation Measure NOI-4 would reduce the traffic noise levels between 4 to 6 dB along this segment of Excelsior Road, resulting in a noise level of 60 to 62 dB L_{dn} and below Sacramento County's transportation noise standard of 65 dB L_{dn}. Similar to the Project scenario, the traffic noise impact occurring on this roadway segment (Excelsior Road between Jackson Road and Elder Creek Road) may occur before Mitigation Measures NOI-3 is implemented, resulting in an impact to sensitive receptors along this roadway segment. Because these alternatives would allow for similar levels of development, traffic increases and subsequent traffic noise level increases along project-affected roadways under these alternatives would be similar to those modeled for the Project. As a result, the impact on existing ambient noise levels for these alternatives would be the same as the Project. Mitigation Measure NOI-8 could reduce the incremental increase in traffic noise levels along affected roadways. However, it is not known whether the mitigation measure would fully reduce traffic noise levels along affected roadways 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. Mitigation Measure NOI-9 would reduce incremental traffic noise level increases along affected roadways through the use of rubberized asphalt. However, it is not known whether Mitigation Measure NOI-9 would reduce the incremental traffic noise increase to less than significant levels on affected roadways.

These alternatives would still include a land use configuration that includes land uses that would be located adjacent to the existing single-family homes along Jackson Road including low- and high-density residential, mixed-use, general commercial, and office. These new land uses could include stationary noise sources (e.g., HVAC equipment) which generate noise up to 70 dB. Similar to the Project, new stationary noise sources would be at a distance at which noise levels from these sources would not exceed Sacramento County's exterior noise standard for daytime noise (i.e., 55 dBA) or Construction and operational noise would be similar to the Project.

ALTERNATIVE 2A

Alternative 2A would increase the wetland preserve on the eastern boundary of the Plan Area, but would include a similar mix and configuration of land uses compared to Project. Introduction of new noise sensitive land uses could still result in noise sensitive land uses (e.g., residential, schools) being developed and occupied before the development of adjacent land uses. Similar to this impact under the Project, sensitive receptors could be exposed to construction noise levels above the Sacramento County noise standards if development of land uses adjacent to the sensitive receptors were to occur during nighttime hours. Implementation of the noise control measures identified in Mitigation Measure NOI-1 would substantially reduce construction noise levels and, subsequently, levels of annoyance and potential sleep disruption to occupants of nearby residential dwellings.

Similar to the Project, vibration-inducing construction activity could occur within 550 feet or within 100 feet of sensitive land uses with new sensitive receptors, resulting in disturbance or possible structural damage. 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.

Alternative 2A would result in a 45.5-acre increase in area designated wetland preserve compared to the Project and decrease the overall area that would be developed in the Plan Area. As a result, associated traffic volume increases would be less than those compared to the Project. Table NOI-14 includes roadway segments that would experience traffic-related noise increases as a result of implementation of Alternative 2A. The effects of Alternative 2A would be substantially the same because they are associated with the overall level of development within the Plan Area. As shown in Table NOI-14, implementation of Alternative 2A would not result in traffic-related noise increases that would exceed any Sacramento County noise standard. In regard to the City of Rancho Cordova transportation noise standard, several of the affected roadway segments exceed the City's standard of 60 dB L_{dn} under existing conditions. However, under existing plus Alternative 2A conditions, no roadway segments in Rancho Cordova would experience an increase in traffic noise levels above 60 dB L_{dn} that were below this level under existing conditions.

Similar to the Project, new stationary noise sources would be at a distance at which noise levels from these sources would not exceed Sacramento County's exterior noise standard for daytime noise (i.e., 55 dBA) or nighttime noise (i.e., 50 dBA); however Alternative 2A would result in a substantial increase in noise levels within the surrounding area. Mitigation Measure NOI-8 could reduce the incremental increase in traffic noise levels for sensitive receptors along affected roadways. However, it is not known whether the mitigation measure would fully reduce traffic noise levels along affected roadways 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. Mitigation Measure NOI-9 would reduce incremental traffic noise level increases along affected roadways through the use of rubberized asphalt. However, it is not known whether Mitigation Measure NOI-9 would reduce the incremental traffic noise increase to less than significant levels on affected roadways. Overall, the Noise effects of Alternative 2 would be slightly less than the Project due to the decreased traffic volumes during operation.

ALTERNATIVE 3

This alternative would result in a similar mix of land uses and the introduction of new noise-sensitive land uses. Introduction of sensitive land uses under these alternatives could result in sensitive land uses (e.g., residential) being developed and occupied before the development of adjacent land uses. Similar to the Project, sensitive receptors could be exposed to construction noise levels above the Sacramento County noise standards if the development of land uses adjacent to the sensitive receptors were to occur during nighttime hours. Implementation of the noise control measures identified in Mitigation Measure NOI-1 would substantially reduce construction noise levels and,

subsequently, levels of annoyance and potential sleep disruption to occupants of nearby residential dwellings. Similar to the Project, vibration-inducing construction activity could occur within 550 feet or within 100 feet of sensitive land uses with new sensitive receptors, resulting in disturbance or possible structural damage. 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.

Alternative 3 would result in less development at the eastern boundary of the Plan Area by preserving more land as open space. Because this alternative would result in less development in the Plan Area compared to the Project, traffic volume increases and subsequent traffic-related noise increases would also be reduced. The traffic modeling for Alternative 3 demonstrates that the reduced level of development, compared to the Project, is anticipated to sufficiently reduce traffic such that operational traffic noise levels would not exceed the County's transportation noise standard of 65 dB $L_{dn.}$ However, Alternative 3 includes a Light Industrial land use area in the northeast corner of the Plan Area on the north side of Kiefer Boulevard with noise sensitive land uses (high school or middle school) located adjacent on the south side of Kiefer Boulevard. As a result, ambient noise levels could increase in this area above applicable County noise standards. Mitigation Measure NOI-8 could reduce the incremental increase in traffic noise levels along affected roadways. However, it is not known whether the mitigation measure would fully reduce traffic noise levels along affected roadways 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. Mitigation Measure NOI-9 would reduce incremental traffic noise level increases along affected roadways through the use of rubberized asphalt. However, it is not known whether Mitigation Measure NOI-9 would reduce the incremental traffic noise increase to less than significant levels on affected roadways.

Overall, the Noise effects of Alternative 3 would be slightly less than the Project due to the decreased traffic volumes during operation.

Alternative 4

This alternative would result in a similar mix of land uses and the introduction of new noise-sensitive land uses. Introduction of sensitive land uses under these alternatives could result in sensitive land uses (e.g., residential) being developed and occupied before the development of adjacent land uses. Similar to the Project, sensitive receptors could be exposed to construction noise levels above the Sacramento County noise standards if the development of land uses adjacent to the sensitive receptors were to occur during nighttime hours. Implementation of the noise control measures identified in Mitigation Measure NOI-1 would substantially reduce construction noise levels and, subsequently, levels of annoyance and potential sleep disruption to occupants of nearby residential dwellings. Similar to the Project, vibration-inducing construction activity could occur within 550 feet or within 100 feet of sensitive land uses with new sensitive receptors, resulting in disturbance or possible structural damage. 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.

Alternative 4 retains the existing zoning of Light Industrial of one larger parcel in the western portion of the Plan Area and would result in less residential development compared to the Project and Alternative 2. Because this alternative would result in less development in the Plan Area compared to the Project, traffic volume increases and subsequent traffic-related noise increases would also be reduced. The traffic modeling for Alternative 2 (below) demonstrates that the reduced level of development, compared to the Project, is anticipated to sufficiently reduce traffic such that operational traffic noise levels would not exceed the County's transportation noise standard of 65 dB $L_{dn.}$

Under this alternative, it is possible that the Sacramento Raceway could be replaced by new Light Industrial uses and result in an increase the number of trips generated from this land use. Additionally, this alternative would still result in development of a considerable portion of land to be developed in the Plan Area, resulting in traffic volume increases along affected roadways. Mitigation Measure NOI-8 could reduce the incremental increase in traffic noise levels along affected roadways. However, it is not known whether the mitigation measure would fully reduce traffic noise levels along affected roadways 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. Mitigation Measure NOI-9 would reduce incremental traffic noise level increases along affected roadways through the use of rubberized asphalt. However, it is not known whether Mitigation Measure NOI-9 would reduce the incremental traffic noise increase to less than significant levels on affected roadways.

Overall, the Noise effects of Alternative 4 would be slightly less than the Project due to the decreased traffic volumes during operation.

Public Services

No Project Alternative

The No Project Alternative would have less potential to trigger the need for new or improved fire, law enforcement, or park facilities because a maximum of 2 residences and 413 acres of light industrial development would occur. Overall, the public service impacts of the No Project Alternative would be less than with implementation of the Project.

Alternative 1A

Alternative 1A would generate fewer residents than the Project. Alternative 1A would result in a buildout maximum of 5,705 residential units, a reduction of 438 homes from the Project. The overall land use types would be roughly the same, however, and demand for public services would be generally consistent with the demand generated by the Project. Further, Alternative 1A would likely be referred to as Jackson Township, if constructed, and there are no differences in factors affecting emergency response between the Project and Alternative 1A.

Alternative 1A would also include the same fire protection facilities as the Project, which would be adequate to serve Alternative 1A without any reductions in response time or level of service. As described for the Project, a fire station would be constructed within the Plan Area, the final location of which would be determined by Sacramento Metro Fire District. Funding mechanisms, policies, and regulations would assist the Sacramento County Sheriff's Department (SSD) in adequately serving new growth and demand under Alternative 1A without the construction of new facilities. SSD has indicated that the existing substation could accommodate new staffing and equipment that may be needed to serve the growth in the area.

Alternative 1A would result in similar levels of demand for school services as the Project and include the same general school sites. Adequate school facilities would be accommodated within the Plan Area and this alternative would be subject to State-mandated funding mechanism to provide for ongoing services.

Alternative 1A includes the same acreage of dedicated parkland as the Project, but would develop fewer residential units than the Project. As shown in Table Alt-20, Alternative 1A would result in parkland dedications in excess of requirements by approximately 5.1 acres. Alternative 1A would result in similar levels of demand for library services as the Project. This alternative would also include the same funding mechanism to provide for ongoing services. Impacts would be similar to the Project.

Alternative 1B

Alternative 1B is similar to the Project in terms of the number of proposed residential units. Overall, Alternative 1B would include a maximum of 6,138 residential units, a reduction of only 5 units. Alternative 1B would result in slightly a slightly larger population than the Project; an estimated 15 additional residents. The overall land use types would be roughly the same and demand for law enforcement services would be generally consistent with the demand generated by the Project. Further, Alternative 1B would also be referred to as Jackson Township, if constructed, and there are no differences in factors affecting emergency response between the Project and Alternative 1B.

Alternative 1B would generate a demand for fire protection and law enforcement that would be similar to the Project. As described for the Project, Alternative 1B would result in the construction of a fire station within the Plan Area, the final location of which would be determined by Sacramento Metro Fire District. Alternative 1B would include the same fire protection facilities as the Project, which would be adequate to serve the alternative without any reductions in response time or level of service. Funding mechanisms, policies, and regulations would assist SSD in adequately serving new growth and demand under Alternative 1B without the construction of new facilities. SSD has indicated that the existing substation could accommodate new staffing and equipment that may be needed to serve the growth in the area.

Alternative 1B would result in similar levels of demand for school services as the Project and include the same general school sites. Adequate school facilities would be accommodated within the Plan Area and this alternative would be subject to State-mandated funding mechanism to provide for ongoing services.

Like the Project, full buildout of Alternative 1B would require 82.1 acres of dedicated parkland, but the alternative would only include 81.3 acres, leaving a shortfall of 0.8 acre. With implementation of Mitigation Measure PS-1, this impact would be addressed. This alternative would also result in similar levels of demand for library services as the Project and would include the same funding mechanism to provide for ongoing services. Impacts would be similar to the Project.

Alternative 1C

Alternative 1C would generate fewer residents than the Project. The overall land use types would be roughly the same, however, and demand for public services would be generally consistent with the demand generated by the Project. Alternative 1C would likely also be referred to as Jackson Township, if constructed, and there are no differences in factors affecting emergency response between the Project and Alternative 1C.

Alternative 1C would also include the same fire protection facilities, which would be adequate to serve the alternative without any reductions in response time or level of service. As described for the Project, Alternative 1C would result in the construction of a fire station within the Plan Area, the final location of which would be determined by Sacramento Metro Fire District. Funding mechanisms, policies, and regulations would assist SSD in adequately serving new growth and demand under Alternative 1C without the construction of new facilities. SSD has indicated that the existing substation could accommodate new staffing and equipment that may be needed to serve the growth in the area.

Alternative 1C would result in similar levels of demand for school services as the Project and include the same general school sites. Adequate school facilities would be accommodated within the Plan Area and this alternative would be subject to State-mandated funding mechanism to provide for ongoing services.

Alternative 1C includes the same acreage of dedicated parkland as the Project but would develop fewer residential units than the Project. Alternative 1C would result in a buildout maximum of 5,692 homes, a reduction of 451 homes from the Project. However, this alternative would include the same acreage of parkland dedication as the Project. As shown in Table Alt-20, Alternative 1C would result in parkland dedications in excess of requirements by approximately 5.1 acres.

Alternative 1C would result in similar levels of demand for library services as the Project. Each alternative would also include the same funding mechanism to provide for ongoing services. Impacts would be similar to the Project.

Alternative 2A

The overall land uses proposed under Alternative 2A types would be roughly the same as proposed for the Project, and demand for public services would be generally consistent with the demand generated by the Project. Alternative 2A would likely also be referred to as Jackson Township, if constructed, and there are no differences in factors affecting emergency response between the Project and Alternative 2A.

Alternative 2A would result in fewer residents than the Project, but would include the same fire protection facilities. As described for the Project, Alternative 2A would result in the construction of a fire station within the Plan Area, the final location of which would

be determined by Sacramento Metro Fire District. The proposed fire protection facility would be adequate without any reductions in response time or level of service. Funding mechanisms, policies, and regulations would assist SSD in adequately serving new growth and demand under Alternative 2A without the construction of new facilities. SSD has indicated that the existing substation could accommodate new staffing and equipment that may be needed to serve the growth in the area.

Alternative 2A would result in similar levels of demand for school services and proposes the same general school sites as the Project. As indicated in the evaluation of the Project, adequate school facilities would be accommodated within the Plan Area.

Alternative 2A would dedicate 0.5 acre more parkland than the Project while constructing fewer residences, which would result in a surplus of parkland above County requirements. This alternative would also result in similar levels of demand for library services as the Project and would also include the same funding mechanism to provide for ongoing services. Impacts would be similar to the Project.

Alternative 3

Alternative 3 would generate fewer residents than the Project. The overall land use types would be roughly the same, however, and demand for public services would be generally consistent with the demand generated by the Project. Alternative 3 would also likely be referred to as Jackson Township, if constructed, and there are no differences in factors affecting emergency response between the Project and the Alternative 3.

Alternative 3 would also include the same fire protection facilities, which would be adequate to serve the Plan Area without any reductions in response time or level of service. As described for the Project, Alternative 3 would result in the construction of a fire station within the Plan Area, the final location of which would be determined by Sacramento Metro Fire District. Funding mechanisms, policies, and regulations would assist SSD in adequately serving new growth and demand under Alternative 3 without the construction of new facilities. SSD has indicated that the existing substation could accommodate new staffing and equipment that may be needed to serve the growth in the area.

Because Alternative 3 would result in fewer residences (roughly 500 fewer low- and medium-density single-family residences and the same amount of high-density and mixed-use multi-family housing as the Project), demand on schools, parks, and libraries would be reduced. As such, this alternative would include one less elementary school. Adequate school facilities would be accommodated within the Plan Area and each of this alternative would be subject to State-mandated funding mechanism to provide for ongoing services.

Alternative 3 would reduce parkland by over 19 acres when compared to the Project. The resulting land use plan does not meet County requirements for parkland (see Table Alt-20). With implementation of Mitigation Measure PS-1, this impact would be reduced. Each alternative would also include the same funding mechanism to provide for ongoing library services. Impacts would be similar to the Project.

Table Alt-20: Parkland Dedication Requirements for Alternatives 1A, 1B, 1C, 2A, 3, and 4

Land Use/ Housing Type	Factor	Dwelling Units	Acres Required	Dwelling Units	Acres Required	Dwelling Units	Acres Required	Dwelling Units	Acres Required	Dwelling Units	Acres Required	Dwelling Units	Acres Required
		Alternative 1A		**Alternative 1B**		**Alternative 1C**		**Alternative 2A**		**Alternative 3**		**Alternative 4**	
Single family: LD/MD	0.0142	3,616	51.3	3,951	56.1	3,661	52.0	3,317	47.1	3,403	48.3	2,949	41.9
Multi family: HD/MU	0.0119	2,089	24.9	2,187	26.0	2,031	24.2	1,760	21.0	2,237	26.6	1,562	18.6
Total		**5,705**	**76.2**	**6,138**	**82.1**	**5,692**	**76.2**	**5,077**	**68.1**	**5,640**	**75.0**	**4,511**	**60.5**
Park Acreage Provided (including 3.0 acres trail)			81.3		81.3		81.3		81.8		67.5		62.2
Difference			+ 5.1 acres		- 0.8 acre		+ 5.1 acres		+ 13.8 acres		- 7.4 acres		+ 1.7 acres

Alternative 4

Alternative 4 would generate fewer residents than the Project. The overall land use types would be roughly the same, however, and demand for public services would be generally consistent with the demand generated by the Project. Alternative 4 would also likely be referred to as Jackson Township, if constructed, and there are no differences in factors affecting emergency response between the Project and Alternative 4.

Alternative 4 would also include the same fire protection facilities, which would be adequate to serve the Plan Area without any reductions in response time or level of service. As described for the Project, Alternative 4 would result in the construction of a fire station within the Plan Area, the final location of which would be determined by Sacramento Metro Fire District. Funding mechanisms, policies, and regulations would assist SSD in adequately serving new growth and demand under Alternative 1C without the construction of new facilities. SSD has indicated that the existing substation could accommodate new staffing and equipment that may be needed to serve the growth in the area.

Because Alternative 4 would result in fewer residences, demand on schools, parks, and libraries would be reduced. As such, this alternative would include one less elementary school. Adequate school facilities would be accommodated within the Plan Area and each of this alternative would be subject to State-mandated funding mechanism to provide for ongoing services. Alternative 4 would include 1.7 acres more parkland than required. This alternative would also include the same funding mechanism to provide for ongoing library services. Impacts would be similar to the Project.

Water Supply

No Project Alternative

Under the No Project Alternative, the potential for development of the Plan Area and corresponding water demand would be considerably reduced. If the industrial area in the northeast corner of the Plan Area were to develop, offsite water infrastructure would be required. Due to the reduced development footprint, the No Project Alternative would also result in less potential to affect groundwater recharge. Overall, the effect on water supply would be less than with implementation of the Project.

Alternatives 1A, 1B, and 1C

The overall level of development under Alternatives 1A, 1B, and 1C (and corresponding water demand) would be similar to, or less than, the Project. Offsite and onsite infrastructure improvements are anticipated to be substantially the same as discussed for the Project. Implementation of planned offsite expansion projects would be conducted by the Sacramento County Water Agency (SCWA) and would be subject to separate environmental review and approval. Development of onsite water supply infrastructure would not result in utility-specific adverse physical impacts.

As with the Project, part of the water supplied to Alternatives 1A, 1B, and 1C would be obtained from groundwater. As discussed for the Project, SWCA manages the groundwater basin to maintain a sustainable yield as a signatory to the Water Forum

Agreement (WFA) and member of the Sacramento Central Groundwater Authority. Like the Project, Alternatives 1A, 1B, and 1C include 368 acres (26 percent of the Plan Area) in primarily undeveloped space and would include drainage basins that would allow for onsite recharge and attenuation of stormwater. Therefore, impacts related to the groundwater recharge potential would be similar to the Project.

Alternative 2A

Alternative 2A includes 27 acres less residential development with a density 0.4 DU per acre less than the Project, and 40 additional acres of commercial and office uses. The overall level of development under Alternative 2A (and corresponding water demand) would be similar to the Project. Alternative 2A would require a similar amount of water from SCWA as the Project, and impacts related to the demand for groundwater would be similar.

Offsite and onsite infrastructure improvements are anticipated to be substantially the same as discussed for the Project in Chapter 18, “Water Supply.” Implementation of planned offsite expansion projects would be conducted by SCWA and would be subject to separate environmental review and approval. Development of onsite water supply infrastructure would not result in utility-specific adverse physical impacts.

Alternative 2A would include nearly 408 acres in park and open space zones (29 percent of the Plan Area). There would be similar effect on groundwater recharge in the Plan Area because the potion of the Plan Area available for recharge would be similar and the surface water would be collected in basins, as described for the Project, which would allow additional infiltration. Impacts related to the groundwater recharge potential would be similar to, but slightly less than, the Project.

Alternative 3

The overall level of development under Alternative 3 (and corresponding water demand) would be similar to, or less than, the Project. As with the Project, part of the water supplied to the Alternative 3 would be obtained from groundwater. Offsite and onsite infrastructure improvements are anticipated to be substantially the same as discussed for the Project in Chapter 18, “Water Supply.” Implementation of planned offsite expansion projects would be conducted by SCWA and would be subject to separate environmental review and approval. Development of onsite water supply infrastructure would not result in utility-specific adverse physical impacts.

As discussed for the Project, SWCA manages the groundwater basin to maintain a sustainable yield as a signatory to the WFA and member of the Sacramento Central Groundwater Authority. Alternative 3 includes the most open space and park acreage (roughly 413 acres, 30 percent of the Plan Area) and would have less potential than the Project to inhibit groundwater recharge. The alternative would also include drainage basins that would allow for onsite recharge and attenuation of stormwater. Therefore, impacts related to the groundwater recharge potential would be similar to, slightly less than, the Project.

Alternative 4

The overall level of development under Alternative 4 (and corresponding water demand) would be similar to, or less than, the Project. As with the Project, part of the water supplied to Alternative 4 would be obtained from groundwater. Offsite and onsite infrastructure improvements are anticipated to be substantially the same as discussed for the Project in Chapter 18, “Water Supply.” Implementation of planned offsite expansion projects would be conducted by SCWA and would be subject to separate environmental review and approval. Development of onsite water supply infrastructure would not result in utility-specific adverse physical impacts.

As discussed for the Project, SWCA manages the groundwater basin to maintain a sustainable yield as a signatory to the WFA and member of the Sacramento Central Groundwater Authority. Alternative 4 would result a similar amount of impervious surface as the Project. Alternative 4 includes slightly less area in park and open space zones (roughly 353 acres, 25 percent of the Plan Area), but would include drainage basins that would allow for onsite recharge and attenuation of stormwater. Overall, impacts related to the groundwater recharge potential would be similar to the Project.

Wastewater and Solid Waste

No Project Alternative

Under the No Project Alternative, the potential for development in the Plan Area would be substantially reduced. Development of the industrially zoned areas could result in additional solid waste and wastewater generation, which could require limited onsite and offsite infrastructure, including septic systems. A comprehensive onsite wastewater system similar to that evaluated for the Project would not be constructed, nor would the wastewater trunkline extension along Jackson Road. Effects would be less than those anticipated with implementation of the Project.

Alternative 1A

Alternative 1A would result in a level of development substantially similar to the Project and is anticipated to require the same level of wastewater service as the Project. As identified for the Project, it is anticipated that the Sacramento Regional Water Treatment Plant (SRWTP) would have adequate capacity to treat wastewater flows generated by future development.

Alternative 1A would require construction of the Jackson Road trunk line extension and development of an internal collection system. Implementation of the mitigation measures identified throughout this EIR and compliance with the County Code would address areas of potential effects associated with the offsite construction of the Jackson Road trunk tines.

Based on population projections and assuming a daily disposal rate of 6 pounds per person, Alternative 1A would result in a daily solid waste generation rate of 46 tons. This rate would be similar to, and slightly less than, those estimated for the Project (49 tons/day). These disposal rates would account for less than 1 percent of the permitted capacity of the landfill serving the area. As identified for the Project, it is anticipated that

Kiefer Landfill would have adequate capacity to accept waste generated by future development. Impact on wastewater and solid waste service capacity would be similar to the Project.

Alternative 1B

Alternative 1B would result in a level of development substantially similar to the Project and is anticipated to require the same level of wastewater service as the Project. As identified for the Project, it is anticipated that the SRWTP would have adequate capacity to treat wastewater flows generated by future development. Alternative 1B would require construction of the Jackson Road trunk line extension and development of an internal collection system. Implementation of the mitigation measures identified throughout this EIR and compliance with the County Code would address areas of potential effects associated with the offsite construction of the Jackson Road trunk tines.

Based on population projections and assuming a daily disposal rate of 6 pounds per person, Alternative 1B would result in a daily solid waste generation rate of 50 tons. This rate would be similar to, and slightly more than, those estimated for the Project (49 tons/day). These disposal rates would account for less than 1 percent of the permitted capacity of the landfill serving the area. As identified above for the Project, it is anticipated that Kiefer Landfill would have adequate capacity to accept waste generated by future development. Impact on wastewater and solid waste service capacity would be similar to the Project.

Alternative 1C

Alternative 1C would result in a level of development substantially similar to the Project and is anticipated to require the same level of wastewater service as the Project. As identified for the Project, it is anticipated that the SRWTP would have adequate capacity to treat wastewater flows generated by future development. Alternative 1C would require construction of the Jackson Road trunk line extension and development of an internal collection system. Implementation of the mitigation measures identified throughout this EIR and compliance with the County Code would address areas of potential effects associated with the offsite construction of the Jackson Road trunk tines.

Based on population projections and assuming a daily disposal rate of 6 pounds per person, Alternative 1C would result in a daily solid waste generation rate of 46 tons. This rate would be similar to, and slightly less than, those estimated for the Project (49 tons/day). These disposal rates would account for less than 1 percent of the permitted capacity of the landfill serving the area. As identified above for the Project, it is anticipated that Kiefer Landfill would have adequate capacity to accept waste generated by future development. Impact on wastewater and solid waste service capacity would be similar to the Project.

Alternative 2A

Alternative 2A would result in slightly less development and would likely require slightly less wastewater treatment capacity than the Project. The SRWTP would have adequate capacity to treat wastewater flows generated by future development. Alternative 2A would require construction of the Jackson Road trunk line extension and development

of an internal collection system. Implementation of the mitigation measures identified throughout this EIR and compliance with the County Code would address areas of potential effects associated with the offsite construction of the Jackson Road trunk tines.

Alternative 2A would result in lower disposal rates than the Project. Assuming a daily disposal rate of 6 pounds per person, Alternative 2A would result in a daily solid waste generation rate of 42 tons, compared to 49 tons per day for the Project. These disposal rates would account for less than 1 percent of the permitted capacity of the landfill serving the area. As identified above for the Project, it is anticipated that Kiefer Landfill would have adequate capacity to accept waste generated by future development. Impact on wastewater and solid waste service capacity would be similar to the Project.

Alternative 3

Alternative 3 would result in slightly less development and may, consequently, require slightly less wastewater treatment capacity than the Project. It is anticipated that the SRWTP would have adequate capacity to treat wastewater flows generated by future development.

Alternative 3 would require construction of the Jackson Road trunk line extension and development of an internal collection system. Implementation of the mitigation measures identified throughout this EIR and compliance with the County Code would address areas of potential effects associated with the offsite construction of the Jackson Road trunk tines.

Based on population projections, Alternative 3 would result in solid waste generation rates that are similar to, and slightly less than, those evaluated for the Project. Assuming a daily disposal rate of 6 pounds per person, Alternative 2A would result in a daily solid waste generation rate of 45 tons, compared to 49 tons per day for the Project. These disposal rates would account for less than 1 percent of the permitted capacity of the landfill serving the area. As identified above for the Project, it is anticipated that Kiefer Landfill would have adequate capacity to accept waste generated by future development. Impact on wastewater and solid waste service capacity would be similar to the Project.

Alternative 4

Alternative 4 would result in slightly less development and may, consequently, require slightly less wastewater treatment capacity than the Project. It is anticipated that the SRWTP would have adequate capacity to treat wastewater flows generated by future development. Alternative 4 would require construction of the Jackson Road trunk line extension and development of an internal collection system. Implementation of the mitigation measures identified throughout this EIR and compliance with the County Code would address areas of potential effects associated with the offsite construction of the Jackson Road trunk tines.

Based on population projections, Alternative 4 would result in lower disposal rates than the Project. Assuming a daily disposal rate of 6 pounds per person, Alternative 4 would result in a daily solid waste generation rate of 37 tons, compared to 49 tons per day for the Project. However, actual rates of disposal could vary widely depending on the type

of industrial use developed. As identified above for the Project, it is anticipated that Kiefer Landfill would have adequate capacity to accept waste generated by future development. Impact on wastewater and solid waste service capacity would be similar to the Project.

Traffic and Transportation

No Project Alternative

The No Project Alternative would have limited potential to effect the operation of area roadways and would not change conditions relative to bicycle, pedestrian, or transit facilities. The extension of Kiefer Road through the Plan Area would be required to facilitate access to the industrial area in the northwest corner; without this improvement, additional development of the Plan Area would be limited. It is expected that the No Project Alternative would have less impact on traffic and transportation than the Project.

Alternatives 1A, 1B, 1C, 2A, 3, and 4

The impacts to roadway segment and intersection operations are likely to be similar to those of the Project due to the size and scale of the overall development under these alternatives. Therefore, impacts associated with roadway segment operations are anticipated to generate a volume of trips that would result in area roadways that would not meet applicable LOS and V/C thresholds. Although implementation of Mitigation Measures TR-1 through TR-4 would result in fair share payment toward improvements that would reduce impacts to ten 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.

Impacts to freeway facility operations are also likely to be similar due to the size and scale of the overall development under these alternatives. Implementation of Mitigation Measure TR-5 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 under all the alternatives. However, the amount by which these improvements would improve operating conditions at the facilities detailed above are unknown at this time. 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.

Alternatives 1A, 1B, 1C, 2A, 3, and 4 would include the provision of new bicycle and pedestrian facilities throughout the Plan Area, and between the Plan Area and other nearby land uses. Each of these alternatives would also provide sidewalks, on-street (Class II) bike lanes on all collector, arterial and thoroughfare roadways, and off-street (Class I) multi-purpose trails. 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. Additionally, circulation and access to all proposed public spaces would include sidewalks that meet Americans with Disabilities Act standards.

However, because the specific design of facilities are not currently known, the planned bicycle and pedestrian improvements could potentially result in an increase in pedestrian/bicycle-vehicle conflict points and, thus, could result in a degradation of bicycle and pedestrian safety. Implementation of Mitigation Measure TR-6 would ensure that the new pedestrian and bicycle facilities constructed under any of these alternatives would minimize pedestrian/bicycle-vehicle conflict points; and thus, ensure bicycle and pedestrian safety.

Public transit is not currently provided to, or in the vicinity of, the Plan Area. The proposed transit systems would be a condition of approval for the project under any of these alternatives, and the assumed transit routes and service frequency would be required at full development of Alternatives 1A, 1B, 1C, 2A, 3, and 4.

Alternatives 1A, 1B, 1C, 2A, 3, and 4 would construct travel lanes on roadway segments that are internal to, or on the boundary of the Plan Area, and the entire roadway segment would be reconstructed to County standards. Similar to the Project, 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 alternatives. Although implementation of Mitigation Measures TR-1, TR-2, and TR-8 would result in fair share payment toward improvements that would reduce impacts to roadway functionality 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.

Alternatives 1A, 1B, 1C, 2A, 3, and 4 would be designed to meet all the design and safety standards established by the County, 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. The transportation effects of this alternative would be similar to the Project.

Comparative Evaluation of Environmental Effects

Table Alt-21 summarizes which Project Objectives are met by the identified alternatives. As demonstrated in the table, alternatives 1A, 1B, 1C, 2, 2A, and 4 would meet the Project Objectives. Alternative 3 would not meet the objective of economic viability because the proposed industrial use north of Kiefer would not be fiscally sound due to lack of connectivity. The No Project alternative would not meet any of the objectives of the Project.

Table Alt-21: Comparison of Alternatives and Project Objectives Met

Project Objectives	Objective Met?				
	No Project Alt.	Alts. 1A, 1B, 1C	Alts. 2, 2A	Alt. 3	Alt. 4
Develop an economically viable mixed-use project in close proximity to the urban core.	No	Yes	Yes	No	Yes
Develop a marketable project which minimizes greenhouse gas emissions.	No	Yes	Yes	Yes	Yes
Develop an economically-stable community where property values are retained over time.	No	Yes	Yes	Yes	Yes
Develop a project containing a variety of housing types so as to create a demographically mixed community.	No	Yes	Yes	Yes	Yes
Develop a project which allows for easy access to green space, schools, and a town center containing various retail, dining, and other commercial services.	No	Yes	Yes	Yes	Yes
Develop a project which provides employment opportunities for workers of all income levels.	No	Yes	Yes	Yes	Yes
Develop a project which promotes a jobs-housing balance in the Jackson Highway/Mather area.	No	Yes	Yes	Yes	Yes
Develop a project which allows residents to engage in short, non-vehicle commutes.	No	Yes	Yes	Yes	Yes
Develop a project which utilizes proven design practices which result in the creation of strong communities that remain economically stable over time.	No	Yes	Yes	Yes	Yes
Develop a project which contains a circulation system that promotes walking, biking, and the use of public transit.	No	Yes	Yes	Yes	Yes
Develop a project which contains a comprehensively planned infrastructure system.	No	Yes	Yes	Yes	Yes
Develop a project which ensures funding for the on-going maintenance needs of parks, open space facilities, public services and other infrastructure.	No	Yes	Yes	Yes	Yes
Develop a project which preserves, to the extent feasible, the area's most important and valuable biological resources with a wetland preserve.	No	Yes	Yes	Yes	Yes
Develop a project which contains adequate school facilities for community residents and assists in meeting the school facility needs of surrounding projects.	No	Yes	Yes	Yes	Yes
Develop a project which includes a community park and a variety of neighborhood parks sufficient to meet park district requirements.	No	Yes	Yes	Yes	Yes

Table Alt-22 summarizes the environmental analyses provided above for the alternatives. As indicated in the table, the impacts of the alternatives would be relatively similar to the Project. Alternatives 2, 2A, and 3 would slightly reduce impacts in three resource areas: biology, noise, and water supply.

Table Alt-22: Comparison of the Environmental Impacts of the Alternatives Relative to the Project

Environmental Topic	Project	No Project Alternative	1A	1B	1C	2	2A	3	4
Aesthetics	SU	Less	Similar	Similar	Similar	Similar	Similar	Similar	Similar
Agricultural Resources	SU	Less	Similar	Similar	Similar	Similar	Similar	Similar	Similar
Air Quality	SU	Less	Similar	Similar	Similar	Similar	Similar	Similar	Similar
Airport Compatibility	LTSM	Similar, slightly less	Similar	Similar	Similar	Similar	Similar	Similar	Similar
Biological Resources	SU	Similar, slightly less	Similar	Similar	Similar	Similar, slightly less	Similar, slightly less	Similar, slightly less	Similar
Climate Change	LTSM	Less	Similar	Similar	Similar	Similar	Similar	Similar	Similar
Cultural Resources	LTSM	Less	Similar	Similar	Similar	Similar	Similar	Similar	Similar
Energy	LTS	Less	Similar	Similar	Similar	Similar	Similar	Similar	Similar
Geology, Soils, and Mineral Resources	LTSM	Less	Similar	Similar	Similar	Similar	Similar	Similar	Similar
Hazardous Materials	LTSM	Similar	Similar	Similar	Similar	Similar	Similar	Similar	Similar
Hydrology and Water Quality	SU	Less	Similar	Similar	Similar	Similar	Similar	Similar	Similar
Land Use	LTS	Less	Similar	Similar	Similar	Similar	Similar	Similar	Similar
Noise	SU	Less	Similar	Similar	Similar	Similar, slightly less	Similar, slightly less	Similar, slightly less	Similar, slightly less
Public Services	LTSM	Less	Similar	Similar	Similar	Similar	Similar	Similar	Similar
Water Supply	LTS	Less	Similar	Similar	Similar	Similar, slightly less	Similar, slightly less	Similar, slightly less	Similar
Wastewater and Solid Waste	LTS	Less	Similar	Similar	Similar	Similar	Similar	Similar	Similar
Traffic and Transportation	SU	Less	Similar	Similar	Similar	Similar	Similar	Similar	Similar

LTS = less than significant; LTSM = less than significant with mitigation; SU = significant and unavoidable

Source: Data compiled by Ascent Environmental

ENVIRONMENTALLY SUPERIOR ALTERNATIVE

Table Alt-23 provides a summary comparison of the impacts of the Project and alternatives. As indicated therein, the No Project Alternative would reduce impacts to all resource areas. As a result, this alternative would be environmentally superior. However, as indicated in Table Alt-22, the No Project Alternative would not meet any of the Project Objectives. CEQA Guidelines Section 15126.6(e)(2) requires that if an EIR determines that the No Project Alternative is environmentally superior to the Project, the EIR must identify an environmentally superior alternative among the other alternatives considered.

As identified above, Alternatives 2, 2A, and 3 would slightly reduce impacts to biology, noise, and water supply when compared to the Project and would be consistent with Project Objectives. Although Alternative 3 would result in slightly reduced effects to biological resources due to the larger area set aside for preservation, the parcels north of Kiefer Boulevard remaining industrial would break up continuity of the Mather Preserve and would be inconsistent with the SSHCP. This alternative would also introduce a higher likelihood that industrial uses could be developed adjacent to the existing preserve and near residences (due to access improvements).

Among the alternatives evaluated in this EIR, Alternatives 2 and 2A are environmentally superior because they are consistent with the hardline preserve established in the SSHCP and would reduce impacts to biological resources due to the additional area set aside as wetland preserve. The expansion of the wetland preserve would also result in reduced development in the Plan Area overall, which would reduce effects related to ground disturbance (i.e., effects of wind erosion on air quality during construction) and reduce the residents and employees of the Plan Area, which would reduce demand for public services and utilities and decrease VMT. This would result in secondary benefits to air quality, energy use, and noise when compared to the Project. Alternatives 2 and 2A are preferred by the Office of Planning and Environmental Review due to their consistency with the SSHCP.

4 AESTHETICS

INTRODUCTION

This chapter addresses aesthetics and visual quality issues resulting from development of the Project or Alternative 2. Existing aesthetic and visual resources of the Plan Area are described. No comments regarding aesthetics, lighting, or visual character were received in response to the Notice of Preparation.

ENVIRONMENTAL SETTING

Aesthetic resources are generally defined as both the natural and built features of the landscape that contribute to the public's experience and appreciation of the environment. Therefore, the environmental setting consists of the quality and character of the Plan Area and its surroundings, as well as sensitivity of viewers.

VISUAL CHARACTER OF THE REGION

Sacramento County lies near the center of California's Central Valley, at the southern end of the Sacramento Valley. Open space views within the undeveloped areas of the valley region are generally characterized by broad sweeping panoramas of flat agricultural lands and open space dotted with trees, with concentrations of vegetation surrounding water ways. The valley region is divided by numerous rivers and creeks. To the east, the Sierra Nevada mountains and its foothills are visible on clear days, as is the Coastal Range on the western horizon.

Developed areas in the region are generally characterized by low- to medium-density urban residential and commercial development. The City of Sacramento contains a dense, urban core area. However, other cities within the region, such as Rancho Cordova, the nearest city to the Plan Area, are generally less dense and dominated by low- and medium-density suburban residential development with some commercial centers.

Aggregate mining and industrial uses dominate areas along the south side of State Route (SR) 16 (also known as Jackson Road or Jackson Highway) and are clearly visible from area roads. Some aggregate mining, Mather Field, and associated uses and open space areas lie on the north side of SR 16. Site topography is generally level. Due to the relatively level topography and dominance of agricultural uses in this area, views are mainly characterized by broad horizontal panoramas of rangeland and grassland occasionally dotted with trees, barns, and farmsteads. Grazing cattle, horses, and sheep contribute to the rural nature of the area along Excelsior Road and east to Sunrise Boulevard. Natural scenic resources and viewpoints include portions of Morrison Creek, Elder Creek, and a small segment of Laguna Creek; and the vernal pools and swales that lie in the adjacent grassland areas (Sacramento County 2010).

VISUAL CHARACTER OF THE PLAN AREA

The visual character of the Plan Area is typical of unincorporated Sacramento County, with areas of flat topography, rolling hills, grasslands and few scattered trees, as well as concentrations of vegetation around waterways and homes. Two large, high-voltage electrical transmission lines run parallel (southwest to northeast) across the southeastern portion of the Plan Area. Smaller overhead electrical distribution lines are located along Excelsior Road, Jackson Road, and the Kiefer Boulevard alignment. The Kiefer Boulevard alignment along the northern border of the Plan Area is currently a dirt road that is gated off and inaccessible to the public.

The eastern portion of Plan Area contains some wetland areas, as described further in Chapter 8, “Biological Resources.” Agricultural residential homes, including some hobby farms, exist in areas fronting Jackson Road and Excelsior Road. The Sacramento Raceway is located within the Plan Area along Excelsior Road. The Raceway contains a racetrack, drag strip, motocross track, bleachers for spectators, and associated outbuildings and lighting. It is lined with trees and large shrubs along Excelsior Road, which provide visual screening for motorists along Excelsior Road; however, it is visible from higher-elevation locations within the Plan Area.

Mather Airport can also be seen from higher-elevation areas of the Plan Area, particularly from properties located along Excelsior Road in the western portion of the Plan Area. Views of the airport from the eastern portion of the Plan Area are more limited due to variations in topography. A large former aggregate mining pit can also be seen to the west from the northwest portion of the Plan Area, and a large landscaping materials business is located on Excelsior Road just west of the Sacramento Raceway. Views from the Plan Area to the north are generally of the Mather Preserve area, with the Independence at Mather subdivision visible surrounded by the preserve. Views to the east are dominated by grasslands, a wetland preserve, and grazing land. The Sacramento Rendering Plant, located approximately 1 mile to the east, is visible from the eastern portion of the Plan Area, and in some areas, rooftops of residential development in the City of Rancho Cordova may be visible just beyond. To the east, the Sierra Nevada Mountains can be seen in the background on clear days from higher-elevation areas. Views to the south of the Plan Area are dominated by open grasslands, a large wetland preserve, and a few agricultural residential properties located along Jackson Road.

VIEWPOINTS

Five viewpoints were selected that are representative of the existing visual character of the site as well as the most publicly-accessible viewpoints (Plate AE-1). Plates AE-2 though AE-7 provide photographs of the views from these viewpoints. Each viewpoint is discussed below in terms of visual character and quality. Visual quality depends on the following attributes:

- **Vividness:** The extent to which the landscape is memorable, which is associated with the distinctiveness, diversity, and contrast of visual elements.
- **Intactness:** The integrity of visual order in the landscape and the extent to which the existing landscape is free from non-typical visual intrusions.

- **Unity:** The extent to which visual intrusions are sensitive to and in visual harmony with the existing landscape.

Additionally, the viewer's distance from landscape elements plays an important role in the determination of an area's visual quality. Visibility and visual dominance of landscape elements depend on their placement within a viewshed.

VIEWPOINT 1: JACKSON ROAD AT EXCELSIOR ROAD

From the intersection of Jackson and Excelsior Roads, views of the Plan Area and adjacent areas are generally intact and unified. In the foreground, open grasslands are punctuated by creeks and occasional rural-residential structures. Powerlines traverse the area and the Sierra Nevada Mountains can be seen in the distance. These views are typical of the area and are not notably unique or vivid.

VIEWPOINT 2: EXCELSIOR ROAD AT KIEFER BOULEVARD

From the northwest corner of the Plan Area, the adjacent area has a rural character. Natural landscape features in the foreground are accompanied by fencing and interrupted by evidence of former use. Urban development is visible on the horizon. Views to the north and west of the Plan Area are moderately intact and unified. As with the views discussed above, vividness is low.

VIEWPOINT 3: EAGLES NEST ROAD

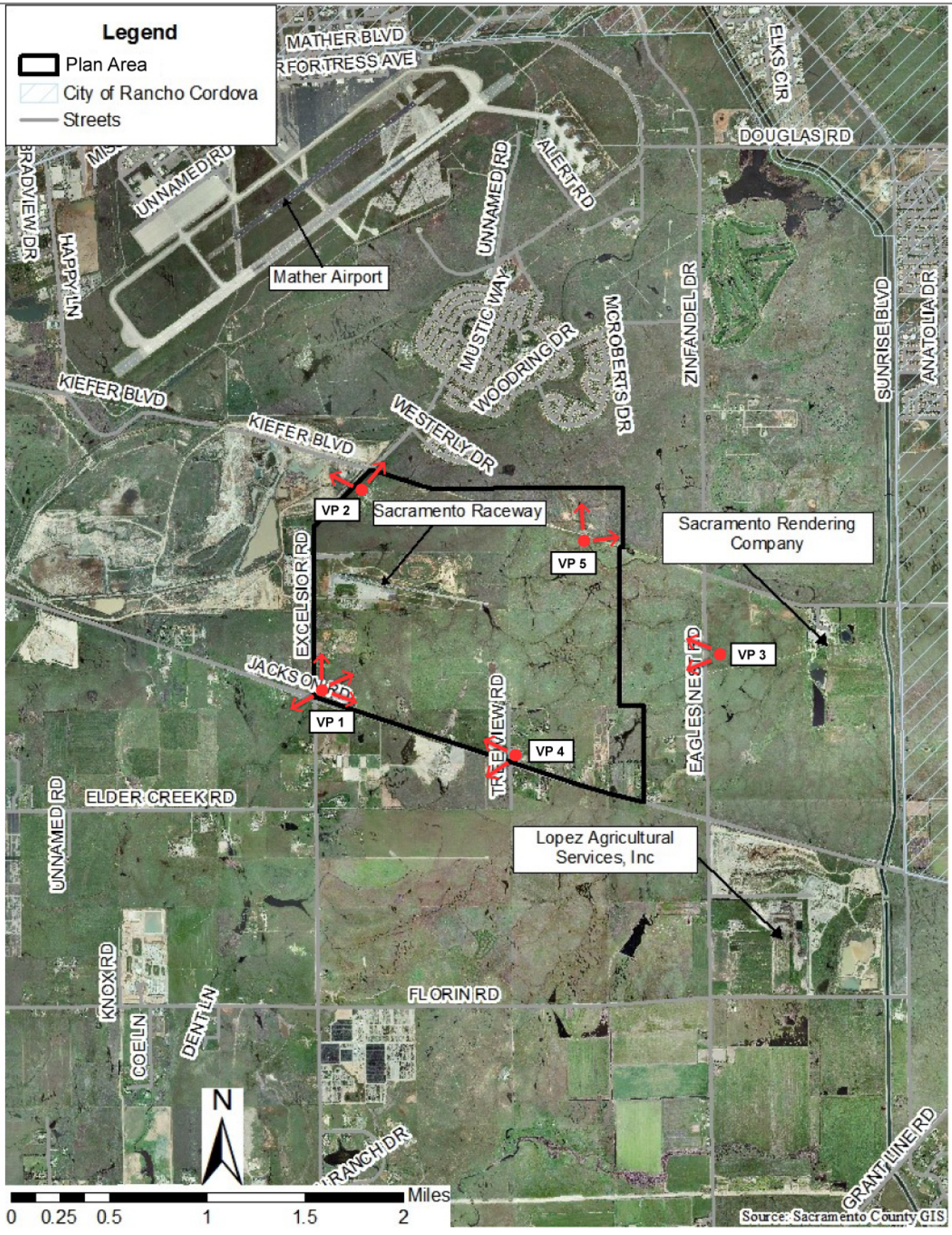
From Eagles Nest Road, the Plan Area is in the middle ground of views. The foreground is land within the NewBridge Specific Plan area. These views are generally intact and unified. They also provide greater vividness due to the expanse of the viewshed.

VIEWPOINT 4: JACKSON ROAD AT TREE VIEW ROAD

From the southern boundary of the Plan Area, the interior area appears to be vacant grassland. The view is intact and unified, and moderately vivid. The area south of the Plan Area is similar in character and quality; although somewhat less unified due to the large residence in the foreground.

VIEWPOINT 5: KIEFER BOULEVARD ALIGNMENT

At the northeast corner of the Plan Area, views are dominated by grasslands with occasional oak trees. The Independence at Mather community to the north is largely shielded from view by mature trees, and the Sierra Nevada mountains are visible in the east. These views are generally intact and unified. They also provide greater vividness due to the expanse of the viewshed.



Source: Prepared by Sacramento County GIS in 2018

X15010101_09_010

Plate AE-1: Plan Area Viewpoints on Aerial Photo

ASCENT ENVIRONMENTAL

Viewpoint 1. View Northeast from intersection of Jackson Road and Excelsior Road. Low lying portion of Elder Creek and Sierra Nevada Mountains in far distance.

Viewpoint 1. View East from intersection of Jackson Road and Excelsior Road. Traffic along Jackson Road, with slight rise toward east. 12 kV electrical transmission lines along north side of Jackson Road, with larger 230 kV electrical transmission lines visible in distance south of Jackson Road. Portion of Elder Creek visible in lower left corner of photo.

Source: Provided by Sacramento County in 2018

X15010101_09_013

Plate AE-2: Viewpoint 1 Part 1

ASCENT ENVIRONMENTAL

Viewpoint 1. View Southwest from Northeast corner of intersection of Jackson Road and Excelsior Road. Proposed West Jackson Highway Master Plan area visible west of Excelsior Road with 230 kV electrical transmission lines visible south of Jackson Road in distance.

Viewpoint 1. View North along Excelsior Road from intersection of Jackson Road and Excelsior Road. Agricultural and Agricultural-Residential properties shown along east side of road. West Jackson Highway Master Plan Area and 12 kV electrical transmission lines visible west of Excelsior Road, with distant views of Mather Airport property in the distance.

Source: Provided by Sacramento County in 2018

X15010101_09_014

Plate AE-3: Viewpoint 1 Part 2

ASCENT ENVIRONMENTAL

Viewpoint 2. View North along Excelsior Road toward Independence at Mather community. Plan Area and 12 kV electrical transmission lines are located east of Excelsior Road with the West Jackson Highway Master Plan Area located to the west of Excelsior Road.

Viewpoint 2. View west across Excelsior Road toward West Jackson Highway Master Plan Area with former aggregate mining pit visible and Mather Airport in the distance.

Source: Provided by Sacramento County in 2018

X15010101_09_015

Plate AE-4: Viewpoint 2

ASCENT ENVIRONMENTAL

Viewpoint 3. View Northwest from Eagle's Nest Road (offsite within the proposed NewBridge Specific Plan Area). View depicts the generally flat nature of the Plan Area toward the proposed wetland preserve. The Coastal Range is visible in the far distance.

Viewpoint 3. View from Eagle's Nest Road (offsite within the proposed NewBridge Specific Plan area) southwest toward the 230 kV electrical transmission lines that bisect the Plan Area. Wetlands within the proposed NewBridge wetland preserve visible in the foreground.

Source: Provided by Sacramento County in 2018

X15010101_09_016

Plate AE-5: Viewpoint 3

ASCENT ENVIRONMENTAL

Viewpoint 4. Looking Northwest toward proposed Town Center area with 230 kV electrical transmission lines visible. Light towers at Sacramento Raceway visible in distance.

Viewpoint 4. Looking toward Southwest across Jackson Road with neighboring home in view.

Source: Provided by Sacramento County in 2018

X15010101_09_017

Plate AE-6: Viewpoint 4

ASCENT ENVIRONMENTAL

Viewpoint 5. View looking Northeast toward Mather South Community Plan Area from northern Plan Area boundary adjacent to Kiefer Boulevard alignment. Distant view of Sierra Nevada Mountains.

Viewpoint 5. Looking North from northern boundary of Plan Area through Mather Preserve toward Independence at Mather community. Kiefer Boulevard alignment in foreground.

Source: Provided by Sacramento County in 2018

X15010101_09_018

Plate AE-7: Viewpoint 5

ASCENT ENVIRONMENTAL

Light and Glare Sources

The unincorporated areas of Sacramento County include existing sources of daytime glare and nighttime lighting. Sources of daytime glare include direct beam sunlight and reflections from windows, architectural coatings, glass and other shiny reflective surfaces. In the region, such glare usually only effects the immediate environment. Nighttime light and associated glare can be from stationary or mobile sources. Stationary sources of nighttime light include structure illumination, decorative landscape lighting, and lighted parking lots. Mobile sources are vehicles traveling on roadways. Rural land uses typically do not generate substantial amounts of glare, lighting, or illumination, and the ambient nighttime lighting and illumination levels are very low in the area.

Within the Plan Area, the primary source of nighttime lighting is the stadium lighting at the Sacramento Raceway, which regularly hosts evening events[1]. Other sources of nighttime lighting include small-scale lighting of homes and outbuildings within the agricultural residential properties. Lighting from Mather Airport is visible from the Plan Area in the distance, along with skyglow from nearby urban development at the Independence at Mather subdivision and the City of Rancho Cordova. Nighttime views to the south are darker due to the lack of urban development. There are no major existing sources of glare within the Plan Area or vicinity.

Viewer Groups and Sensitivity

Viewer groups in this area predominantly consist of: motorists traveling along area roadway; residents within, and adjacent to, the Plan Area; and those recreating in established open spaces.

Because of the limited number of residences in the area, it is likely that most motorists are not local residents but instead are commuters or travelers from outside the local area. Although they may be frequently exposed to the views in the area, they would be expected to have reduced visual expectations or concerns because they are commuting, and views are temporary. Motorists are, therefore, of moderately low viewer sensitivity. Some activities at the Mather Preserve, such as hiking and bird watching, are related to aesthetic qualities of the area. These recreationists are generally considered to have high sensitivity; however, public use of the area is limited.

Area residents are the most sensitive to changes in the Plan Area. There are three reasons for this sensitivity: in the existing condition the entire site is visible, the viewers are relatively close to the site, and the viewpoints are from residences. Residents usually consider the surrounding views to be part of their property and are thus more protective of existing scenic views. Residents also observe views for much longer periods of time, and during times of relaxation and enjoyment when scenic resources are typically more appreciated.

[1] according to the schedule at www.sacramentoraceway.com (accessed March 11, 2019)

REGULATORY SETTING

FEDERAL

There are no roadways that are part of the National Highway System or part of the National System of Interstate and Defense Highways in the vicinity of the Plan Area and the Project would occur on private property. Therefore, there are no federal plans, policies, or laws related to aesthetics and visual resources that are applicable to the Project.

STATE

CALIFORNIA SCENIC HIGHWAY PROGRAM

The California Department of Transportation manages the California Scenic Highway Program. The goal of the program is to preserve and protect scenic highway corridors from changes that would affect the aesthetic value of the land adjacent to the highways. The closest highway that is designated scenic is SR 160. SR 160 is an officially designated State Scenic Highway from the Contra Costa County line to the southern city limit of Sacramento (Caltrans 2019). At the northern-most point, SR 160 is over 10 miles southwest of the Plan Area, and the Plan Area is not visible from this location. No other state-designated scenic highways are near the Plan Area.

TITLE 24 OUTDOOR LIGHTING

The 2019 Building Energy 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 (LZ), which are zones LZ0 through LZ4. The ambient illumination for LZ-0 is “very low,” LZ1 is “low,” for LZ2 is “moderate,” for LZ3 is “moderately high”, and for LZ4 is “high” (see Table 10-114-A of the 2019 Building Efficiency Standards). Lighting regulations for areas of lower ambient lighting are stricter – providing lower wattage allowances – in order 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 designated as Rural. Therefore, the Plan Area is located within lighting zone LZ2 (moderate ambient illumination).

LOCAL

SACRAMENTO COUNTY 2030 GENERAL PLAN

The following 2030 General Plan policies pertaining to aesthetics and lighting are applicable to the 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 2030 General Plan Policies.
- 2030 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).

SACRAMENTO COUNTY ZONING CODE

Chapter 5 (Development Standards) of the 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 Development Standards also require that lighting shall be 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.

COMMUNITY PLANS

CORDOVA COMMUNITY PLAN

The Cordova Community Plan, which was last updated in 2003, provides guidance for both new development and the redevelopment of existing land uses within the community planning area. Objectives identified in the plan that are applicable to the Project include:

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).

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-6: Promote the installation of landscaped medians and meandering or separated sidewalks to create a more attractive and active streetscape environment, particularly along the Folsom Boulevard Corridor.

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-12/PS-15: 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/PS-16: Promote the undergrounding of all electrical utilities.

VINEYARD COMMUNITY PLAN

The Vineyard Community Plan does not contain policies related to aesthetics that would apply to the Project.

IMPACTS AND ANALYSIS

SIGNIFICANCE CRITERIA

Based on the CEQA Guidelines and Sacramento County's standard Initial Study checklist, an aesthetics impact is significant if implementation of the Project would:

1. Substantially alter existing viewsheds such as scenic highways, corridors or vistas;
2. Have a substantial adverse effect on a scenic vista;
3. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway;
4. Substantially degrade the existing visual character or quality of public views of the site and its surroundings; or
5. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

ISSUES NOT DISCUSSED FURTHER

The Plan Area is not visible from a designated state scenic highway or county scenic corridor. 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 primary visual character of the site is that of undeveloped flat grasslands, with rural residences and limited development – including the existing racetrack. Views of the Plan Area are not unique in the eastern portion of the county and do not constitute a scenic vista. Impacts to scenic vistas are not discussed further in this EIR.

METHODOLOGY

The quality of the visual experience associated with a Project is not only dependent on the character of a Plan Area, but also the individual perspective and values of the viewer. When a viewer perceives a negative change in the viewshed, this is not necessarily because the new development is unattractive. If a viewer had never seen pre-project conditions, their perception of the visual quality of a given project might be high. Thus, the impact typically occurs not because of the quality of the project in question, but rather because of the degree of change in the nature of the view. Many viewers value undisturbed open space views more highly than views of urbanized or developed property, however well-designed and visually balanced the development may be.

Sacramento County has not adopted a formal methodology to address aesthetic and visual impact issues for CEQA evaluation purposes. Based on this, the aesthetic and visual impacts of the Project have been evaluated in a qualitative manner, based on the degree of change and changes in key visual elements and features resulting from implementation of the Project. Due to the subjective nature of aesthetics, the analysis does not consider whether proposed changes are positive or negative in nature, as what one person may find visually appealing may be considered to be unattractive by another. 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.

The United States Department of Transportation, Federal Highway Administration (FHWA) developed a manual to aid in the preparation of visual assessments for highway projects. Although the proposed Project is not for a highway or other roadway, the key concepts established by FHWA apply to all visual settings and were used to help evaluate the visual character and quality of the region and the Plan Area. Many of these same key concepts are used to evaluate aesthetics in many contexts, including artistic compositions, architecture, and residential landscaping design.

IMPACT: SUBSTANTIALLY DEGRADE EXISTING VISUAL CHARACTER OR QUALITY

PROPOSED PROJECT

Implementation of the Project could result in the eventual development and urbanization of the Plan Area, with the exception of the 214 acres that would be permanently

preserved as a wetland preserve. Because the area is currently undeveloped and open, implementation of the Project would permanently change the visual character of the area. Drivers along Jackson and Excelsior Roads, area residents, and individuals recreating in adjacent open space, would be the most sensitive to these changes in views.

During construction, ground disturbance and heavy equipment would be visible in the developing portion of the Plan Area. This activity would decrease the intactness and vividness of views of the Plan Area. Unity of the viewshed may be less affected because this type of equipment use would be somewhat consistent with the existing mining and agricultural uses in the area. Following construction, views of the Plan Area would permanently change from views of largely undeveloped grazing land to a new urban community, including the planned Town Center, which would be built at a greater density than most of the urbanized areas in the surrounding area.

Development of the Plan Area would result in the construction of buildings, roadways, parks, and structures, along with landscaping, which would block distant views of the horizons in all directions from most areas within the Plan Area. The Project includes its own set of Design Guidelines intended to provide intact, unified visual character within the Plan Area as it develops. The proposed Design Guidelines (Appendix B of the Jackson Township Specific Plan) are based on the Countywide Design Guidelines but enable varied development and a distinctive character specific to Jackson Township. Where the Jackson Township 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 Jackson Township Design Guidelines and the Countywide Design Guidelines, if required.

While the Project includes adoption of 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 character would be permanent and drastic, regardless of whether or not the new development community would be visually appealing. To sensitive viewer groups, particularly area residents, this could be perceived as a substantial degradation. 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 and the inclusion of a large open space preserve in the Project design, no other feasible mitigation is available to reduce the magnitude of visual changes that would occur. Therefore, this impact would be **significant and unavoidable**.

Alternative 2

Although Alternative 2 would increase the area set aside for open space, it would also result in the near complete conversion of the Plan Area from undeveloped rural land to a fully developed urban community, which would result in a permanent, substantial alteration to existing viewsheds within the area. Development Standards and Design Guidelines create a cohesive and unified presentation across the development. Nonetheless, impacts would be **significant and unavoidable**.

Mitigation Measures

No mitigation is available.

Impact: New Sources of Light

Proposed Project

Upon full buildout, implementation of the Project would result in the urbanization of up to 1,177 acres with up to 6,143 new homes, nearly 2 million square feet of commercial, mixed use, and office space, four schools, nearly 80 acres of parks, and associated roadways and parking lots. All new uses and associated automobiles would introduce new sources of light to an area with relatively few lighting sources. Nighttime lighting is necessary for safety, for work productivity, and for recreation. Specific sources of nighttime light could include illumination of the community park and sports fields at the joint Middle School/High School, as well as street lights and trails/sidewalks.

Title 24 and County Ordinances have been instituted to avoid excess lighting. The Plan Area is within a rural area that has minimal lighting, and is designated as an LZ2 zone (low levels of ambient nighttime light). Because the Project is in an LZ2 zone, the lighting restrictions are more robust than if the Project were in a more urban environment. For instance, Table 140.7-B of the 2016 Building Efficiency standards (Title 24) indicates that building entrances in an LZ2 zone are limited to 25 watts, while in an LZ4 (urbanized) zone the allowance is 45 watts.

The Project includes its own set of Development Standards (Appendix A of the Jackson Township Specific 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 Project's 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. Flashing, moving, and animated lights would be prohibited if the proposed Development Standards are approved.

Implementation of the proposed Development Standards would reduce unnecessary lighting and prohibit excess spillover lighting onto adjacent properties. The proposed Project also includes Policy 7.6.1 that directs the County to require that all lighting applications be subject to Section 140.7 of the 2016 Building Efficiency Standards and use fixtures approved by the International Dark Sky Association. Compliance with these policies would be ensured through site plan and design review.

It is unknown at this time whether the joint Middle School/High School would include a stadium. The school would be constructed by Elk Grove Unified School District (EGUSD) and the current practice of EGUSD is to share stadiums between two school sites. If the school includes a football stadium, mast lighting would be installed (Williams, pers. comm. 2019).

Schools typically use mast lighting for fields on a limited basis during the school year. It is anticipated that lights could periodically operate until 10:00 p.m. The new lighting would consist of energy-efficient LED fixtures on tall (approximately 90-foot-tall) light poles. EGUSD uses the most energy-efficient fixtures available at the time of construction, and fixtures are installed in a manner that creates the least possible amount of light pollution (Williams, pers. comm. 2019). The height of the light poles would allow for flexibility in shielding light from adjacent sensitive receptors such that effects to nearby development would be minimized. The light fixtures themselves would be visible during daylight hours, as well as during evening hours when in operation.

Although upward and spillover lighting would be minimized due to the strict lighting standards that would be adopted as part of the Project, implementation of the Project would introduce a substantial amount of new lighting to an area that is currently rural and largely unlit, thereby adversely affecting nighttime views of the Plan Area. Due to the amount of development and lighting proposed, this would be a **significant** impact.

Further, although it is anticipated that the Sacramento Raceway property would eventually be developed and converted to urban uses (which would reduce spillover lighting from that property), this parcel is currently a non-participating property that may remain in its current state during Project buildout. The tall light standards that light the racetrack and buildings could have a negative effect on proposed land uses. There is no mitigation available to reduce this impact because the Project Applicant and the County do not have ownership control of the property.

Because the Project complies with County lighting policies and standards and would also use fixtures approved by with International Dark Sky Association, and because of the scale of proposed development, no feasible mitigation is available to further reduce this impact. This impact would be **significant and unavoidable**.

Alternative 2

Alternative 2 would result in less development at the eastern boundary of the Plan Area by increasing the open space. This could result in slightly less offsite lighting effects to the east of the Plan Area. Like the Project, this alternative would introduce a substantial amount of new lighting to an area that is currently rural and largely unlit. The alternative would comply with the proposed Design Standards that require lighting to be focused downward whenever possible to avoid light pollution and parking lighting to have automatic controls to dim lights after certain hours or when no one is present. However, similar to the Project there would be no mitigation available to address the existing lighting on the raceway parcel. Alternative 2 would have a **significant and unavoidable** impact related lighting.

Mitigation Measures

No mitigation is available.

IMPACT: NEW SOURCES OF GLARE

PROPOSED PROJECT

Like impacts associated with new sources of light, the urbanization of up to 1,177 acres of sparsely developed land would also introduce new sources of glare from materials like glass. In addition, pursuant to regulations adopted by the California Energy Commission in May 2018 that require that most new residential development be equipped with rooftop solar panels beginning in 2020, development of the Project would result in thousands of new residential units outfitted with rooftop photovoltaic (PV) solar panels, which present concerns about the potential for additional new sources of daytime glare.

According to the US Department of Energy (DOE 2014), 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 (DOE 2014). Residential solar 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 (Meister Consultants Group 2014). As opposed to other surfaces, such as mirrors, a solar panel has, at a microscopic level, an irregular surface designed to capture the incident rays of sunlight with the goal of generating additional photon collision and energy production. If not absorbed, incident radiation would be reflected. Thus, the goal of any solar panel is to trap as much of the incident rays as possible, and minimize reflection, to maximize energy creation.

Furthermore, both the proposed Development Standards and the County Zoning Code (Section 3.6.6.C) require that all PV panels are oriented on rooftops or other hardscape areas so as to avoid unreasonable glare from solar panels onto adjacent properties. This, combined with the absorbing design of solar panels, would ensure that solar PV panels on buildings and building materials (e.g., glass, paint) 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**.

ALTERNATIVE 2

Although Alternative 2 would result in less residential development and associated PV panels than the Project, implementation of Alternative 2 would not result in a substantial difference in the potential for creation of new sources of daytime glare in comparison to the Project because the overall level of development would be similar. Impacts would be **less than significant**.

MITIGATION MEASURES

No mitigation is required.

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5 AGRICULTURAL RESOURCES

INTRODUCTION

This chapter describes the existing agricultural resources within the Plan Area and analyzes possible impacts to agricultural resources that could occur as the result of the Project or Alternative 2. The discussion focuses on the impact of converting the designated Farmland in the Plan Area to non-agricultural uses, impacts related to Williamson Act contracts, and possible impacts to agricultural activities on adjacent lands. No comments submitted in response to the Notice of Preparation relate to agricultural resources.

ENVIRONMENTAL SETTING

The Plan Area is largely undeveloped. Established uses include grazing, small ranches, and agricultural-residential homes. Most of the land currently used for grazing within the Plan Area is owned by the Project Applicant. The current agricultural operations on the non-participating properties are limited and include mostly small agricultural residential lots, a strawberry farm, and an apiary.

As illustrated in Plate PD-5 in Chapter 2, “Project Description,” the Sacramento County General Plan designates the northern portion of the Plan Area as Extensive Industrial and the southern portion adjacent to Jackson Road (also referred to as Jackson Highway) as General Agriculture 20 (minimum parcel sizes of 20 acres). The Plan Area is currently zoned as Light Industrial (M-1), Agricultural 80 (AG-80), and Interim Agricultural Reserve (IR) (see Plate PD-7 in Chapter 2, “Project Description”). As described in Chapter 2, “Project Description,” and Chapter 15, “Land Use, Population, and Housing,” the AG-80 zone promotes long-term agricultural use and discourages premature and unnecessary conversion of land. Interim zones were established by the County as temporary zones that were intended to be rezoned to one of the permanent land use zones as community plans were adopted. The IR zone is reserved for future industrial uses (Sacramento County 2015, Table 2-2).

Lands to the west of the Plan Area are characterized by agricultural uses, aggregate mining activities, and commercial sales operations. Properties to the east are generally similar to the Plan Area, with grazing and agricultural-residential being the predominant uses. Lands to the north are dominated by the presence of the Mather Field Preserve, the Independence at Mather residential subdivision, and Mather Airport and appurtenant facilities. Properties to the south of the Plan Area are generally agricultural-residential and are planned to be set aside as a wetland preserve as part of the South Sacramento Habitat Conservation Plan.

PROTECTED FARMLAND

FARMLAND MAPPING AND MONITORING PROGRAM DESIGNATION

The State of California maps and classifies farmland through the California Department of Conservation’s Farmland Mapping and Monitoring Program (FMMP). The goal of the

FMMP, which updates maps every 2 years, is to document the location and extent of California's agricultural resources so that they can be considered in the planning process. Classifications are based on a combination land use and soil characteristics and climate that determine the degree of suitability of the land for crop production. The classifications under the FMMP are as follows:

- Prime Farmland—land that has the best combination of features to produce agricultural crops;
- Farmland of Statewide Importance—land other than Prime Farmland that has a good combination of physical and chemical features to produce agricultural crops, but that has more limitations than Prime Farmland, such as greater slopes or less ability to store soil moisture;
- Unique Farmland—land of lesser quality soils used to produce the state's leading agricultural cash crops;
- Farmland of Local Importance—land of importance to the local agricultural economy, as defined by each county's Board of Supervisors;
- Sacramento County's definition of Farmland of Local Importance is: Lands which do not qualify as Prime, Statewide, or Unique designation but are currently irrigated crops or pasture or nonirrigated crops; lands that would be Prime or Statewide designation and have been improved for irrigation but are now idle; and lands which currently support confined livestock, poultry operations, and aquaculture.
- Grazing Land—existing vegetation that is suitable for grazing;
- Urban and Built-Up Land—land occupied by structures in density of at least one dwelling unit per 1.5 acres;
- Land Committed to Nonagricultural Use—vacant areas; existing land that has a permanent commitment to development but has an existing land use of agricultural or grazing lands; and
- Other Land— land not included in any other mapping category, common examples of which include low-density rural developments, brush, timber, wetland, and vacant and nonagricultural land surrounded by urban development.

According to the current (2016) California Department of Conservation's FMMP, the Plan Area contains roughly 3 acres of Prime Farmland, 79 acres of Farmland of Local Importance, and 1,044 acres of Grazing Land (see Plate AG-1). The Plan Area does not contain any land designated as Farmland of Statewide Importance or Unique Farmland.

In May of 2019, the Project Applicant engaged the California Department of Conservation in a review of the farmland designations of the Plan Area. In August of 2019, the Department of Conservation provided a response to the Project Applicant's request to re-designate roughly 15 acres of the Plan Area along Excelsior Road, north of the Sacramento Raceway. This area is currently mapped as Farmland of Local Importance. There is no recent history of irrigation in the area (which was formerly a Koi farm) and this portion of the Plan Area has slopes that render it unsuitable for growing of crops.

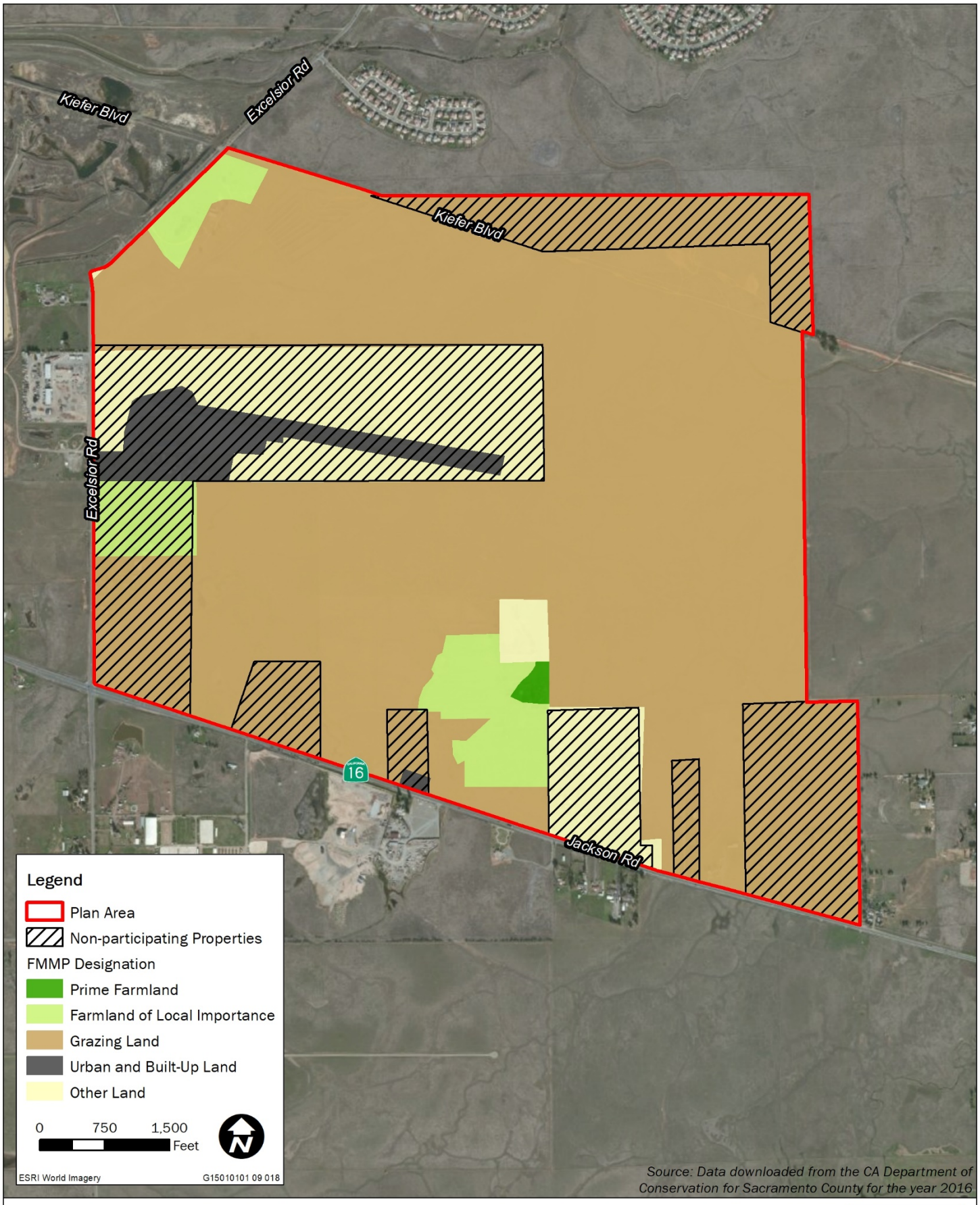

Plate AG-1: Farmland Mapping and Monitoring Program Designations

ASCENT ENVIRONMENTAL

The Department concluded that classification of the area as Prime Farmland in the initial 1988 mapping (which the area kept until release of a field-checked map in 1994) may have been based on misinterpretation of available data. Further, the area may not have initially qualified for the Prime Farmland designation because it did not meet the 10-acre minimum size criteria. Therefore, the justification for the current Local Farmland designation based on it being “lands that would be Prime or Statewide designation and have been improved for irrigation but are now idle” is unfounded. The Department of Conservation concurred with the Project Applicant’s assessment that the area should be re-designated as Grazing Land (Wilber, pers. comm., 2019). This change will be reflected in the 2018 map update, anticipated for release in the fall of 2019.

FARMLAND CONVERSION

Over the 10-year period from 2006 to 2016, the California Department of Conservation estimates that the total acreage of Important Farmland in Sacramento County decreased by approximately 763 acres annually, with notable losses to Prime Farmland and gains in Farmland of Local Importance. Table AG-1 summarizes the acreages of agricultural land in Sacramento County between 2006 and 2016 (DOC 2016).

Table AG-1: Farmland Conversion in Sacramento County, 2006-2016

Land Use Category	Acreage by Category (1)						Average Annual Acreage Change (2006 – 2016)
	2006	2008	2010	2012	2014	2016	
Prime Farmland	106,667	104,366	97,477	93,916	91,568	90,691	-1,598
Farmland of Statewide Importance	51,218	49,470	45,263	43,580	43,105	43,342	-788
Unique Farmland	15,267	15,463	15,076	15,060	15,125	15,540	27
Farmland of Local Importance	41,960	43,819	53,929	56,981	58,852	57,910	1,595
Important Farmland Subtotal	215,112	213,118	211,745	209,537	208,650	207,483	-763
Grazing Land	156,979	156,144	155,824	154,744	153,452	153,174	-381
Agricultural Land Subtotal	372,091	369,262	367,569	364,281	362,102	360,657	-1,143
Urban and Built-Up Land	175,523	177,915	178,784	180,246	181,296	182,237	671
Other Land	70,239	70,757	71,585	73,401	74,558	75,069	483
Water Area	18,230	18,147	18,147	18,148	18,120	18,116	-11
Total Area Inventoried	636,083	636,081	636,085	636,076	636,076	636,079	0

Source: DOC 2016

LAFCO PRIME AGRICULTURAL LANDS

The local agency formation commission (LAFCo) utilizes a definition of agricultural lands that differs from those utilized under CEQA. "Prime agricultural land" is defined in Section 56064 of the Cortese-Knox-Hertzberg Local Government Reorganization Act as an area of land that has not been developed for a use other than an agricultural use that meets any of the following qualifications:

(a) Land that qualifies, if irrigated, for rating as class I or class II in the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) land use capability classification, whether or not land is actually irrigated, provided that irrigation is feasible.

The Plan Area includes 407 acres of soil mapped as capability class II (soil units 158 and 191 in Plate GS-2 in Chapter 12, “Geology, Soils, and Mineral Resources”).

(b) Land that qualifies for rating 80 through 100 Storie Index Rating.

There are 1,206 acres in the Plan Area that are rated between 80 and 100 on the Storie Index (soil units 191, 192, and 193 in Plate GS-2 in Chapter 12, “Geology, Soils, and Mineral Resources”).

(c) Land that supports livestock used for the production of food and fiber and that has an annual carrying capacity equivalent to at least one animal unit per acre as defined by the USDA in the National Range and Pasture Handbook, Revision 1, December 2003.

The USDA National Range and Pasture Handbook specifies that 790 pounds of dry forage per acre per month is needed to support one animal unit (USDA 2003). Based on NRCS soil productivity data, 101 acres of the Plan Area meet this criterion.

(d) Land planted with fruit or nut-bearing trees, vines, bushes, or crops that have a nonbearing period of less than 5 years and that will return during the commercial bearing period on an annual basis from the production of unprocessed agricultural plant production not less than four hundred dollars ($400) per acre.

No portion of the Plan Area meets this criterion.

(e) Land that has returned from the production of unprocessed agricultural plant products an annual gross value of not less than $400 per acre for three of the previous 5 calendar years.

No portion of the Plan Area meets this criterion.

Table AG-2, below, identifies the areas of the Plan Area that fit the LAFCo criteria for Prime Agricultural Land based on soil type. NRCS soils are mapped in Plate GS-2 in Chapter 12, “Geology and Soils.” Most of the Plan Area (1,308 acres) is considered Prime Agricultural Land based on NRCS soil mapping. However, as indicated in the definition above, areas that have been previously developed for non-agricultural use should be removed from the total. Based on interpretation of aerial photography, 77 acres of the raceway property has been developed for a use other than agriculture. After removing the area of developed land, the total area of LAFCo Prime Agricultural Land is 1,231 acres. Note, however, that the discussion of loss of agricultural land in this chapter is based on the 2030 General Plan Policy AG-5 criteria because it is the lead agency.

Table AG-2: LAFCo-defined Prime Agricultural Land in the Plan Area

Map Unit Symbol	NRSC Map Unit Name	Acres in Plan Area	Considered LAFCo Prime Agricultural Land?
157	Hedge loam, 0 to 2 person slopes	2	No.
158	Hicksville loam, 0 to 2 percent slopes, occasionally flooded	15	Yes. NRCS Irrigated Capability Class II.
191	Red Bluff loam, 0 to 2 percent slopes	395	Yes. NRCS Irrigated Capability Class II and Grade 1 Storie Index rating.
192	Red Bluff loam, 2 to 5 percent slopes	245	Yes. Grade 1 Storie Index rating.
193	Red Bluff-Redding complex, 0 to 5 percent slopes	552	Yes. Grade 1 Storie Index rating.
198	Redding gravelly loam, 0 to 8 percent slopes	74	Yes. Meets carrying capacity potential for dry forage.
214	San Joaquin silt loam, 0 to 3 percent slopes	30	No.
239	Xerarents-Redding complex, 0 to 2 percent slopes	27	Yes. Meets carrying capacity potential for dry forage.
247	Water	10	No.
Total Considered LAFCo Prime Agricultural Land based on soil type		**1,308**	

Source: NRCS, Web Soil Survey, National Cooperative Soil Survey. April 28, 2016.

Regulatory Setting

Federal

There are no federal policies or regulations applicable to the analysis of agricultural resources.

State

Williamson Act

The Williamson Act, also known as the California Land Conservation Act of 1965, enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space uses. When the County enters into a contract with the landowners under the Williamson Act, the landowner agrees to limit the use of the land to agriculture and compatible uses for a period of at least 10 years and the County agrees to tax the land at a rate based on the agricultural production of the land, rather than its real estate market value.

The Plan Area does not contain any properties under an active Williamson Act contract. There are two former Williamson Act properties located within the Plan Area, but both had notices of non-renewal filed in the 1980s, and the contracts expired in the 1990s.

The closest active Williamson Act contracts are 0.1 mile southeast and 0.25 mile south of the Plan Area. Multiple other active Williamson Act contract properties are located southeast of the Plan Area.

Public Resources Code

The CEQA Statute, Public Resources Code Section 21060.1, defines "agricultural land" as: prime farmland, farmland of statewide importance or unique farmland, as defined by the United States Department of Agriculture land inventory and monitoring criteria, as modified for California.

Local

Sacramento LAFCo

The Project would be subject to the following standards related to agricultural resources from LAFCo's Policies, Standards, and Procedures Manual (2007). LAFCo may make exceptions to these general and specific standards if it determines that such exceptions: are necessary because of unique circumstances; are required to resolve conflicts between general and specific standards; result in improved quality or lower cost of services available; or there exists no feasible or logical alternative.

Chapter IV, Selected General Standards, Standard E. Agricultural Land Conservation. LAFCo will exercise its powers to conserve agricultural land pursuant to the following standards:

- Standard E.1. LAFCo will approve a change of organization or reorganization which will result in the conversion of prime agricultural land in open space use to other uses only if the Commission finds that the proposal will lead to the planned, orderly, and efficient development of an area. For purposes of this standard, a proposal leads to the planned, orderly, and efficient development of an area only if all of the following criteria are met:
    a. The land subject to the change of organization or reorganization is contiguous to either lands developed with an urban use or lands which have received all discretionary approvals for urban development.
    b. The proposed development of the subject lands is consistent with the Spheres of Influence Plan, including the Master Services Element of the affected agency or agencies;
    c. Development of all, or a substantial portion of, the subject land is likely to occur within five years. In the case of very large developments, annexation should be phased whenever feasible. If the Commission finds phasing infeasible for the specific reasons, it may approve annexation if all or a substantial portion of the subject land is likely to develop within a reasonable period of time.
    d. Insufficient vacant non-prime lands exists within the applicable Spheres of Influence that are planned, accessible, and developable for the same general type of use.

e. The proposal will have no significant adverse effect on the physical and economic integrity of other agricultural lands. In making this determination, LAFCo will consider the following factors:

(1) The agricultural significance of the subject and adjacent areas relative to other agricultural lands in the region.

(2) The use of the subject and adjacent areas.

(3) Whether public facilities related to the proposal would be sized or situated so as to facilitate the conversion of adjacent to nearby agricultural land, or will be extended through or adjacent to, any other agricultural lands which lie between the project site and existing facilities.

(4) Whether natural or man-made barriers serve to buffer adjacent or nearby agricultural lands from the effects of the proposed development.

(5) Applicable provisions of the General Plan open space and land use elements, applicable growth-management policies, or other statutory provisions designed to protect agriculture.

Sacramento County 2030 General Plan

The following policies of the 2030 General Plan are applicable to the Project:

AG-4. Prospective buyers of property adjacent to agricultural land shall be notified through the title report that they could be subject to inconvenience or discomfort resulting from accepted farming activities as per provisions of the County‘s right-to-farm ordinance.

AG-5. Projects resulting in the conversion of more than fifty (50) acres of farmland shall be mitigated within Sacramento County, except as specified in the paragraph below, based on a 1:1 ratio, for the loss of the following farmland categories through the specific planning process or individual project entitlement requests to provide in-kind or similar resource value protection (such as easements for agricultural purposes):

- prime, statewide importance, unique, local importance, and grazing farmlands located outside the USB;
- prime, statewide importance, unique, and local importance farmlands located inside the USB.

The Board of Supervisors retains the authority to override impacts to Unique, Local, and Grazing farmlands, but not with respect to Prime and Statewide farmlands. However, if that land is also required to provide mitigation pursuant to a Sacramento County endorsed or approved habitat conservation plan (HCP), then the Board of Supervisors may consider the mitigation land provided in accordance with the HCP as meeting the requirements of this section including land outside of Sacramento County.

Note: This policy is not tied to any maps contained in the Agricultural Element. Instead, the most current Important Farmland map from the Department of Conservation should be used to calculate mitigation.

Community Plans

Cordova Community Plan

The Cordova Community Plan does not contain objectives related to agricultural resources that would apply to the Project.

Vineyard Community Plan

Although the Vineyard Community Plan does contain agricultural policies and programs that generally support agriculturally compatible development proposals, none apply specifically to the Project.

Sacramento County Code 14.05 (Agricultural Activities)

Sacramento County has adopted a right-to-farm ordinance to provide legal assurance that established agricultural operations are allowed to continue, and to inform residents of areas zoned or designated for agriculture that they may be subject to inconvenience or discomfort resulting from accepted agricultural operations. This ordinance does not, however, prevent residents of farming areas from complaining about such inconvenience or discomfort.

Impacts and Analysis

Significance Criteria

Based on the CEQA Guidelines Appendix G, an impact to agricultural resources is significant if the Project results in any of the following:

1. Substantial conflict with existing zoning for agricultural use, or a Williamson Act contract.
2. Conversion of a substantial amount of Prime Farmland, Unique Farmland, or Farmland of Statewide Importance to non-agricultural use.
3. Substantial conflict with existing, adjacent agricultural uses.
4. Result in the loss of forest land or conversion of forest land to non-forest uses.

In addition to the CEQA Guidelines criteria for significance of farmland loss, 2030 General Plan Policy AG-5 defines substantial farmland loss as 50 acres. The CEQA Guidelines indicate that Prime, Statewide Importance, and Unique Farmland loss may be a significant impact, but the 2030 General Plan further includes Farmland of Local Importance and Grazing Land – though in the case of Grazing Land, the threshold specifically applies only to such lands which occur outside of the USB.

Issues not Discussed Further

There are no forestry resources on or adjacent to the Plan Area. Because there are no forest land, timberland, or timberland production areas, the Project would not conflict with forest land zoning or result in the conversion or loss of forest land. Therefore, no impacts would occur related to forest land resources, and this issue is not evaluated further.

The Plan Area includes areas zoned AG-80 and IR. As part of the Project, the zoning of 221 acres currently designated AG-80 and 23.5 acres currently designated IR would be changed to Jackson Township Special Planning Area. Because the entitlements requested as components of the Project would change the zoning to make it consistent with the proposal, the conflict with zoning for agricultural use within the Plan Area is not discussed further.

There are no active Williamson Act contracts within the Plan Area, or adjacent to the Plan Area. There are parcels in active Williamson Act contracts in the vicinity, primarily south of Jackson Road, but none directly adjacent to the Plan Area. Because no Williamson Act parcels are located within or adjacent to the Plan Area, implementation of the Proposed Project would not result in conflicts with Williamson Act contracts, and there would be no impact on Williamson Act properties.

Methodology

The following evaluation of potential impacts associated with agricultural resources is based on a review of planning documents, including policies of the 2030 General Plan, field reviews, and maps. The impact assumes that entire Plan Area would be developed consistent with the Land Use Plan, although there are a few areas within the Plan Area that may continue existing land uses for the time being, including some smaller scale agricultural activities on the non-participating properties.

Although this chapter is intended to provide the information necessary for Sacramento LAFCo to evaluate the effects of maintaining the physical and economic integrity of agricultural lands consistent with Standard E.1 of the Policies, Standards, and Procedures Manual, the impact evaluation is based on the thresholds established in the State CEQA Guidelines and the mitigation requirements in 2030 General Plan Policy AG-5. Conversion of more than 50 acres of Farmland classified as Prime, Statewide Importance, Unique, or Local Importance within the USB is considered a significant impact. Furthermore, Policy AG-5 specifies mitigation calculations are based on the most current Important Farmland map prepared by the Department of Conservation. Therefore, the following analysis is based on the 2016 FMMP, which is the most current map publicly available; although it is acknowledged that a portion of the Plan Area has been identified or re-designation in the 2018 FMMP.

IMPACT: CONVERT PROTECTED ONSITE FARMLAND TO NON-AGRICULTURAL USES

PROPOSED PROJECT

Implementation of the Project would convert approximately 3 acres of Prime Farmland located near the center of the Plan Area, and 79 acres of Farmland of Local Importance (Plate AG-1) to non-agricultural use. This represents roughly 11 percent of the average annual conversion of Important Farmland in Sacramento County (see Table AG-1). The remaining portions of the Plan Area are designated as Grazing, Urban and Built Up, or Other lands. Because implementation of the Project would convert a total of 82 acres of Prime Farmland and Farmland of Local Importance, this conversion would be a **significant** impact.

As noted above, the Department of Conservation is in the process of reclassifying approximately 15 acres of land located at the northwest corner of the Plan Area that is inaccurately designated as Farmland of Local Importance. This land will be reclassified as Grazing land in the 2018 FMMP map, which is currently scheduled for completion in fall of 2019. Once the map has been revised, the impact on Farmland of Local Importance would be reduced by approximately 15 acres.

Note that although the Project includes the retention of roughly 109 acres of Grazing land at the southeast quadrant of the Plan Area that would remain zoned as agricultural land, this area is being considered in this analysis as a potential future growth area that could be converted to urban uses at a later, unknown date. Because this entire area is currently classified as Grazing, no mitigation would be necessary if it was converted from agricultural to urban uses unless the FMMP classification of the area changes prior to conversion of the land.

Implementation of Mitigation Measure AG-1 would require preservation of Farmland at a 1:1 ratio, consistent with Policy AG-5 of the 2030 General Plan. However, even with this mitigation, it must be recognized that prime soils are a finite resource. When an area is permanently taken out of agricultural production, there has been a net-loss of agricultural lands. Other agricultural lands may be preserved through compliance with mitigation, but new agricultural soils will not be created. There would be a substantial net-loss of agricultural production within Sacramento County as a result of the Project, and impacts would be **significant and unavoidable**.

ALTERNATIVE 2

Alternative 2 would result in **significant** impacts to protected farmland because more than 50 acres of Prime Farmland and Farmland of Local Importance would be converted. Implementation of Mitigation Measure AG-1 would require preservation of Farmland at a 1:1 ratio, consistent with Policy AG-5 of the 2030 General Plan. However, because prime soils are a finite resource and new agricultural soils would not be created there would be a substantial net-loss of agricultural production within Sacramento County. The impact would be **significant and unavoidable**.

Mitigation Measures

AG-1: Prior to Sacramento County's approval of improvement plans, building permits, or recordation of the final map, whichever occurs first, the Project Applicant shall offset the loss of Important Farmland within the Plan Area through 1:1 preservation of farmland within a permanent conservation easement. The impact acreage requiring offset shall be based on the most current FMMP at the time of the County's approval. Preservation land must be in-kind or of similar resource value.

Impact: Conflict with Existing, Adjacent Agricultural Use and Zoning

Proposed Project

Agricultural operations may create risks and nuisances for urban residences, schools, and businesses. Conversely, urban land uses and the associated population create operational difficulties for agriculture. Health risks and nuisances potentially created by agricultural operations in the Plan Area include the following:

- exposure to pesticide and herbicide applications,
- exposure to smoke (from burning) and dust (from soil preparation),
- exposure to noise (from machinery and trucks),
- hazards to children (irrigation channels and ditches), and
- exposure to mosquitoes breeding in flooded fields.

These potential nuisances and other aspects of urban land uses, including rising land values, can affect agriculture negatively. Negative effects of urban uses on agriculture could include the following:

- interference with agricultural operations (e.g., limitations on pesticide/herbicide applications, burning, operational hours);
- trespassing, vandalism, and theft because of the proximity of urban uses to agricultural areas; and
- land value impacts because of the proximity to urban areas which tends to increase land values in anticipation of future urban development. This increase reduces the probability that farmers would make long-term investments to maintain the productive potential of the land.

There are no intensive agricultural uses, such as cultivating row crops, taking place on any of the lands adjacent to the Plan Area, though there are some grazing and agricultural-residential uses. The closest intensive agricultural uses appear to be row crops that are 3,000 feet southwest of the Plan Area. Livestock grazing usually involves a lesser degree of conflict, because the intensity of the activity is reduced when compared to row crops. The uses proposed within the Plan Area are compatible with the existing uses adjacent and nearby because the nearest intensive agricultural activities are far enough away to not cause conflicts.

Within the Plan Area some of the non-participating properties are zoned as AG-80 (see Plate PD-7 in Chapter 2, “Project Description”). However, most are smaller than 80 acres in size, and, therefore, cannot accommodate intensive agricultural operations that tend to be associated with major nuisances such as those listed above. The current agricultural operations on the non-participating properties are limited and include mostly small agricultural residential lots, a strawberry farm, and an apiary. Furthermore, most of the land currently used for grazing within the Plan Area is owned by the Project Applicant and would be developed as part of the Project. Given the lack of intensive farming, impacts related to conflict with existing, adjacent agricultural uses would be **less than significant**.

Although significant impacts are not anticipated, Mitigation Measure AG-2 is been included to ensure compliance with 2030 General Plan Policy AG-4 and not to reduce any potentially significant impact. This mitigation would require noticing to future property owners about potential inconveniences due to nearby agricultural activities. Purchasers of properties adjacent to Excelsior Road, Jackson Road, and a non-participating property are required to receive notice through the title report that they could be subject to inconvenience or discomfort resulting from accepted farming activities as per provisions of the County Right-To-Farm Ordinance (Sacramento County Code Chapter 14.05) and 2030 General Plan Policy AG-4. Buyers along the eastern side of the Plan Area would be buffered by the wetland preserve from any possible agricultural operations to the east.

ALTERNATIVE 2

Alternative 2 would result in the same general potential for conflict with existing, adjacent agricultural use and zoning as the Project. The current agricultural operations on adjacent and non-participating properties are limited and include mostly small agricultural residential lots. In addition, buyers of properties adjacent to Excelsior Road, Jackson Road, and a non-participating property are required to receive notice through the title report that they could be subject to inconvenience or discomfort resulting from accepted farming activities as per provisions of the County Right-To-Farm Ordinance (Sacramento County Code Chapter 14.05) and 2030 General Plan Policy AG-4, as proposed in Mitigation Measure AG-2. Impacts would be **less than significant**.

MITIGATION MEASURES

AG-2: To ensure compliance with Sacramento County General Plan Policy AG-4, all prospective buyers of properties within 500 feet to the east of Excelsior Road and north of Jackson Road shall receive a recorded notice that would appear in the Title Report that they could be subject to inconvenience or discomfort resulting from accepted farming activities as per provisions of the Sacramento County Right-To-Farm Ordinance.

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6 AIR QUALITY

INTRODUCTION

This chapter assesses the potential air quality effects caused by stationary, mobile, and area sources related to construction and operation of the Project or Alternative 2, as well as the potential for the Project to generate objectionable odors, in consideration of the updated 2019 CEQA Guidelines questions. This chapter also describes the climate in the Plan Area; existing air quality conditions in the Plan Area for criteria air pollutants and toxic air contaminants (TACs); odors; and applicable federal, State, and regional air quality standards. Mitigation is provided, where necessary and appropriate to address impacts. For further discussion of the Project's potential contributions to global greenhouse gas (GHG) emissions, refer to Chapter 9, "Climate Change."

Two letters identifying air quality as a concern were received during the NOP scoping process. The Environmental Council of Sacramento requested that the EIR address the Project's impact on the Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan and Sustainable Communities Strategy (MTP/SCS) and the State Implementation Plan (SIP). The Sacramento Metropolitan Air Quality Management District (SMAQMD) requested that the EIR analyze operational emissions and connectivity with all adjacent projects considering all modes of transit. In addition, SMAQMD requested that the Project Applicant prepare an Air Quality Mitigation Plan (AQMP). These concerns are addressed in this chapter, as appropriate. A copy of the NOP and comment letters received in response to the NOP are included in Appendix INT-1 of this Draft EIR.

ENVIRONMENTAL SETTING

LOCATION, CLIMATE, AND ATMOSPHERIC CONDITIONS

The Plan Area is in central Sacramento County, which is located within the southern end of the Sacramento Valley Air Basin (SVAB). 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 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.

May through October is ozone season 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 reactive organic gases (ROG) and nitrogen oxides (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 surrounding area 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 39.6°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 91.7°F (WRCC 2016). The predominant wind direction is from the south (WRCC 2002) and west (Kleinfelder 2015).

Criteria Air Pollutants

Concentrations of emissions from criteria air pollutants are used to indicate the quality of the ambient air. A brief description of key criteria air pollutants in the SVAB and their health effects is provided below. Criteria air pollutants include ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM_{10} and $PM_{2.5}$), and lead. However, for the purposes of this analysis, criteria air pollutants of primary concern due to their nonattainment status include ozone (and ozone precursors) and particulate matter. The California ambient air quality standards (CAAQS) and the national ambient air quality standards (NAAQS) are summarized in Table AQ-1 and Sacramento County's attainment status under the CAAQS and NAAQS are shown in Table AQ-2.

Table AQ-1: State and Federal Ambient Air Quality Standards

Pollutant	Symbol	Average Time	Standard, as parts per million		Standard, as micrograms per cubic meter		Violation Criteria	
			California	National	California	National	California	National
Ozone	O_3	1 hour	0.09	--	180	--	If exceeded	If exceeded more than 3 days in 3 years
		8 hours	0.070	0.070	137	--	If exceeded	If exceeded more than 3 days in 3 years
Carbon monoxide	CO	8 hours	9.0	9	10,000	10,000	If exceeded	If exceeded more than 1 day per year
		1 hour	20	35	23,000	40,000	If exceeded	If exceeded more than 1 day per year
Nitrogen dioxide	NO_2	Annual arithmetic mean	0.030	0.053	57	100	If exceeded	If exceeded
		1 hour	0.18	0.100	339	188	If exceeded	
Sulfur dioxide	SO_2	24 hours	0.04	--	105	--	If exceeded	If exceeded more than 1 day per year
		3 hour	--	0.5	--	1,300	N/A	If exceeded more than 1 day per year
		1 hour	0.25	0.075	655	196	If exceeded	N/A
Hydrogen sulfide	H_2S	1 hour	0.03	--	42	--	If ≥	N/A
Vinyl chloride	C_2H_3Cl	24 hours	0.01	--	26	--	If ≥	N/A
Respirable particulate matter	PM_{10}	Annual arithmetic mean	--	--	20	--	If exceeded	N/A
		24 hours	--	--	50	150	If exceeded	If exceeded more than 1 day per year
Fine particulate matter	$PM_{2.5}$	Annual arithmetic mean	--	--	12	12	If exceeded	If exceeded over 3-year average
		24 hours	--	--	--	35	If exceeded	If exceeded over 3-year average
Sulfate particles	SO_4	24 hours	--	--	25	--	If ≥	N/A
Lead particles	Pb	Calendar Quarter	--	--	--	1.5	N/A	If exceeded more than 1 day per year
		Rolling 3-month average	--	--	--	0.15	If ≥	N/A
		30-day average	--	--	1.5	--	If ≥	N/A

1. All standards are based on measurements at 25 C and 1 atmosphere pressure.
2. National standards shown are the primary (health effects) standards.
3. N/A = not applicable

Source: California Air Resources Board. "Ambient Air Quality Chart." June 4, 2013. Accessed: July 6, 2015. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf

Table AQ-2: Sacramento County Attainment Status

Pollutant	Federal Standard	State Standard
Ozone	Attainment (1-hour Standard[1])	Nonattainment (1hour Standard[2]) Classification=Serious
	Nonattainment (8-hour Standard[3]) Classification=Severe	Nonattainment (8-hour Standard)
	Nonattainment (8-hour Standard[4]) Classification=Severe	
Particulate Matter 10 Micron	Attainment (24-hour standard)	Nonattainment (24-hour Standard)
		Nonattainment (Annual Mean)
Particulate Matter 2.5 Micron	Nonattainment (24-hour Standard)	(No State Standard for 24-hour Standard)
	Attainment (Annual Standard)	Attainment (Annual Standard)
Carbon Monoxide	Attainment (1-hour Standard)	Attainment (1-hour Standard)
	Attainment (8-hour Standard)	Attainment (8-hour Standard)
Nitrogen Dioxide	Unclassified/Attainment (1-hour Standard)	Attainment (1-hour Standard)
	Unclassified/Attainment (Annual Standard)	Attainment (Annual Standard)
Sulfur Dioxide	Attainment (Pending) (1-hour Standard	Attainment (1-hour Standard)
		Attainment (8-hour Standard)
Lead	Attainment (3-month rolling average)	Attainment (30-day average)
Visibility Reducing Particles	No Federal Standard	Unclassified (8-hour Standard)
Sulfates		Attainment (24-hour Standard)
Hydrogen Sulfide		Unclassified (1-hour Standard)

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) Section 40921.5(c), the classification is based on 1989 – 1991 data, and therefore does not change.
3. For the 1997 Standard.
4. For the 2008 Standard.

Source: SMAQMD 2017.

Ozone

Ozone is a photochemical oxidant (a substance whose oxygen combines chemically with another substance in the presence of sunlight) and the primary component of smog. Ozone is not directly emitted into the air but is formed through complex chemical reactions between precursor emissions of ROG and NO_X in the presence of sunlight. ROG are volatile organic compounds (VOCs) that are photochemically reactive. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_X are a group of gaseous compounds of nitrogen and oxygen that result from the combustion of fuels. Emissions of the ozone precursors ROG and NO_X have decreased over the past several years because of more stringent motor vehicle standards and cleaner burning fuels. Emissions of ROG and NO_X decreased from 2000 to 2010 and are projected to continue decreasing from 2010 to 2035 (CARB 2013).

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 2017).

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 geographical area may not be representative of the local sources of NO_X emissions (EPA 2017).

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 2017).

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, 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 2013). 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 (CARB 2013).

PM_{10} pollution can result in damage to vegetation and is often responsible for much of the haze regarded as smog. In addition, controlled human exposure studies have shown that exposure to elevated levels of PM_{10} causes adverse health effects, especially related to the inhibition of lung functions and an increase in respiratory and cardiovascular afflictions, as well as cancer risks. PM_{10} causes a greater health risk than larger particles because fine particles are too small for the natural filtering process of the human body and can more easily penetrate the defenses of the human respiratory system (CARB 2017). Individuals with preexisting respiratory or cardiovascular disease are especially susceptible to the adverse effects of PM_{10} exposure, as are asthmatic children and the elderly. Children exposed to high concentrations of PM for prolonged periods exhibit decreased immune function as well. Additionally, associations between long-term exposure to PM and adverse cognitive effects, such as faster cognitive decline, including memory and attention span loss, are being further examined by health researchers (CARB 2017).

Fine particulate matter ($PM_{2.5}$) includes a subgroup of smaller particles that have an aerodynamic diameter of 2.5 micrometers or less. Direct emissions of $PM_{2.5}$ have steadily declined in the SVAB between 2000 and 2010 but 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 2013).

As $PM_{2.5}$ is smaller than PM_{10}, it can more deeply penetrate the human body through inhalation, allowing many chemicals harmful to human health to be carried to internal organs. Long-term exposure to these particulates can increase the chance of chronic respiratory disease and cause lung damage and irregular heartbeat. Research has also linked long-term $PM_{2.5}$ exposure and increased mortality from cardiovascular disease, well as impaired respiratory and immune function (Ostro et al. 2014). Short-term exposure can aggravate respiratory illnesses such as bronchitis and asthma and cause heart attacks and arrhythmias in people with heart disease. Additionally, an estimated 9,000 people die prematurely each year in California as a result of $PM_{2.5}$ exposure (CARB 2013). A safe threshold for $PM_{2.5}$ has not been established and research indicates that health effects exist at low concentrations. In addition, EPA has concluded that there is a suggestive relationship between long-term exposure to $PM_{2.5}$ and cancer, mutagenicity, genotoxicity, and reproductive and developmental health impacts (SMAQMD 2019a:4).

Existing Air Quality Conditions

The Sacramento Metropolitan Area is a federal ozone non-attainment area and one of the top ten worst air quality areas nationally. In Sacramento County, pollutants of greatest concern are ozone precursors (hydrocarbons and nitrogen oxides), carbon monoxide (CO), PM_{10} and $PM_{2.5}$, and other visibility-reducing material. Table AQ-2 denotes the attainment and nonattainment status for the NAAQS and CAAQS for criteria air pollutants.

The Sacramento Federal Nonattainment Area for ozone (SFNA) is comprised of five air districts in the southern portion of the Sacramento air basin. The SFNA air districts include all of Sacramento and Yolo counties, and portions of El Dorado, Placer, Sutter and Solano counties. Except for ozone and particulate matter standards, this area is in attainment for all CAAQS and NAAQS. However, the SFNA is designated a “severe”

nonattainment area for the 8-hour NAAQS for ozone. As a part of the SFNA, Sacramento County is out of compliance with the 1-hour CAAQS and the 8-hour NAAQS for ozone.

With respect to PM, Sacramento County is designated as nonattainment for the State PM_{10} 24-hour standard and annual mean standard, the State $PM_{2.5}$ annual standard, and the federal $PM_{2.5}$ 24-hour standard.

Ambient air quality standards provide the definition for clean air. Specifically, the NAAQS and CAAQS establish the concentration above which a pollutant is known to cause adverse health effects to sensitive groups within the population, such as children and the elderly. Because these standards have been established for specific pollutants using health-based criteria, the pollutants for which standards have been set are known as “criteria” pollutants. For some of the criteria air pollutants, the State standards are more stringent than the federal standards. The differences in the standards are due to variations in health studies and interpretations involved in the standard-setting process.

The amount of pollutants released and the atmosphere’s ability to transport and dilute the pollutants affect a given pollutant’s concentration in the atmosphere. Factors affecting transport and dilution include terrain, wind, atmospheric stability, and, for photochemical pollutants, sunlight. Sacramento’s poor air quality can largely be attributed to emissions, geography, and meteorology.

Toxic Air Contaminants

According to the California Air Resources Board’s (CARB’s) *California Almanac of Emissions and Air Quality*, the majority of the estimated health risks from TACs can be attributed to relatively few compounds, the most important being diesel PM (CARB 2013). 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.

Of these TACs, diesel PM poses the greatest health risk. 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. Since 1990, the health risk associated with diesel PM has been reduced by 52 percent. Overall, levels of most TACs, except para-dichlorobenzene and formaldehyde, have decreased since 1990 (CARB 2013).

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 eastern boundary of the Plan Area is located approximately 0.5 mile west of the existing Sacramento Rendering Company plant, a facility that accepts animal materials processes it, and then distributes the byproduct for use in the manufacture of other goods. The eastern boundary of the Plan Area, which could include sensitive land uses such as residences, is closer than the Sacramento Metropolitan Air Quality Management District (SMAQMD)-recommended 4-mile buffer for siting sensitive land uses within the vicinity of a rendering plant (SMAQMD 2009).

Sensitive Land Uses

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/or the potential for increased and prolonged exposure to pollutants.

The Plan Area is largely undeveloped. Current land uses on the properties within the Plan Area are predominantly grazing, small ranches, and rural, agricultural residential homes. A portion of the Plan Area includes the Sacramento Raceway, which hosts regular stock car and drag racing events several times a month throughout the year. These events result in the release of fugitive PM_{10} and $PM_{2.5}$, as well as NO_X emissions, from vehicle exhaust.

Regulatory Setting

Air quality in Sacramento County is regulated by several agencies, including the U.S. Environmental Protection Agency (EPA), CARB, and SMAQMD. Each of these agencies develop rules and/or regulations to attain the goals or directives imposed upon them through legislation. Although EPA regulations may not be superseded, both State and local regulations may be more stringent. In general, air quality is evaluated based upon standards developed by federal and State agencies.

FEDERAL

FEDERAL CLEAN AIR ACT

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required EPA to establish NAAQS with states retaining the option to adopt more stringent standards or to include other specific pollutants. The primary and secondary standards are the levels of air quality considered to protect public health and safety, respectively, with an adequate margin of safety. The primary standards are intended to protect public health, such as reducing the risk of developing acute or chronic illnesses in the country's population, while the secondary standards are protective of public welfare and serve to minimize damage to animals, crops, vegetation, and buildings. They are designed to protect those sensitive receptors most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

Current NAAQS and area-attainment status are discussed above. The CAA and its subsequent amendments require each state to prepare a SIP. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The SIP is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. EPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA.

STATE

CALIFORNIA AIR RESOURCES BOARD

CARB, a part of the California EPA (CalEPA), is responsible for the coordination and administration of both federal and State air pollution control programs within California. In this capacity, CARB conducts research and defines the CAAQS, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products, such as hairspray, aerosol paints, and barbecue lighter fluid, and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB has primary responsibility for the development of California's SIP, for which it works closely with the federal government and the local air districts.

In addition to standards set for the six criteria air pollutants, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety, meaning that exposure to concentrations at or below the CAAQS would be preventative against the development of acute or chronic illnesses. The attainment status under the CAAQS for the Plan Area is discussed in the Section, "Environmental Setting," above.

California Clean Air Act

The California Clean Air Act (CCAA) of 1988 requires non-attainment areas to achieve and maintain the CAAQS by the earliest practicable date and local air districts to develop plans for attaining the State's ozone, CO, SO_2, and NO_2 limits. The CCAA also requires that air districts assess their progress toward attaining the air quality standards every 3 years.

The Air Toxics Hot Spots Information and Assessment Act

California Health and Safety Code Section 44300 et seq., provides for the regulation of over 200 air toxics and contains the primary air contaminant legislation in the state. Under the Act, local air districts may request that a facility account for its TAC emissions. Local air districts then prioritize facilities on the basis of emissions, and high-priority designated facilities are required to submit a health risk assessment and communicate the results to the affected public. The TAC control strategy involves reviewing new sources to ensure compliance with required emission controls and limits, maintaining an inventory of existing sources of TACs, and developing new rules and regulations to reduce TAC emissions.

Assembly Bill 1807

AB 1807, enacted in September 1983, sets forth a procedure for the identification and control of TACs in California. AB 1807 defines a TAC as an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or which may pose a present or potential hazard to human health. CARB prepares identification reports on candidate substances under consideration for listing as TACs. The reports and summaries describe the use of and the extent of emissions in California resulting in public exposure, together with their potential health effects.

In 1998, CARB identified diesel particulate matter (diesel PM) as a TAC under the AB 1807 program. Diesel PM is emitted into the air via heavy-duty diesel trucks, construction equipment, and passenger cars.

Local

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 SMAQMD 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 1-hour and 8-hour ozone standards. The Sacramento Region has been designated as a "moderate" 8-hour ozone nonattainment area with an extended attainment deadline in 2026 (EPA 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 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 required. 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.

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. SMAQMD also has recommended screening distances for CEQA evaluation when siting a source of odor (e.g., landfill, wastewater treatment plant) within the vicinity of an existing sensitive land use.

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 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 the potential to improve air quality as well.

Community Plans

Cordova Community Plan

The Cordova Community Plan does not contain objectives related to air quality that would apply to the Project.

Vineyard Community Plan

The Vineyard Community Plan does not contain policies related to air quality that would apply to the Project.

Impacts and Analysis

Significance Criteria

SMAQMD has developed guidance to evaluate a project's contribution to regional air quality impacts and has continuously updated its guidance based on the attainment status of the SVAB. SMAQMD adopted operational mass emissions thresholds for ROG and NO_X with the goal of obtaining 0.49 tons per year (tpy) of ROG and 0.45 tpy reductions from new development projects exceeding the thresholds through incorporation of project design features and/or mitigation strategies. SMAQMD has also adopted mass emissions thresholds for PM_{10} and $PM_{2.5}$ to align with New Source Review permit offset levels, which are designed to prevent new emission sources from affecting attainment progress of the NAAQS. These thresholds of significance are protective of public health in the overall region, and due to the nature of criteria air pollutants, there is no methodology developed to determine the specific geographical locations of where concentrations of criteria air pollutants may exceeds the NAAQS or CAAQS due to a project's contribution of emissions (SMAQMD 2019b).

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

- 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 (BMPs) shall be implemented to minimize emissions of PM_{10} and $PM_{2.5}$; otherwise, the threshold for both PM_{10} and $PM_{2.5}$ is 0 lb/day;

- 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, 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 threshold for both PM_{10} and $PM_{2.5}$ is 0 lb/day;
- 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;
- 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; and/or
- Result in other emissions, such as those leading to odors, adversely affecting a substantial number of people.

Issues not discussed Further

All issues identified in the significance criteria are evaluated below.

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 Project's emissions were 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 Draft EIR, SMAQMD has not adopted a permanent guidance document; however, it is reasonably foreseeable that SMAQMD could release such guidance in late fall of 2019. 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, as recommended by Sacramento County and SMAQMD (CAPCOA 2016). 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 (e.g., meteorology, emissions factors) 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 Project was assumed to begin in 2020. Although the actual construction schedule is unknown at this time, the earliest possible date that construction could occur was used. This assumption is 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 15 years. Complete build-out of the Project was assumed to occur by December 21, 2034. For a detailed description of model input and output parameters and assumptions, refer to Appendix AQ-1.

To evaluate long-term operational impacts for land use development projects such as the Project, SMAQMD recommends that projects show consistency with the Sacramento Regional Ozone Attainment Plan and the SACOG's MTP/SCS.

Air districts develop thresholds of significance for CEQA evaluation in consideration of attainment designation under the NAAQS and CAAQS for the area they oversee. Typically, these thresholds are tied to an air district in nonattainment's SIP for criteria air pollutants within a cumulative context. SMAQMD has developed project-level operational thresholds for ROG and NO_X of 65 lb/day to ultimately achieve an annual 0.49 tpy and 0.45 tpy reduction in ROG and NO_X, respectively. These reductions have been identified by SMAQMD as appropriate to further Sacramento County's goal of reaching attainment for the NAAQS and CAAQS, which, if in attainment, would indicate that the area supports concentrations of ozone that would not be hazardous to human health.

As discussed previously, the NAAQS and CAAQS represent concentrations of criteria air pollutants protective of human health and are substantiated by extensive scientific evidence. EPA and CARB recognize that ambient air quality below these concentrations would not cause adverse health impacts to exposed receptors. In connecting an air district's (e.g., SMAQMD) thresholds of significance to its anticipated date of attainment, projects that demonstrate levels of construction and/or operational emissions below the applicable thresholds would not result in cumulatively considerable emissions that would cause an adverse health impact related to exposure to criteria air pollutants in elevated concentrations. Similarly, projects that demonstrate emissions levels in exceedance of an applicable threshold could contribute to the continued nonattainment designation of a region or potentially degrade a region from attainment to nonattainment. Resulting acute or chronic respiratory and cardiovascular illness could occur including coughing, difficulty breathing, chest pain, eye and throat irritation, exacerbation of existing respiratory and cardiovascular disease, cancer, impaired immune and lung function, and, in extreme cases, death.

However, the exact location and magnitude of health impacts that could occur as a result of project construction or operation is infeasible to model with a high degree of accuracy. The secondary formation of PM is similar to the complexity of ozone formation, and localized impacts of directly emitted PM do not always equate to local PM concentrations due to the transport of emissions. Ozone is a secondary pollutant formed from the oxidation of ROG and NO_X in the presence of sunlight. Rates of ozone formation are a function of a variety of complex physical factors, including topography, building influences on air flow (e.g., downwash), ROG and NO_X concentration ratios, multiple meteorological conditions, and sunlight exposure (Seinfeld and Pandis 1996:298). For example, rates of ozone formation are highest in elevated temperatures and when the ratio of ROG to NO_X

is 5.5:1. When temperatures are lower and this ratio shifts, rates of ozone formation are stunted (Seinfeld and Pandis 1996:299–300). In addition, ROG emissions are composed of many compounds that have different levels of reactivity leading to ozone formation. Methane, for instance, is the most common ROG compound, yet it has one of the lowest reactivity potentials (Seinfeld and Pandis 1996:309, 312). Moreover, some groups may develop more severe health impacts than others. For instance, infants, children, the elderly, and individuals with preexisting medical conditions are more susceptible to developing illnesses from exposure to air pollutants.

SMAQMD has not developed a dispersion model for project-level evaluation of resulting concentrations of criteria air pollutants within the Sacramento region at the time of preparing this EIR analysis, nor has it endorsed a model prepared by others. SMAQMD is currently in the process of developing a model, which may be released in fall of 2019 (SMAQMD).

However, given the uncertainty surrounding the age, existing health, genetic sensitivity, and numbers of receptors in a region, dispersion modeling cannot quantitatively assess potential human health impacts. Additionally, the timing and location of air pollution is speculative at the programmatic level. As a result, attempting to predict the locations of human health impacts from implementation of the Project would not be meaningful. Thus, human health impacts are discussed qualitatively. Nonetheless, this analysis makes a good faith effort to disclose foreseeable construction and operational emissions from the land use changes proposed under the Project.

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 not included in the current SIP, SMAQMD recommends a 35 percent reduction of ozone precursors from mobile-source emissions. The Project was included in the 2016 MTP/SCS; however, it was not accounted for in the most recent SIP. Thus, consistent with SMAQMD guidance, the Project (and alternatives) would need to achieve a 35 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 Applicant has prepared an AQMP for Alternative 2 to define the processes by which emissions of ROG and NO_X would be reduced by 35 percent. The full text of the AQMP is included as Appendix AQ-1 of this EIR. The AQMP was prepared for Alternative 2 because the County has expressed a preference for this alternative due to its consistency with the South Sacramento Habitat Conservation Plan.

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. 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 and 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 Jackson Township Specific Plan (DKS 2019), data provided by the Project Applicant, and data provided by Sacramento County. Data used in this analysis are included in Appendix TC-1.

To estimate mobile-source emissions, CalEEMod was used in combination with Project-specific traffic data included in the study conducted for the Project (DKS 2019). 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 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 2035.

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 determine whether the Project would achieve the 35 percent emission reduction target. See the AQMP included in Appendix AQ-1 for details regarding establishment of the 35 percent reduction target and incorporated emission reduction measures.

For the unmitigated emissions scenario, the proposed land uses and acreages for the 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 (California Energy Code) that would take effect on January 1, 2020 but are not accounted for in the CalEEMod software. The 2019 California Energy Code requirements 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 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 and adjusting CalEEMod defaults to estimate emissions from mobile sources (DKS 2019). VMT attributed to the Project was processed to include only Project-generated VMT that would occur in Sacramento County. The Project is assumed to be completely built out by 2035. As such, this was the assumed operational year of the Project for both emissions scenarios. See Appendix AQ-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., 2035). 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 was evaluated using SMAQMD-recommended screening criteria.

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.

Impact: Construction Emissions of Criteria Air Pollutants and Precursors (ROG, NO_X, PM_{10}, and $PM_{2.5}$)

Proposed Project

Construction emissions are described as “short-term” or temporary in duration. Project construction is anticipated to occur for an extended period of approximately 15 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, 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 VMT 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 could require all-terrain 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.

The Project would require additional offsite improvements that would result in construction activities which have not been accounted for in the air quality modeling for the Project because they would occur as mitigation for traffic impacts (See Mitigation Measures TR 1 and TR-3 in Chapter 5, “Transportation and Circulation”). At the time of writing this Draft EIR, the timing of off-site transportation mitigation construction activities is speculative and, thus, not included.

It is expected that with implementation of Mitigation Measure TR-1 segments of Kiefer Road, Jackson Road (also referred to as Jackson Highway), and Excelsior Road—the roads that border the Plan Area—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 5, "Traffic and Circulation," provides additional detail regarding these mitigation measures.

The exact construction schedule for the Project is unknown. It is expected that construction would occur over a series of phases; however, the order in which the development areas would be constructed is speculative. While the Project contains a land use map (see Chapter 2, "Project Description"), there is inherent uncertainty surrounding market forces and certification of individual development applications which could affect the timing and phasing of Project construction. Ultimately, construction phasing and activities would be driven by prevailing market conditions in any given year. Therefore, construction was assumed to 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 Plan Area 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.

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-1.

Table AQ-3 summarizes the modeled maximum daily emissions from the construction activity, whereby maximum daily emissions were 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.

Table AQ-3: Summary of Maximum Daily Emissions of Criteria Air Pollutants and Precursors Associated with Project Construction (2020–2034[1])

Construction Year	ROG (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)	PM_{10} (tpy)	$PM_{2.5}$ (lb/day)	$PM_{2.5}$ (tpy)
2020	5	50	20	2	12	1
2021	7	59	12	1	6	1
2022	69	123	48	2	14	1
2023	66	106	48	6	14	2
2024	65	103	48	6	14	2
2025	64	99	48	6	14	2
2026	63	97	48	6	14	2
2027	62	95	48	6	14	2
2028	61	94	48	6	14	2
2029	60	92	48	6	14	2
2030	59	86	48	6	13	2
2031	58	85	48	6	13	2
2032	57	84	48	6	13	2
2033	56	104	48	6	13	2
2034	55	100	48	6	13	2
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; tpy = tons per year; SMAQMD = Sacramento Metropolitan Air Quality Management District.

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

1. Construction is expected to be completed by December 31, 2034.

Source: Modeled by Kleinfelder in 2019

As shown in Table AQ-3, 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 **significant** impact.

Mitigation Measures AQ-1a and AQ-1b would be applied to the Project. Mitigation Measure AQ-1a requires that the Project Applicant, or its designee, apply Basic Construction Emission Control Practices to reduce emissions of fugitive dust associated with ground-moving activities and vehicle movement on unpaved roads. As shown in

Table AQ-3, the Project's construction emissions of PM_{10} and $PM_{2.5}$ would be below SMAQMD's mass emissions threshold for projects that employ Basic Construction Emission Control Practices. Without implementation of Mitigation Measure AQ-1a, the threshold would be 0 lb/day.

Application of Mitigation Measure AQ-1b would require the Project Applicant, or its designee, to implement Enhanced Exhaust Control Practices, which would reduce exhaust NO_X emissions by 10 percent as compared to CARB's statewide fleet average. This 10 percent decrease would not be sufficient to reduce NO_X emissions to levels at or below SMAQMD's thresholds of significance; however, the resulting tons per year of emissions would be decreased through engagement in SMAQMD's off-site mitigation fee program. As shown above in Table AQ-3, maximum NO_X daily emissions for construction occurring in 2022, 2023, 2024, 2025, 2026, and 2027 would exceed SMAQMD's recommended threshold following the application of Enhanced Exhaust Control Practices (i.e., 85 lb/day).

For the year 2022, the required mitigation fee to meet the threshold would be 4.7 tons costing $141,000; for 2023, 1.9 tons costing $57,000; for 2024, 1.4 tons costing $42,000; for 2025, 0.75 tons costing $22,500; for 2026, 0.42 tons costing $12,600; and for 2027, 0.09 tons costing $2,700. This total cost of $277,800 would be sufficient 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. However, these values represent estimates based on preliminary data and mitigation fees that are subject to change over time. Nonetheless, at the time of writing this Draft EIR, the purchase of these offsets would reduce Project construction-generated NO_X levels. This impact would be **less than significant with mitigation**.

Alternative 2

Alternative 2 would entail modifying the wetland preserve on the eastern boundary of the Plan Area, which would preserve vernal pools in the area. With a 45.5-acre increase in area designated Wetland Preserve, Alternative 2 would result in a net decrease in areas designated for Agriculture (35.1 acres) and Primary Roadways (17.9 acres).

Similar construction activities would occur under Alternative 2 as summarized in the short-term construction-related impact discussion for the Project. Nonetheless, construction emissions for Alternative 2 were modeled to provide a quantitative comparison to the Project. Table AQ-4 summarizes the maximum daily emissions of criteria pollutants and precursors associated with buildout of Alternative 2.

Table AQ-4: Summary of Maximum Daily Emissions of Criteria Air Pollutants and Precursors Associated with Alternative 2 Construction (2020–2034[1])

Construction Year	ROG (lb/day)	NO_X (lb/day)	PM_{10} (lb/day)	PM_{10} (tpy)	$PM_{2.5}$ (lb/day)	$PM_{2.5}$ (tpy)
2020	5	50	20	2	12	1
2021	4	46	11	1	5	1
2022	63	127	46	2	12	1
2023	61	109	46	6	13	2
2024	60	106	45	6	13	2
2025	59	103	45	6	13	2
2026	58	100	45	6	13	2
2027	57	98	45	6	13	2
2028	56	96	45	6	13	2
2029	55	95	45	6	13	2
2030	54	88	45	6	12	2
2031	54	87	45	6	12	2
2032	53	86	45	6	12	2
2033	52	85	45	6	12	2
2034	52	84	45	5	12	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; tpy = tons per year; SMAQMD = Sacramento Metropolitan Air Quality Management District.

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

1. Construction is expected to be completed by December 31, 2034.

Source: Modeled by Kleinfelder in 2019

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 **significant** impact.

Proposed dust control measures in Mitigation Measure AQ-1a would result in a maximum of 54 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 Mitigation Measure AQ-1a would minimize dust emissions such that Alternative 2 would not contribute substantially to the nonattainment status of the SVAB.

Implementation of exhaust control measures in Mitigation Measure AQ-1b would reduce NO_X emissions from off-road equipment by 10 percent (or higher depending on available technology); however, assuming a 10 percent reduction in NO_X, maximum daily emissions for construction occurring in 2022, 2023, 2024, 2025, 2026, 2027, and 2028 would still exceed SMAQMD's recommended threshold (i.e., 85 lb/day). For the year 2022, the required mitigation fee to meet the threshold would be 5.3 tons costing $158,775; for 2023, 2.4 tons costing $71,175; for 2024, 1.9 tons costing $56,940; for 2025, 1.4 tons costing $42,157; for 2026, 0.9 tons costing $27,375; for 2027, 0.6 tons costing $17,520; and for 2028, 0.25 tons costing $7,665. This total cost of $381,607 would be sufficient 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. However, these values represent estimates based on preliminary data and mitigation fees that are subject to change over time. Nonetheless, at the time of writing this Draft EIR, the purchase of these offsets would reduce construction-generated NO_X levels. This impact would be **less than significant with mitigation**.

Mitigation Measures

AQ-1a: For all future land use development applications processed within the Plan Area, the Project Applicant, its designee, or subsequent developer(s), shall require its construction contractors to implement SMAQMD's Basic Construction Emission Control Practices in place at the time of construction, which currently include the following:

- 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 or 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);
- complete construction of all roadways, driveways, sidewalks, parking lots as soon as possible. In addition, building pads should be laid as soon as possible after grading unless seeding or soil binders are used;

- 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; and
- 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.

These measures shall be included in Project improvement plans as a condition of approval.

AQ-1b: The Project Applicant, its designee, or subsequent developer(s), shall implement SMAQMD's Enhanced Exhaust Control Practices for NO_X and exhaust PM emissions. Before the issuance of grading and/or building permits, Project Applicant, or its designee, shall submit to the County and SMAQMD an initial report of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used 8 hours or more during any portion of the construction project before any grading activities. The initial report shall include the horsepower rating, engine model year, and projected hours of use for each piece of equipment. The Project Applicant 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 report 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 Applicant, or its designee, 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 10 percent NO_X reduction (depending on available technology and engine Tier) 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 Applicant, or its designee, shall submit a final report at the end of the job, phase, or calendar year, as pre-arranged with SMAQMD staff and documented in the approval letter, to demonstrate continued project compliance. 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 aforementioned mitigation measures, 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 would be reduced to a less-than-significant level. The fee calculation to offset daily NO_X emissions shall be based on the SMAQMD-determined cost to reduce one ton of NO_X applicable at the time (currently $30,000 per ton but subject to change in future years).

Once initial construction activities are finalized by the developer, and before the issuance of grading and/or building permits, quantification of construction-related emissions shall be verified at the project level. As each project-level 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 the contractor equipment report 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.

Impact: Long-term Operational Emissions of Criteria Pollutants and Precursors (NO_X, ROG, PM_{10}, and $PM_{2.5}$)

Proposed Project

Development of the Project would result in the generation of long-term operational emissions of ROG, NO_X, and particulate matter (PM_{10} and $PM_{2.5}$) from mobile, stationary, and area-wide sources. Mobile-source emissions of criteria 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 VMT values contained in the traffic study (DKS 2019). 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.

Table AQ-5: Summary of Project Maximum Daily (Unmitigated) Operational Emissions of Criteria Air Pollutants at Full Buildout (2035)

Source Type	Maximum Daily Emissions (lb/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Summer				
Area[1]	313	74	8	8
Energy[2]	5	46	4	4
Mobile	129	496	307	83
Total Summer Daily Emissions	447	615	319	95
Winter				
Area	313	74	8	8
Energy	5	46	4	4
Mobile	85	502	307	83
Total Winter Daily Emissions	404	621	319	95
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 Kleinfelder in 2019.

As shown above in Table AQ-5, operational ROG, NO_X, PM_{10}, and $PM_{2.5}$ emissions would exceed SMAQMD's daily mass emissions thresholds. As summarized in Table AQ-6, PM_{10} emissions would also exceed SMAQMD's annual mass emissions of 14.6 tons/year. Because these pollutants would exceed the applicable thresholds, operational 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.

Projects that emit criteria air pollutants in exceedance of SMAQMDs thresholds would contribute to the regional degradation of air quality within the Plan Area that could result in adverse human health impacts. Acute exposure to criteria air pollutants can cause coughing, chest pain, shortness of breath, eye and throat irritation, lung scarring, and may aggravate preexisting cardiovascular and respiratory illness (e.g., asthma). Chronic exposure to criteria pollutants may result in permanent lung and heart impairment, chronic coughing, cancer, decreased immune function in children, and premature death.

Table AQ-6: Summary of Project Annual (Unmitigated) Operational Emissions of Criteria Air Pollutants and Precursors at Full Buildout (2035)

Source Type	Annual Emissions (tons/year)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Area[1]	55	2	<1	<1
Energy[2]	1	8	1	1
Mobile	15	78	47	13
Total Annual Emissions	71	88	48	14
SMAQMD Threshold of Significance[3,4]	NA	NA	14.6	15
Exceeds Threshold?	NA	NA	Yes	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: Modeling conducted by Kleinfelder in 2019

As discussed previously under the heading, “Methodology,” determining the exact location of where such impacts would occur from Project-level emissions is scientifically infeasible. Additionally, the specific timing, size, and land use that may characterize a project that exceeds an applicable mass emission threshold is unknown at the time of writing this Draft EIR. Thus, attempting to map or locate where human health impacts may occur from implementation of the Project is speculative. However, this EIR takes the conservative approach and assumes that the land use changes from implementation of the Project could cause adverse health outcomes. This would be a **significant** impact.

Mitigation Measure AQ-2a, discussed below, would be applied to the Project. Mitigation Measure AQ-2a requires that an AQMP that achieves a 35 percent reduction compared to an “unmitigated” project scenario (i.e., utilizes CalEEMod VMT default values) be applied to the Project. The adequacy of the AQMP shall be verified by SMAQMD through a formal letter certifying that the reductions achieve the 35 percent reduction target. However, complying with SMAQMD guidance would not inherently result in a less-than-significant impact as emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ could be in exceedance of the SMAQMD mass emissions thresholds for operational emissions. The Project would be similar to Alternative 2 in terms of land uses and density, and as

discussed below under Alternative 2, compliance with SMAQMD's AQMP requirement would not be sufficient to reduce emissions of NO_X and PM_{10} to levels below the applicable operational thresholds of significance. Thus, operational emissions of criteria air pollutants and ozone precursors would be **significant and unavoidable**.

ALTERNATIVE 2

Alternative 2 would modify the wetland preserve on the eastern boundary of the Plan Area, creating a "thumb" that includes the protection of vernal pools along the existing drainage corridor. As compared to the Project, less development would occur under Alternative 2. Operational activities under Alternative 2 would similarly result in fewer emissions of criteria pollutant and ozone precursors. These emissions could occur from vehicle trips to and from the Plan Area, landscaping, application of architectural coatings, use of consumer products, and the consumption of electricity.

As shown above in Table AQ-7, operational ROG, NO_X, PM_{10}, and $PM_{2.5}$ emissions would exceed SMAQMD's daily mass emissions thresholds. As summarized in Table AQ-8, PM_{10} emissions would also exceed SMAQMD's annual mass emissions of 14.6 tons/year. Because these pollutants would exceed the applicable thresholds, operational emissions generated under full buildout of Alternative 2 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 **significant** impact.

Table AQ-7: Summary of Alternative 2 Maximum Daily (Unmitigated) Operational Emissions of Criteria Air Pollutants at Full Buildout (2035)

Source Type	Maximum Daily Emissions (lb/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Summer				
Area[1]	292	49	6	6
Energy[2]	4	37	3	3
Mobile	117	448	272	73
Total Summer Daily Emissions	413	534	281	83
Winter				
Area	292	49	6	6
Energy	4	37	3	3
Mobile	77	453	272	73
Total Winter Daily Emissions	373	538	281	83
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 Kleinfelder in 2019

Implementation of Mitigation Measure AQ-2b requires Alternative 2 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 35 percent reduction of ozone precursors from operational emissions would be met through the provisions of the AQMP.

Table AQ-8: Summary of Alternative 2 Annual (Unmitigated) Operational Emissions of Criteria Air Pollutants and Precursors at Full Buildout (2035)

Source Type	Annual Emissions (tons/year)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Area[1]	52	2	<1	<1
Energy[2]	1	7	1	1
Mobile	13	71	42	12
Total Annual Emissions	66	80	43	12
SMAQMD Threshold of Significance[3,4]	NA	NA	14.6	15
Exceeds Threshold?	NA	NA	Yes	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: Modeling conducted by Kleinfelder in 2019

Mitigation Measure AQ-2b includes mitigation that was included in the AQMP, which was designed to achieve a minimum 35 percent emissions reduction (per guidance from SMAQMD, indicating that this represents the feasible mitigation that should be applied). Because the SMAQMD-adopted operational thresholds for ROG and NO_X are daily mass emission thresholds, the tpy emission reductions from the AQMP have been converted into lb/day in Table AQ-9, below, to compare emissions to the adopted thresholds. The tpy emissions were converted by multiplying by 2,000 pounds per ton and then dividing by 365 days per year. However, even with a 35 percent reduction of ozone precursors from mobile-source emissions, Alternative 2's total NO_X and PM_{10} from area-sources, building energy, and mobile-sources would exceed SMAQMD thresholds of significance, as shown below in Table AQ-9.

Table AQ-9: Alternative 2 Maximum Daily (Mitigated) Operational Emissions of Criteria Air Pollutants and Precursors at Full Buildout (2035)

Source Type	Maximum Daily Emissions (lb/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Maximum Daily Emissions[1]	63	333	238	68
SMAQMD Threshold of Significance	65	65	80	82
Exceeds Threshold?	No	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.] Tons per year emissions values were converted to pounds per day by multiplying the values by 2,000 then dividing by 365.

Source: Modeling conducted by Kleinfelder in 2019

Although Alternative 2 may reduce operational emissions of ROG and $PM_{2.5}$ to levels below SMAQMD's mass emissions threshold, the mitigation measures contained in the AQMP would not be sufficient to reduce NO_X and PM_{10} emissions to less-than-significant levels. Thus, Alternative 2 operations may contribute to the nonattainment status of the region and may conflict with the NAAQS and CAAQS. This contribution could result in increased exposure of populations to harmful concentrations of criteria air pollutants which could cause adverse health impacts such as acute and chronic respiratory and cardiovascular illness, suppressed immune function, and cancer.

Projects that emit criteria air pollutants in exceedance of SMAQMDs thresholds would contribute to the regional degradation of air quality within the Plan Area that could result in adverse human health impacts. Acute exposure to criteria air pollutants can cause coughing, chest pain, shortness of breath, eye and throat irritation, lung scarring, and may aggravate preexisting cardiovascular and respiratory illness (e.g., asthma). Chronic exposure to criteria pollutants may result in permanent lung and heart impairment, chronic coughing, cancer, decreased immune function in children, and premature death.

As discussed previously under the heading, "Methodology," determining the exact location of where such impacts would occur from Project-level emissions is scientifically infeasible. Additionally, the specific timing, size, and land use that may characterize a project that exceeds an applicable mass emission threshold is unknown at the time of writing this Draft EIR. Thus, attempting to map or locate where human health impacts may occur from implementation of Alternative 2 is speculative. However, this EIR takes the conservative approach and assumes that the land use changes from implementation of Alternative 2 could cause adverse health outcomes.

Operation-related emissions of NO_X and PM_{10} would be **significant and unavoidable.**

Mitigation Measures

AQ-2a: If the Project is approved, the Project Applicant or subsequent developer(s) shall prepare an AQMP that demonstrates a 35 percent reduction from an "unmitigated" project scenario consistent with guidance from SMAQMD for the Project within 6 months following approval. The AQMP shall compare the Project's emissions using vehicle miles traveled (VMT) values from a traffic

study conducted for the Project against an "unmitigated" scenario that utilizes default VMT values using the latest version of the California Emissions Estimator Model (CalEEMod) computer program. If the comparison does not demonstrate a 35 percent reduction, the Project Applicant shall develop feasible on-site reduction measures that reduce emissions to meet the 35 percent reduction target as mandated by SMAQMD. The AQMP shall undergo review by SMAQMD and shall only be applied to the Project following formal verification from SMAQMD in letter form.

AQ-2b: Alternative 2 shall include the following quantifiable reduction measures included in the AQMP prepared for Alternative 2 (Appendix AQ-1 of the EIR), which would reduce Alternative 2's operational criteria air pollutants and ozone precursors by 35 percent in comparison to the "unmitigated" Alternative 2, as conditions of approval:

TRANSPORTATION

- The Project Applicant or subsequent developer(s) shall implement a program to provide a non-revocable funding mechanism that would pay for bus and/or shuttle operations between the project and the Manlove Light Rail Station. The nonrevocable funding mechanism would be administered by the County and would provide residents and employees of Jackson Township Alternative 2 with transit passes that would access the entire Regional Transit system.
- The Project Applicant or subsequent developer(s) shall install up to 10 percent of all parking spaces with electric vehicle (EV) charging stations at commercial, retail, and office parking lots and up to 5 percent at school parking lots for Alternative 2. Each EV charging station shall have 2 connections.
- The Project Applicant or subsequent developer(s) shall prewire all low density and medium density dwelling units (3,540 dwelling units for Alternative 2) plus 10 percent of the high-density residential housing (10 percent of 2,050 dwelling units for Alternative 2, or 205 units in high density housing) to be conducive to installation of electric charging stations.

ENERGY

- The Project Applicant or subsequent developer(s) shall install energy efficient boilers as applicable in high-density housing (mid-rise apartments), discount club, office, high school, and supermarket land uses for Alternative 2.
- The Project Applicant or subsequent developer(s) shall install electric hot water heaters in all single and multi-family housing units (low, medium, and high density), or a total of 5,690 dwelling units for Alternative 2.

PROJECT DESIGN

- The Project Applicant or subsequent developer(s) shall install low-flow bathroom, kitchen, and shower fixtures; and low-flow toilets in all residential units and commercial buildings.
- The Project Applicant or subsequent developer(s) shall reduce the total square footage of residential turf associated with increased housing density.
- The Project Applicant or subsequent developer(s) shall install water efficient irrigation systems and water efficient landscaping for non-residential areas.
- The Project Applicant or subsequent developer(s) shall preserve wetlands and create new greenbelts, parking, and other vegetative areas totaling approximately 400 acres for Alternative 2.
- The Project Applicant or subsequent developer(s) shall reduce VMT through membership in a Transportation Management Association (TMA).

IMPACT: MOBILE-SOURCE CO CONCENTRATIONS

PROPOSED PROJECT

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.

At complete buildout, the Project would generate up to 62,384 daily trips including up to 5,909 trips during the a.m. peak hour and up to 5,651 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 $\mu g/m^3$ or the 1-hour CAAQS of 20.0 $\mu g/m^3$. The screening methodology has two tiers of screening criteria, as described below. If the first set is not met, then the second tier may be applied.

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, the 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: South Watt Avenue and Elder Creek Road, Hedge Avenue and Elder Creek Road, Bradshaw Road and Jackson Road, Excelsior Road and Jackson Road, Excelsior Road and Florin Road, Mather Boulevard and Douglas Road, Eagles Nest Road and Jackson Road, Grant Line Road and Jackson Road, and Excelsior Road and Calvine Road (DKS 2019). Further, some intersections in the Project vicinity (i.e., South Watt Avenue and Elder Creek Road, Bradshaw Road and Jackson Road, and Grant Line Road and Jackson Road) already experience a LOS of E or F and would experience added traffic volume because of the Project (DKS 2019). Therefore, both conditions of the first tier of screening would occur so Project traffic conditions were evaluated against SMAQMD's second tier of screening.

As described in the traffic study conducted for the Project, the Project would generate a maximum of 5,909 trips during the a.m. peak hour and up to 5,651 trips during the p.m. peak hour, which are below the criteria for a single intersection (DKS 2019). Also discussed in the traffic study, the Plan Area does not support existing intersections above 10,000 vehicles during the peak hours of the day (DKS 2019). Therefore, this addition of a.m. and p.m. trips would not result in an intersection that supports traffic volumes that would exceed 31,600 vehicles per hour, even assuming all trips occurred at the same intersection in one hour. 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**.

Alternative 2

According to the traffic study conducted for the Project, which included an analysis of traffic impacts associated with Alternative 2, operation of Alternative 2 would introduce 60,755 daily trips including up to 5,630 trips during the a.m. peak hour and up to 5,589 trips during the p.m. peak hour (DKS 2019). This level of new trips would be less than the Project, which as discussed previously, would not generate additional trips that could result in an intersection supporting 31,600 or more vehicles per hour. Thus, CO impacts associated with Alternative 2 would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact: Exposure of Sensitive Receptors to TACs

Proposed Project

The exposure of sensitive receptors to TAC emissions from Project-generated construction and operational sources are discussed separately below.

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). 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, and receptors must 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 (Zhu et. al 2002). With regard 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 (OEHHA), 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 Project (OEHHA 2015:11-3). Based on the emission

modeling conducted (see Appendix AQ-1), maximum daily exhaust emissions of PM_{10}, 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 15 years. However, each individual construction activity within this 15-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 5, “Traffic and Circulation,” offsite improvements to segments of roadway along Kiefer Boulevard, Jackson Road, and Excelsior Road 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 mobile-source TACs (i.e., diesel exhaust) from increased traffic volumes evaluated in this EIR do include an evaluation of a post-Project traffic operational condition.

As the 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 Plan Area. These developments include the NewBridge Specific Plan, located to the east of the Project, the West Jackson Highway Master Plan located to the west of the Project, and the Mather South Community Master Plan, located to the northeast 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 Plan Area as well as residences at Independence at Mather approximately 800 feet north of the Plan Area. 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 Plan Area (i.e., construction does not occur year round and does not occur in any one part of the Plan Area during the 15-year buildout period), the dose of any exposure to diesel PM of any one receptor would be very limited.

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 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 frequented 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 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 62,384 daily trips (i.e., new TAC sources) traveling through 123 different intersections and multiple roadways (DKS 2019).

Further, existing traffic volumes along nearby roadways range from approximately 189 to 65,242 vehicles per day (DKS 2019:31-35). 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 7,595 to a total traffic volume of 11,870 vehicles per day on the three segments between International Road and Douglas Road (DKS 2019). These traffic volumes do not exceed 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 59.3 acres of General Commercial uses, 17.6 acres of Community Commercial use, 33.6 acres of Office use, and 100.1 acres of Educational use. 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 Jackson Road and Kiefer Boulevard. Traffic on these roads are the primary source of TACs in the vicinity, with traffic volumes ranging from 1,790 to 32,180 vehicles per day at roadway segments extending along the border of the Plan Area (DKS 2019). The mapping tool from SMAQMD's *Mobile Source Air Toxics (MSAT) Protocol* 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 (SMAQMD 2019a and CARB 2005). Traffic volumes on Jackson Road and Kiefer Boulevard do not exceed 100,000 vehicles per day, thus new sensitive receptors would not be exposed to excessive

health risk from these roadways. No other roadways in the vicinity experience volumes that exceed 100,000 vehicles per day.

The Sacramento Rendering Company operates the Sacramento Rendering Plant approximately 0.5 mile east of the Plan Area. The Plant constitutes a stationary source of pollution and is regulated by SMAQMD. Based on an HRA conducted for the Plant by SMAQMD, the cancer risk, acute non-cancer risk, and chronic non-cancer risk were evaluated for workers of the Plant and residences located within its vicinity. The HRA concludes the residences and works were exposed to concentrations far below (i.e., 0 for cancer risk, 0.0001 for acute non-cancer risk, and 0.00003 for chronic non-cancer risk, respectively) the permitting hazard index thresholds of 10.0 for cancer risk and 1.0 for acute and chronic non-cancer risk (SMAQMD 2017). These findings indicate that residences of the Plan Area would not be exposed to substantial TAC emissions from operation of the Plant that could result in an adverse health impact. 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 **significant**.

Mitigation Measure AQ-3, discussed below, would be applicable to the Project. Mitigation Measure AQ-3 would require the Project Applicant to implement project design features that would reduce the potential for exposure to substantial concentrations of TACs. Implementation of Mitigation Measure AQ-3 would be sufficient to reduce this potential. With mitigation, this impact would be **less than significant with mitigation**.

Alternative 2

Construction activities under Alternative 2 would be slightly less intensive as compared to the Project due to the decrease in overall proposed land uses. However, the activities would be similar in nature and extend over a 15-year period similar to the Project. As summarized in Table AQ-4, $PM_{2.5}$ (of which diesel PM is a surrogate) would not be expected to be more than 2 lb/day. Because construction activities would be inherently short term and emissions of $PM_{2.5}$ would be nominal, construction-related emissions of TACs would be less than significant.

The existing traffic volumes on nearby roadways have the same values as those discussed above for the Project. Based on the traffic study conducted, implementation of Alternative 2 would introduce 60,755 daily trips with 5,630 trips occurring during peak a.m. hours and 5,589 trips occurring during peak p.m. hours (DKS 2019). The largest increase in traffic volume would similarly occur on Jackson Road and Kiefer Boulevard, which would result in a range of vehicle trips between 5,580 to 32,560 (DKS 2019). Based on guidance from CARB, as well as the SMAQMD MSAT Protocol mapping tool, Alternative 2 would not site new sensitive land use uses near freeways supporting 100,000 vehicles or roadways generating high volumes of $PM_{2.5}$ (SMAQMD 2019a) and CARB 2005).

However, similar to the Project, operation of the proposed land uses under Alternative 2 could generate TAC emissions. Under Alternative 2, the build out would include 59.7 acres of General Commercial use, 16.2 Community Commercial use, 35.2 acres of Offices use, and 100 acres of Education use. Operation of these land uses could introduce new sources of diesel PM and other TACs from the operation of loading docks and movement of diesel-powered vehicles to and from these land uses. For this reason, implementation of Alternative 2 could exposure sensitive receptors to increased concentrations of TACs. This would be a **significant** impact.

Implementation of Mitigation Measure AQ-3 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 Alternative 2-generated TAC sources would not result in an increased health risk to existing levels in the Plan Area and this impact would be reduced to **less than significant with mitigation**.

Mitigation Measures

AQ-3: Before Design Review approval, the Project Applicant, its designee, or subsequent developer(s), shall implement design features to reduce TAC exposure during operation.

- Consistent with guidance in CARB's *Air Quality and Land Use Handbook,* proposed commercial and educational land uses that have the potential to emit TACs or host TAC-generating activity (e.g., loading docks that accommodate more than 100 trucks per day, more than 40 trucks with operating transport refrigeration units per day, or where transport refrigeration unit operations exceed 300 hours per week) shall be located at least 1,000 feet 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 (CARB 2005).
- Loading dock design shall 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 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.
- Plant and maintain a vegetative buffer between the truck loading/unloading facility and nearby sensitive residences, schools, and daycare facilities. As part of detailed site design, a landscape architect licensed by the California Landscape Architects Technical Committee shall identify all locations where trees should be located, accounting for

areas where shade is desired such as along pedestrian and bicycle routes, the locations of solar photovoltaic panels, and other infrastructure.

IMPACT: CONSISTENCY WITH AN APPLICABLE AIR QUALITY PLAN

PROPOSED PROJECT

In 1994, SMAQMD established a Clean Air Plan, or SIP, for attaining the federal 1-hour ozone standard in the Sacramento Air Basin (SMAQMD 1994). This plan includes assumptions and allowances for growth and development in the region and details the control measures and Best Management Practices that must be used for the region to make progress toward attainment. The 1994 Clean Air Plan has been updated numerous times since its promulgation. The most recent update to the Clean Air Plan is the 2017 *Sacramento Regional 2008 NAAQS 8-Hour Ozone Attainment and Reasonable Further Progress Plan*, which addresses attainment of the federal 8-hour ozone standard (SMAQMD 2017). The 2015 Triennial Report and the 2016 Annual Progress Report address the attainment of the State ozone standard. The current SIP is based on the 2016 MTP/SCS; however, the land use pattern in the 2016 and current MTP/SCS show the Plan Area as a "developing community" and "blueprint growth footprint not identified for development in the MTP/SCS planning period."

Until 2017, Sacramento County was in nonattainment for the $PM_{2.5}$ standard. Following the development of the *$PM_{2.5}$ Implementation/Maintenance Plan and Redesignation Request for the Sacramento $PM_{2.5}$ Nonattainment Area*, EPA declared on May 10, 2017 that Sacramento County had achieved attainment.

The Project would develop a residential/mixed-use community. The Project is within the jurisdiction of SMAQMD and, therefore, would be required to comply with the regulatory plans of SMAQMD with respect to air quality. According to SMAQMD, development projects that exceed emissions of 85 lb/day of NO_X, 80 lb/day of PM_{10}, and 82 lb/day $PM_{2.5}$ during construction activities or 65 lbs/day of ROG and NO_X, 80 lb/day of PM_{10}, and 82 lb/day of $PM_{2.5}$ during operational activities would have the potential to obstruct the success of the regional ozone and PM attainment plans and, therefore, would be considered significant and require mitigation.

The existing standards and mitigation have been established based on the underlying targets and assumptions of the SIP; however, the SIP is tied to a "motor vehicle emissions budget," and growth in the Plan Area was not included as part of the growth assumptions when developing the budget. As a result, SMAQMD has indicated that even if the Project included standard mitigation and met the current operational significance thresholds, a significant impact would still occur (SMAQMD 2016). It is for this reason that an increased requirement for operational ozone precursor emissions reductions, from 15 percent for projects included in the SIP and 35 percent for projects not included in the SIP, has been recommended by SMAQMD.

Emissions of ROG and NO_X from construction and operational activities are discussed in detail in the previous impacts. Construction and operational activities are anticipated to exceed SMAQMD mass emission thresholds for several pollutants; therefore, the Project's construction and operational impacts would be considered significant. Mitigation Measures AQ-1a and AQ-1b would reduce emissions of criteria pollutant and

ozone precursors to less-than-significant levels through application of best management practices to reduce fugitive dust emissions, exhaust control measures, and participation in SMAQMD's off-site mitigation program. Mitigation Measure AQ-2a requires that the Project Applicant prepare an AQMP; however, even with the incorporation of Project design features and mitigation measures contained in the AQMP, the operation of the Project is anticipated to emit NO_X and PM_{10} at levels above the 65 lb/day and 80 lb/day thresholds, respectively. Furthermore, even if the Project fell below the thresholds, emissions would still be significant because the Project was not assumed in the current SIP. Therefore, the Project has the potential to obstruct the success of regional ozone attainment and would result in a **significant** impact.

Mitigation Measure AQ-4 would be applied to the Project, which requires that the Project Applicant implement Mitigation Measures AQ-1a, AQ-1b, and AQ-2a. Application of the provisions of Mitigation Measures AQ-1a and AQ-1b would reduce construction emissions to below SMAQMD's thresholds of significance; however, Mitigation Measure AQ-2a would not produce sufficient reductions in NO_X and PM_{10} such that the SMAQMD operational mass emissions thresholds would be met. Based on SMAQMD guidance, projects that emit criteria air pollutants and ozone precursors in exceedance of these thresholds would have a cumulatively considerable impact to regional air quality and would not be consistent with regional or statewide plans (e.g., SIP). Thus, following implementation of Mitigation Measure AQ-4, this impact would be **significant and unavoidable**.

ALTERNATIVE 2

Alternative 2 would be beholden to the same air quality plans mentioned in the discussion of the Project above. Because operational emissions of NO_X and PM_{10} would exceed SMAQMD's operational mass emissions thresholds, Alternative 2 would not be consistent with local plans to improve air quality. As such, this impact would be **significant** for the same reasons identified for the Project.

Implementation of Mitigation Measure AQ-4 would require that Alternative 2 implement Mitigation Measures AQ-1a, AQ-1b, and AQ-2b. Mitigation Measures AQ-1a and AQ-1b would reduce emissions below SMAQMD's construction mass emissions thresholds; however, while emissions would be reduced to meet the 35 percent reduction target required by SMAQMD through implementation of Mitigation Measure AQ-2b, reductions would not be sufficient to lower emissions below SMAQMD's mass emissions for operational activities. This impact would be **significant and unavoidable**.

MITIGATION MEASURES

AQ-4: The Project Applicant, or subsequent developer(s), shall implement Mitigation Measures AQ-1a, AQ-1b, AQ-2a, and AQ-2b to reduce emissions to the extent feasible.

IMPACT: EXPOSURE TO OBJECTIONABLE ODORS

PROPOSED PROJECT

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.

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 the 15-year buildout period, these types of odor-generating activities would not occur at any single location, or within proximity to off-site receptors, for an extended period. Existing sensitive receptors include residences located on nonparticipating properties and off-site rural residences located approximately 500 feet to the east of the Plan Area. Given the temporary and intermittent nature of construction activities within specific locations in the Plan Area (i.e., construction does not occur in any one part of the plan area during the 15-year buildout period), and that the prevailing wind direction is from the south, which would likely keep odor emissions away from adjacent land uses to the east, 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 under the Project would include diesel-fueled delivery trucks visiting loading docks at commercial land uses. Land uses developed under the Project (e.g., commercial) 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 Plan Area.

The Kiefer Landfill is a potential odor source to the Plan Area, which is located approximately 4 miles to the east. Based on the SMAQMD recommended screening distance of 1 mile for landfills, the Plan Area is outside the buffer zone. In addition, prevailing winds in the area are from the south and west 95 percent of the time, so odors from the landfill would be blown in the opposite direction from the Plan Area. Thus, residents of the Plan Area would not be subject to adverse odors related to landfill operations.

The Sacramento Rendering Company operates the Sacramento Rendering Plant approximately 1 mile east of the Plan Area. The primary air pollutants emitted from rendering operations are VOCs, which readily become gas and generally have strong odors. 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. Data provided by SMAQMD shows approximately 1,500 complaints have been made since 1992 with at least 650 complaints occurring since 2017 (SMAQMD 2019c).

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.

SMAQMD has a Recommended Odor Screening Distances table for lead agencies to use when siting new receptors within the vicinity of an existing source of odor. SMAQMD specifically recommends a 4-mile buffer between a rendering plant and a new sensitive land use. However, SMAQMD also notes that if “the receptor would be upwind from the source, the likelihood of the receptor being exposed to objectionable odors would be lower than if it was downwind from the odor source” (SMAQMD 2016). As discussed in the environmental setting, the predominant wind direction is from the south (WRCC 2002). The rendering plant is located east of the Plan Area. As such, despite the Plan Area being located closer than the recommended 4-mile buffer zone (i.e., approximate 1 mile), it is likely the meteorology of the Plan Area would minimize potential odor impacts from occurring.

In its opinion in *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369, the California Supreme Court addressed the issue as to whether CEQA requires analysis of the effect of the existing environment on the residents and users of a proposed project, in this instance, future residents, workers, students, and other users of the Plan Area. In answering this question, the Court held that “agencies subject to CEQA generally are not required to analyze the impact of existing environmental conditions on a project’s future users or residents. But when a proposed project risks exacerbating those environmental hazards or conditions that already exist, an agency must analyze the potential impact of such hazards on future residents or users.”

Odors from the Sacramento Rendering Plant are part of the existing environment in the Plan Area. Residential and commercial land uses would not generate activity that would exacerbate this existing odor impact because no changes to the facility are proposed. Nonetheless, on remand from the California Supreme Court, the First District Court of

Appeal limited the scope of potential application of the Supreme Court's opinion concerning voluntary analysis by public agencies of environmental conditions on end users. It agreed that "while CEQA does not generally require an evaluation of existing conditions upon future occupants or users of a proposed project, a public agency retains the discretion to make such an evaluation when conducting an analysis of its own project." Therefore, while not strictly required to do so, Sacramento County opts to evaluate and draw significance conclusions with respect to impacts of existing odor sources on future residents and visitors.

The Sacramento Rendering Plant collects three types of meat waste: trimmings from grocery store butchers, used cooking grease from 4,500 Sacramento area restaurants, and deceased livestock from California's border with Oregon down to Fresno. Meat byproducts are recycled, ground up, and cooked to produce dog food, poultry feed, tallow, and biodiesel. Typical odors associated with these activities are commonly compared to spoiled meat and decaying carcasses, which can cause headaches and nausea.

An odor study was conducted for the Project in 2015 to assess the potential for adverse odor impacts to occur to residents of the Plan Area. The study found that the emissions controls implemented at the Sacramento Rendering Plant in 2004 reduced the number of odor complaints by nearly a factor of 10. The study also found that, as mentioned previously, the wind direction and frequency indicate that odors are 10 times more likely to be detected at existing housing east of the rendering plant than that proposed under the Project (Kleinfelder 2015) With the prevailing winds from the south and west 95 percent of the time, though exposure of people within the Plan Area to objectionable odors is possible during rare periods when the wind direction shifts, it is unlikely. Furthermore, as discussed in Chapter 21, "Summary of Impacts and Their Disposition," the Sacramento Rendering Plant may be relocated pending the approval of the NewBridge Specific Plan, which would be constructed within a similar timeframe as the Project or Alternative 2. Under such conditions, the existing Sacramento Rendering Plant would be demolished and relocated more than 4 miles from Plan Area; a distance greater than the air district's recommended odor buffer. This scenario would negate the applicability and necessity of mitigating odor impacts related to the operation of the Sacramento Rendering Plant. For these reasons, this impact is **less than significant**.

Alternative 2

Although Alternatives 2 differs from the Project in its mix of land uses, the location would be the same as that of the Project. Alternative 2 would similarly be located within the 4-mile buffer zone to the existing Sacramento Rending Company's Rendering Plant (i.e., 1 mile to the west) recommended by SMAQMD, but the prevailing winds would move odors away from the Plan Area. This impact is **less than significant**.

Mitigation Measures

No mitigation is required.

7 AIRPORT COMPATIBILITY

INTRODUCTION

Mather Airport is located approximately 1 mile northwest of the Plan Area. For development near airports, special considerations are taken into account to address potential land use conflicts related to airport operations and the surrounding uses. This chapter examines the compatibility of the Project or Alternative 2 with Mather Airport and identifies applicable regulations and policies affecting the Plan Area, as well as potential impacts related to airport safety and noise, and the Project's consistency with the Mather Airport Comprehensive Land Use Plan.

Comments on airport compatibility were provided in response to the Notice of Preparation, including potential for conflict with Mather Airport's planning documents. These concerns are addressed below, as appropriate.

ENVIRONMENTAL SETTING

AIRPORT LAND USE COMPATIBILITY PLANNING

Airport land use compatibility plans (ALUCPs), formerly called comprehensive land use plans (CLUPs), include policies and regulations to address the issues of airport noise and safety, with the intent of protecting airport operations from encroachment by incompatible land uses, as well as protecting citizens on the ground from the impacts of excessive noise and the potential for aircraft accidents. Under provisions of the California Public Utilities Code, Chapter 4, Article 35, Section 21670.1, Airport Land Use Commission Law, the Sacramento Area Council of Governments (SACOG) has been designated the Airport Land Use Commission (ALUC) for Sacramento, Sutter, Yolo and Yuba counties.

ALUCPs and CLUPs regulate land use in three major areas: safety zones, noise zones, and height restrictions. These restrictions are defined below. The Plan Area is subject to safety zones, noise zones, and height restrictions established in the Mather Airport CLUP, as described in the Regulatory Setting.

SAFETY ZONES

The probability of airplane accidents is highest in the immediately vicinity of airports. Consequently, safety zones are delineated around airports and restrict land use. There are three safety zones: 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 the least restrictive. The densities of land uses allowed in these zones are inversely related to probability of an accident in the zone.

Noise Zones

The community noise equivalent level (CNEL) is used to describe cumulative noise exposure for an annual-average day of aircraft operations. The CNEL is calculated by mathematically combining the number of single events that occur during a 24-hour day with how loud the events were and what time of day they occurred. The CNEL includes penalties applied to noise events occurring after 7:00 p.m. and before 7:00 a.m., when noise is considered more intrusive. The penalized time period is further subdivided into evening (7:00 p.m. through 9:59 p.m.) and nighttime (10:00 p.m. to 6:59 a.m.). When a noise event occurs in the evening, a penalty of 4.77 decibels (dB) is added to the nominal sound level (equivalent to a threefold increase in aircraft operations). A 10 dB penalty is added to nighttime noise events (equivalent to a tenfold increase in aircraft operations). Because of the interrelationship between the weighted number of daily noise events and the noise levels generated by the events, it is possible to have the same CNEL value for an area exposed to a few loud events as for an area exposed to many quieter events.

Noise that emanates away from airstrips and airplane flight paths is represented by concentric noise contours around the airport referred to as Theoretic Capacity Noise Contours. The contours delineate zones where land use is restricted, protecting citizens from the detrimental effects of exposure to excessive airplane noise. The contours are constructed using the Federal Aviation Administration (FAA) Integrated Noise Model. 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.

Height Restrictions

Buildings surrounding airports are prohibited from intruding into aircraft airspace except when permitted by the California Department of Transportation, Division of Aeronautics. Compliance with the height restrictions is tested by comparing the height of proposed projects with an imaginary surface surrounding each airport.

Mather Airport

Mather Airport is located within the unincorporated area of Sacramento County. The airport encompasses 2,253 acres and is surrounded by a mix of residential, commercial, industrial, and open land uses, including the Mather Preserve. Mather Airport was originally established in 1918 as Mather Air Force Base, a military base and pilot training school. The base went through a series of changes but continued to operate under the military until 1988 when the U.S. Department of Defense decided to close it. The property was transitioned via lease to Sacramento County and officially reopened in May 1995 as Mather Airport, a civilian airport. In 2012, the property was purchased by the County of Sacramento. However, the airport continues to receive federal funding and limited military use continues.

The 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, approximately 6 acres of aircraft storage and maintenance hangars, and about 1 acre (49,000 square feet) of office space. The northern of the two runways is 6,040 feet long and 150-feet wide; the southern runway is 11,301 feet long and 150 feet wide. The majority of these facilities were constructed when the site was an active Air Force base. Mather Airport

currently accommodates the United Parcel Service for cargo services; regional general aviation demand, including corporate general aviation, recreational general aviation; and air taxis. Mather Airport's general aviation aircraft are primarily used for corporate, government, and recreational purposes (Sacramento County Department of Airports 2013).

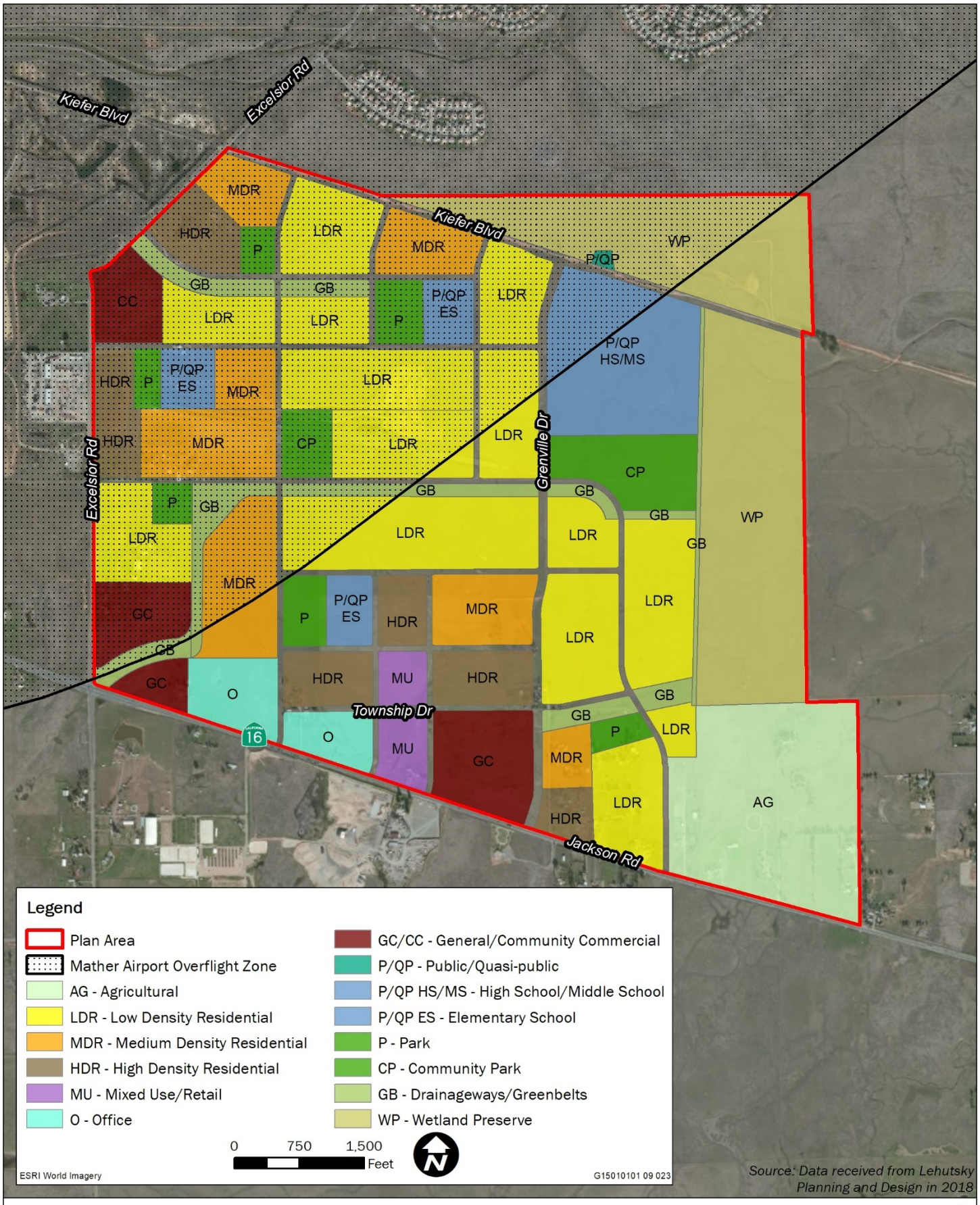
According to the Mather Airport Airline Landing statistics, Mather Airport saw 3,110 landings in 2013; 2,997 landings in 2014; 3,168 landings in 2015; 3,222 landings in 2016; and 3,394 landings in 2017. Mather Airport typically receives somewhere between 230 to 280 landings a month, with the majority of these being cargo planes. December typically has increased landings (375 to 450 landings) (Sacramento County Department of Airports, 2014-2017). The majority of cargo operations occur during the evening and early morning hours at low-level overflights. Military operations consist of touch and go (take-off and landing operations), in which Air Force T-38 jet fighters are used. These aircraft are small, single-engine supersonic aircraft, which are quite loud. Touch and go operations occur at low level flight decks generally between 1,500 and 3,500 feet. Approximately 88 percent of all aircraft operations occur on the southern runway.

MATHER AIRPORT LAND USE PLANNING

Mather Airport has a CLUP, adopted in by the ALUC Board in1997, provides land use compatibility guidelines. The CLUP also establishes planning boundaries for safety zones (see Plate AC-1), noise (see Plate AC-2), and height restrictions (see Plate AC-3). As illustrated in Plate AC-1, a portion of the Plan Area is within the overflight zone, which imposes height restrictions on any development within the zone. Note that the CLUP is currently being updated as an ALUCP by the ALUC and is expected to be completed in 2021. As shown in Plate AC-2, the Plan Area is located within the 45 CNEL, 50 CNEL, and 55 CNEL Theoretic Capacity Noise Contours, but entirely outside of the 60 CNEL Theoretic Capacity Noise Contour. As explained above, these contours delineate zones with differing capacity, or ability to accommodate land uses, without exposing people to excessive airplane noise. The exposure maps are based on theoretical flight tracks, rather that radar data, and represent the "theoretic capacity" of the area. 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 in 2006. 2030 General Plan policies related to new residential development within the APPA were also adopted at that time. The Plan Area is within the APPA. The CLUP and the APPA are discussed in greater detail below.

NIGHTTIME AWAKENINGS AND SINGLE EVENT NOISE LEVELS

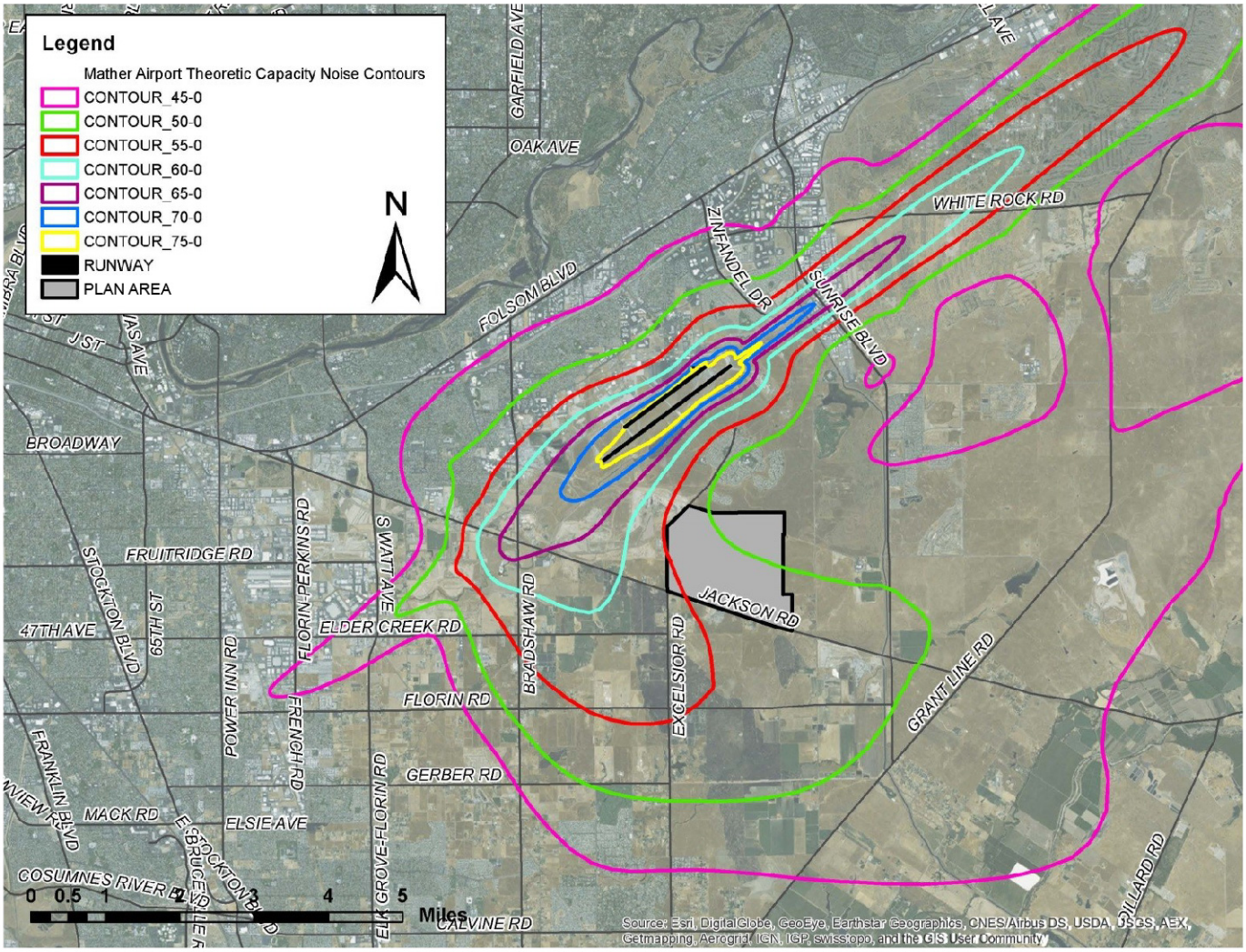
The Environmental Impact Report for the Mather Airport Master Plan (Sacramento County 2014) includes a technical analysis of the percentage of population residing in the areas around Mather Airport potentially awakened by aircraft noise. The portion of population potentially awakened under the 2012 Existing Conditions scenario is shown on Plate AC-4 (note: areas with no existing population were not assigned a potential for awakenings and appear white). Under existing conditions, 4.1–7.0 percent of the population of the Plan Area is estimated to be potentially awakened by existing airport operations. The analysis concludes 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.



Source: Data received from Lehutsky Planning and Design in 2018

Plate AC-1: Mather Airport Safety Zones in the Plan Area

ASCENT ENVIRONMENTAL



Source: Image provided by Sacramento County in 2018

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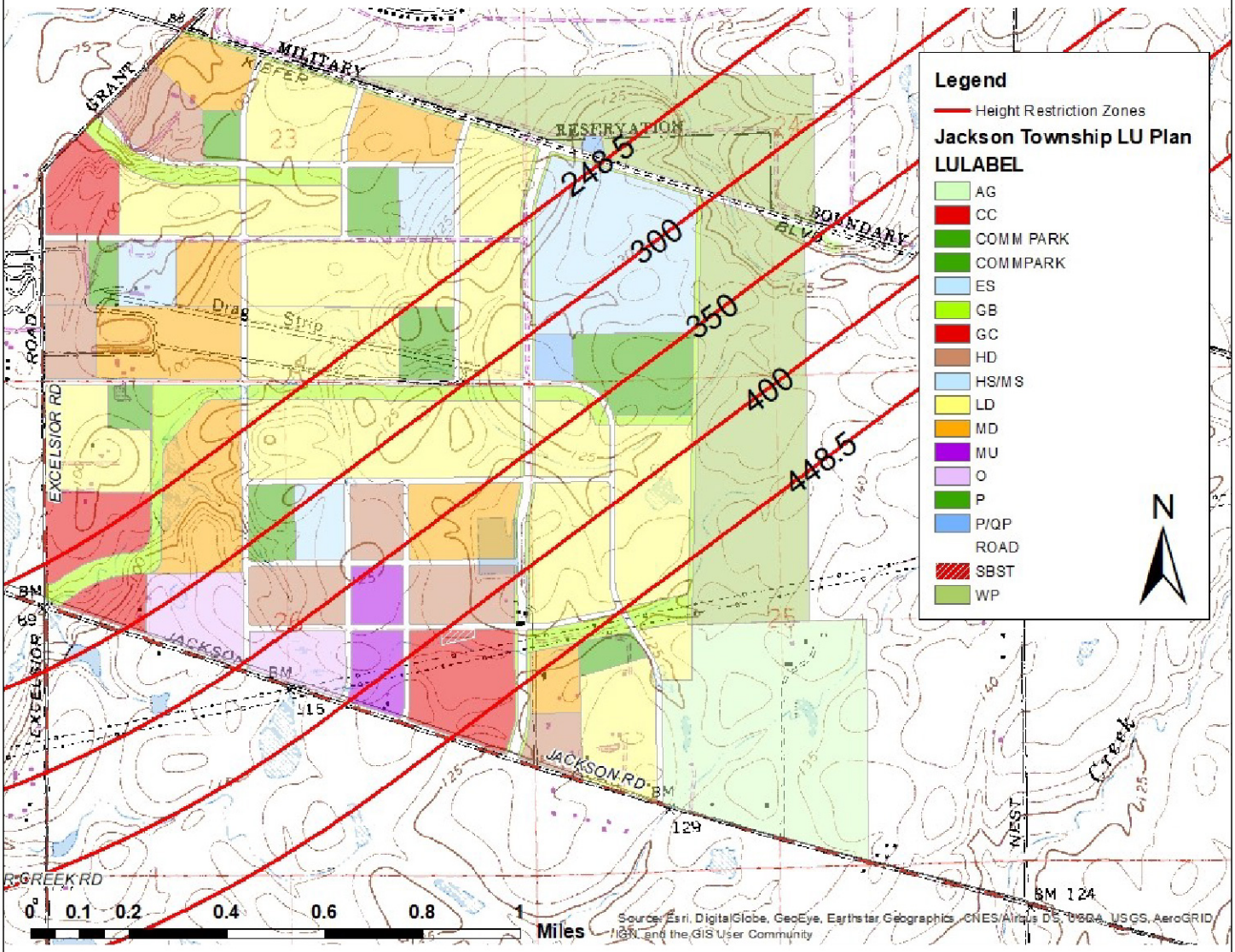
Plate AC-2: Mather Airport Theoretic Capacity Noise Contours

ASCENT ENVIRONMENTAL



Source: Image provided by Sacramento County in 2018

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Plate AC-3: Mather Airport Height Restrictions with Proposed Land Uses

ASCENT ENVIRONMENTAL

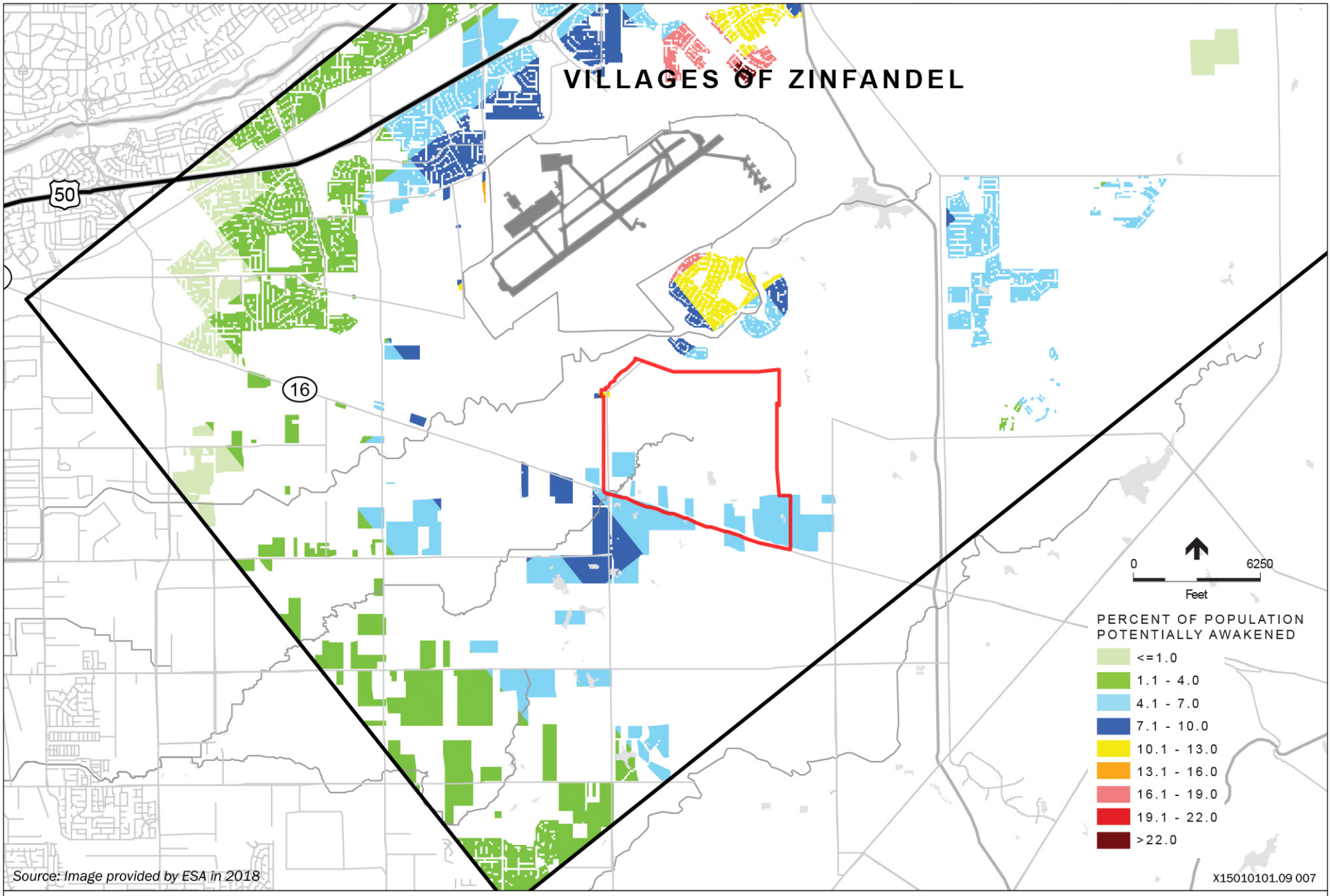


Plate AC-4: Population Potentially Awakened by Aircraft Noise from Mather Airport

ASCENT ENVIRONMENTAL

REGULATORY SETTING

FEDERAL

FEDERAL AVIATION ADMINISTRATION REGULATIONS

Federal Regulation Title 14 Part 77 establishes standards and notification requirements for objects affecting navigable airspace. Notification serves as the basis for FAA to:

- Evaluate the effect of the construction or alteration on operating procedures
- Determine the potential hazardous effect of the proposed construction on air navigation
- Identify mitigating measures to enhance safe air navigation
- Chart new objects.

Notification allows the FAA to identify potential aeronautical hazards in advance, thus preventing or minimizing the adverse impacts to the safe and efficient use of navigable airspace. Any person or organization who intends to sponsor any of the following construction or alterations must notify the Administrator of the FAA:

- Any construction or alteration exceeding 200 feet above ground level
- Any construction or alteration:
    - within 20,000 feet of a public use or military airport which exceeds a 100:1 surface from any point on the runway of each airport with at least one runway more than 3,200 feet.
    - within 10,000 feet of a public use or military airport which exceeds a 50:1 surface from any point on the runway of each airport with its longest runway no more than 3,200 feet.
    - within 5,000 feet of a public use heliport which exceeds a 25:1 surface
- Any highway, railroad or other traverse way whose prescribed adjusted height would exceed that above noted standards
- When requested by the FAA
- Any construction or alteration located on a public use airport or heliport regardless of height or location

WILDLIFE ATTRACTANTS

On August 28, 2007, the FAA released a revised Advisory Circular for Hazardous Wildlife Attractants On or Near Airports (AC 150/5200-33B) that, among other things, addresses stormwater detention facilities as potential hazardous wildlife attractants. According to the FAA, all stormwater facilities located within 10,000 feet of all airports' operations areas must drain within 48 hours of the design storm. Furthermore, for a 5-

mile radius (nearly 20 square miles) the Advisory Circular discourages hazardous wildlife attractants, including detention basins that do not drain within 48 hours.

STATE

STATE AIRPORT LAND USE POLICY

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 objectives of the Airport Land Use Commission Law are to:

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

Under the provisions of the law, the ALUC is required to prepare an ALUCP for each public airport within its jurisdiction. The ALUCP or CLUP must be based on either a 20-year master plan or an airport layout plan if the Caltrans Division of Aeronautics decides that the existing airport layout plan is adequate for use in ALUCP/CLUP preparation.

State law requires that General Plans be made consistent with adopted ALUCPs and/or CLUPs. Consistency can be achieved through either of the following actions:

- Amending general/community plan elements and other land use regulations, where necessary, to be consistent with the ALUCP/CLUP, or prevent the encroachment of incompatible uses around public-use airports, thereby preserving the utility of these airports into the future; or
- In the event the Board of Supervisors does not agree with a provision of the plan, it can satisfy the consistency requirement for that provision by overruling the ALUC by a two-thirds vote. The overruling must, however, be made after a public hearing and must be based on specific findings that the proposed actions are consistent with the purposes of the Airport Land Use Commission Law.

Once consistency is achieved between the ALUCP/CLUP and County land use controls through either of the above two methods, 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 2030 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 the 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.

CALIFORNIA EDUCATION CODE

The Education Code includes provisions that apply to prospective school sites near airports. Section 39005 requires that school boards notify the Department of Education prior to acquiring title to property within 2 miles of an airport. The Department of Education then works with the Department of Transportation to investigate the proposed

school site and presents recommendations concerning acquisition of the site to the board. Section 81036 sets forth similar requirements specific to community colleges.

LOCAL

MATHER AIRPORT COMPREHENSIVE LAND USE PLAN

The current Mather Airport CLUP was adopted by the ALUC Board on May 15, 1997. The CLUP established new 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 1993 General Plan that included the Mather Airport CLUP. As mentioned above, the ALUC is in the process of updating the CLUP with an ALUCP.

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-1 depicts the adopted safety zones for Mather Airport. As shown, approximately half of the 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 than the Overflight Zone. 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 lowest for the Overflight Zone.

All residential uses are permitted within the Overflight Zone. Some non-residential uses associated with gatherings of large numbers of people are generally prohibited in the Overflight Zone, including regional shopping centers, colleges and universities, hospitals, jails, stadiums, large movie theaters, auditoriums, and racetracks. Some industrial and manufacturing uses are also prohibited in the Overflight Zone, such as those associated with chemicals and allied products, petroleum refining, and rubber and plastics.

MATHER AIRPORT NOISE CONTOURS

Noises generated from aircraft operations can be bothersome to the public. The Mather Airport CLUP defines airport noise contours and land uses that are incompatible with noises 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 air craft operations. Uses outside of these contours are not restricted.

The Board of Supervisors, by Resolution 2006-1378, revised the Theoretic Capacity Noise Contour for 60 CNEL in 2006. As shown in Plate AC-2, the Plan Area is located entirely outside of the 60 CNEL contour.

MATHER AIRPORT HEIGHT RESTRICTIONS

As shown in Plate AC-3, the majority of the Plan Area is subject to height restrictions; building heights cannot exceed the height above mean sea level shown in the plate.

Elevations in the Plan Area range from approximately 75 feet above mean sea level in the west to approximately 145 feet above mean sea level in the east.

Mather Airport Planning Policy Area

In 2006, Sacramento County adopted the Mather 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 includes the following conditions:

1. Prohibit new residential development inside the current Board-approved 60 CNEL noise contour for MHR.
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 Airport Planning Policy Area 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 Airport Planning Policy Area and shall grant the right of flight and unobstructed passage of all aircraft into and out of the appropriate airport.

    Exceptions: New accessory residential dwellings on parcels zoned Agricultural, Agricultural Residential, Interim Agricultural, Interim General Agricultural, or Interim Limited Agricultural, shall be exempt from the Airport Planning Policy Area's prohibitions.

The entire Plan Area is within the Mather APPA, but outside of the 60 CNEL noise contour. Therefore, Condition 2 applies to the Project.

Sacramento County 2030 General Plan

The following 2030 General Plan policies pertaining to airport compatibility are 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*.

For context, an abbreviated version of Table 4 is included below as Table AC-1. The table has been modified to display only land uses that would be built as part of the Project. For the full table, see Table 4 of the 2030 General Plan.

Table AC-1: Land Use Compatibility for Airport Noise[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 that would be built as part of the Project. For the full table see Table 4 of the 2030 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: 2030 General Plan Noise Element (2017)

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.

COMMUNITY PLANS

CORDOVA COMMUNITY PLAN

The Cordova Community Plan, which was last updated in 2003, provides guidance for both new development and the redevelopment of existing land uses within the community planning area. Objectives identified in the plan that are applicable to the Project include:

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

VINEYARD COMMUNITY PLAN

The Vineyard Community Plan, which was developed in 1985, provides guidance for growth and development in the community planning area. Policies identified in the plan that are applicable to the Project include:

CI 5. Employment intensive industrial/commercial development will be opposed within the Mather Air Force Base accident potential zones (APZ's).

IMPACTS AND ANALYSIS

SIGNIFICANCE CRITERIA

Based on the CEQA Guidelines, an airport compatibility impact is significant if implementation of the Project 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 change air traffic patterns. Therefore, this impact will not be further analyzed in this EIR.

Methodology

The following analysis is based on review of the development proposed as part of the Project, as outlined in the Jackson Township Specific Plan land use diagram, Development Standards (Appendix A of the Jackson Township Specific Plan), and Design Guidelines (Appendix B of the Jackson Township Specific Plan), and consistency with applicable regulations and planning documents.

Impact: Safety Hazards to People Living and Working in the Vicinity of an Airport

Proposed Project

As discussed above, the Mather Airport CLUP establishes airport safety zones to minimize the number of people exposed to aircraft crash hazards. There are no portions of the Plan Area located in the Clear Zone or the Approach/Departure Zone. According to the CLUP, a portion (42 percent) of the Plan Area is located within the Overflight Zone, which is the least restrictive on land use development (refer to Plate AC-1). Proposed land uses within the Overflight Zone include low, medium, and high density residential; a portion of the wetland preserve, five park sites, two greenbelts, two schools, the joint high school/middle school site, the Village Center, and other commercial uses. The school sites would be subject to the review detailed in the Education Code. The Town Center and all industrial uses would be located outside of the Overflight zone. None of the restricted uses cited in the CLUP land use compatibility table are proposed within the area located within the Overflight Zone. (Note, however, that the wetland preserve is compatible only if it does not result in the possibility of the water area causing ground fog or bird hazard. This is discussed further below.)

Risks associated with living within the Overflight Zone are slightly elevated over areas outside of the zone, simply because aircraft would routinely be in the area. The CLUP based the configuration of the Overflight Zone on safety considerations and determined that working and living within the Overflight Zone is safe overall. The entire Plan Area is located within the APPA. All residential development within the APPA must be 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. All properties also must be conditioned with an avigation easement.

Because proposed development in the Plan Area would be consistent with the uses allowed in the Overflight Zone and homebuyers would be notified that the property is located within the APPA and that aircraft operations occur within the area, the Project does not create substantial safety hazards to people living and working in the vicinity of an airport; this impact would be **less than significant**.

Alternative 2

Alternative 2 would swap the Community Commercial and Medium Density Residential locations that are proposed within the Overflight Zone. Both land uses would continue to be compatible with the Overflight Zone, and there would be no additional land use changes. Alternative 2 would not create substantial safety hazards to people living and working in the vicinity because proposed land uses would be compatible with the Overflight Zone. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact: Exposure to Excessive Noise Levels Associated with Airport Operations

Proposed Project

The Plan Area is approximately 1 mile from Mather Airport and is entirely outside of the 60 CNEL noise contour. However, the entire Plan Area is subject to noise generated from airport operations. As shown in Plate AC-2, the majority (73 percent) of the Plan Area is located within the 50 CNEL and 45 CNEL (24 percent) noise contours, and a small portion (3 percent) in the southwest corner is within the 55 CNEL noise contour. There are no land use restrictions within these noise contours associated with the CLUP, and these levels are within adopted 2030 General Plan noise standards. However, the entire Plan Area is within the Mather APPA, which requires a condition be placed on all residential development to include noise insulation that reduces interior noise levels to 45 dB CNEL or less. 2030 General Plan Policy NO-4 reiterates this APPA requirement. This condition has been placed on the Project as a condition of approval to ensure it is adhered to. Therefore, impacts related to airport noise levels are **less than significant**.

Alternative 2

Alternative 2 would result in modification of the land use plan to accommodate a larger wetland preserve; regardless, the entire Plan Area is located outside of the 60 CNEL noise contour, but within the APPA. Alternative 2 would also be implemented in a manner consistent with the APPA and 2030 General Plan, including the use of noise insulation. Impacts would be **less than significant**.

Mitigation Measures

No mitigation is required.

IMPACT: EFFECTS ON SAFE AND EFFICIENT USE OF NAVIGABLE AIRSPACE

PROPOSED PROJECT

BUILDING HEIGHT RESTRICTIONS

The CLUP includes height standards for buildings surrounding the airport. Navigable airspace could be adversely affected if building heights in the Plan Area exceed these designated height standards. The height restrictions that apply to the Plan Area are between 248.5 feet to 448.5 feet above mean sea level. Plate AC-3 illustrates the specific height restrictions that apply to the Plan Area and associated land uses proposed for the Project. Elevation within the Plan Area ranges between roughly 75 and 145 feet above mean sea level. The maximum building height allowed by the proposed Development Standards (Appendix A of the Jackson Township Specific Plan) would be set by the County's zoning ordinance or the CLUP, whichever is more restrictive.

BIRD STRIKE HAZARDS

Navigable airspace can also be adversely affected by Project features that could attract wildlife, causing bird strike hazards. The majority of known wildlife strikes at Mather Airport are associated with unknown small bird species, followed by raptors. Approximately 3 percent of bird strikes were caused by avian species associated with aquatic habitats in 2015 (Foothills Associates 2015).

The Project would include area for wetland preserve, and greenbelt and drainage corridors. These habitat conditions are currently present on the site. The Project also includes the creation of flood detention basins. According to the FAA Advisory Circular 150/5200-33B, these facilities should either drain within 48 hours or should be designed with steep non-vegetated slopes to detract wildlife if they are within 10,000 feet of an airport. The advisory also discourages the placement of wildlife attractants within 5 miles of approach/departure zones and suggests similar design measures. Roughly the western half of the Plan Area is within 10,000 feet of Mather Airport. The Project includes one detention basin on the North Drainage Way and three detention basins on the Central Drainage Way. The basins would be designed to accommodate the 100-year storm event and retain stormwater run-off. Each basin is designed to hold water for periods longer than 48 hours to meet stormwater quality requirements. The wet portions of the proposed basins have a combined area of approximately 3.2 acres.

Considering most of the land within the Plan Area is currently agricultural grazing land and open space containing non-native grasslands, wetlands, ponds, irrigated pasture, marsh habitat, and a tributary to Morrison Creek, the site currently has substantial existing wildlife attractants, including aquatic resources and foraging habitat. The Project would develop the majority of the Plan Area by converting non-native grassland and some seasonal aquatic habitat to residential, commercial, and public use development and removing irrigated pasture and ponds, which would reduce wildlife habitat and attractants to the area. The 214-acre wetland preserve would be left in its current natural state. The drainage corridors would be engineered channels that divert flows from their naturalized drainage channels. Although these North and Central Greenbelts may include detention ponds that would hold water in excess of 48 hours

within 10,000 feet of Mather Airport, the addition of 3.2 acres of detention ponds is not anticipated to substantially affect the potential for bird strike hazards because approximately 30 acres of similar wildlife attractant features would be removed from the Plan Area. In addition, while some of the Wetland Preserve north of Kiefer Road would be within 10,000 feet of Mather Airport, most of this natural area would be on the far eastern edge of the Plan Area and would not affect the potential for bird strikes. Overall, with implementation of the Project there would be a net reduction in wildlife attractants in the Plan Area, resulting in no substantial effect on navigable airspace. Moreover, the FAA guidelines for wildlife attractants are advisory in nature and inconsistency would not necessarily affect use of the airspace.

CONCLUSION

The Project includes Development Standards and Guidelines that encourage consistency with the CLUP. The effect on safe and efficient use of navigable air space remains **potentially significant**, however, because the details of subsequent development under the Project are not known.

With implementation of Mitigation Measure AC-1, upon acceptance of completed applications for development within the Plan Area, the County would send the Project information to the ALUC for consistency review. SACOG staff would identify the land use compatibility standards that apply to the Project and determine whether the Project is compatible, compatible subject to specific conditions, or incompatible. A formal consistency review would be subsequently transmitted to the County. If the Project is determined to be incompatible with the CLUP, it cannot be approved by the County unless action is taken to overrule the ALUC determination. The overrule action is subject to the requirement for making specific findings. This review process would ensure that development would not interfere with the safe and efficient use of navigable air space.

The Project would not result in a substantial adverse effect to the safe and efficient use of navigable airspace by aircraft due to either excessive building heights or the potential for increases in bird strikes. Therefore, Project-related impacts to navigable airspace would be **less than significant with mitigation**.

ALTERNATIVE 2

The height of structures under Alternative 2 would also be governed by the zoning code or CLUP restrictions, whichever is more conservative, and would be verified through SACOG review. Further, although Alternative 2 would increase the amount of land designated for wetland preserve, development of the Plan Area would result in a net reduction of wetland features with the potential to serve as wildlife attractants.

Alternative 2 also includes Development Standards and Guidelines that encourage consistency with the CLUP. The effect on safe and efficient use of navigable air space remains potentially significant, however, because the details of subsequent development under the Project are not known. With implementation of Mitigation Measure AC-1, upon acceptance of completed applications for development within the Plan area, the County would send the Project information to the ALUC for consistency review. This review process would ensure that development would not interfere with the

safe and efficient use of navigable air space. The impact on navigable airspace would be **less than significant with mitigation**.

MITIGATION MEASURES

AC-1: Upon acceptance of a complete application for development within the Plan Area, staff from the Sacramento County Office of Planning and Environmental Review shall transmit the completed Project application to the ALUC.

8 BIOLOGICAL RESOURCES

INTRODUCTION

This chapter identifies and analyzes impacts to biological resources that could occur as the result of the Project or Alternative 2. 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.

One letter in response to the NOP requested that the EIR address habitat conservation for several special status species and stated that if the Project requires compensatory mitigation, then additional environmental analysis on the impacts of the mitigation should be included.

The biological resource information is based on review of available background reports; previous studies conducted on or near the Plan Area, biological resource databases, the 2030 General Plan (Sacramento County 2011), and the Final South Sacramento County Habitat Conservation Plan (SSHCP) (Sacramento County et al. 2018). Background reports and databases reviewed include the following:

- Final Biological Resources Assessment, ±1,367-Acre Jackson Township Specific Plan Area, Sacramento County, California (Foothill Associates 2015);
- Rarefind California Natural Diversity Database Species List for the Carmichael, Buffalo Creek, Florin, Rio Linda, Citrus Heights, Folsom, Sacramento East, Elk Grove, and Sloughouse 7.5-minute quadrangles (CNDDB 2018);
- California Native Plant Society Inventory of Rare and Endangered Plants for the Carmichael, Buffalo Creek, Florin, Rio Linda, Citrus Heights, Folsom, Sacramento East, Elk Grove, and Sloughouse 7.5-minute quadrangles (online edition, v6-04d) (CNPS 2018);
- Excelsior Estates ±866.3-Acre Site Wetland Delineation Report (Foothill Associates 2004);
- Results of a Focused Survey for Sacramento Orcutt Grass (*Orcuttia viscida*) and Slender Orcutt grass (*Orcuttia tenuis*) on the Excelsior Estates ±866.3-Acre Site (Foothill Associates 2006);
- Excelsior Estates Jurisdictional Determination Regulatory #200400791, Excelsior Estates ±866-Acre Site Sacramento County, California (Foothill Associates 2008);
- U.S. Army Corps of Engineers letter of preliminary jurisdictional determination for the Jackson Township Project (USACE 2015);
- Orcutt Grass Survey on the ±866- Acre Excelsior Estates Site, Sacramento County, California (Foothill Associates 2007);

- 90-Day 2009-2010 Wet-Season Survey for Listed Vernal Pool Branchiopods, Excelsior Estates, Sacramento County, California (Foothill Associates 2010);
- Special-Status Plant Surveys on the ±886-Acre Excelsior Estates Site, Sacramento County, California, August 5, 2014 (Foothill Associates 2014);
- Federal Endangered and Threatened Species that may occur in the proposed project location or be affected by the proposed project (USFWS 2018); and
- Arborist Report, Jackson Township Specific Plan Area, Sacramento County, California (Foothill Associates 2015).

ENVIRONMENTAL SETTING

The Plan Area is 1,391 acres in size and predominantly consists of annual grasslands interspersed with vernal pools and other wetlands. A small area in the southwest portion of the Plan Area is irrigated pasture and the majority of the Plan Area has been used extensively for cattle grazing. The northwestern portion of the Plan Area was formerly used as a nursery and koi farm and still contains a series of man-made basins. These basins do not regularly pond water, but the soils are seasonally saturated in some of the basins. The Sacramento Raceway occupies 180 acres in the west central portion of the Plan Area. The Sacramento Raceway has been present since the mid-1960s and contains a drag strip, dirt track, motocross track, and associated infrastructure. Rural residences are located along Excelsior Road, Jackson Highway, and Tree View Lane. An aerial photograph of the Plan Area has been provided for context (see Plate PD-4 in Chapter 2, “Project Description”).

Moderate rolling hills and extensive flatlands characterize the topography of the Plan Area and the surrounding area. In general, the Plan Area slopes from east to west, ranging from 140 feet above mean sea level on the eastern side of the site to 75 feet on the western side of the Plan Area.

The hydrologic regime on the Plan Area is dominated by seasonal rainfall and storm water runoff, primarily between November and April. The southwestern Plan Area is within the headwaters of Elder Creek, and a small bend in Morrison Creek extends slightly into the northeastern corner of the Plan Area (see Plate HYD-1 in Chapter 14, “Hydrology and Water Quality”). When rainwater falls on the Plan Area, the slope of the ground causes the water to flow in one of three basic directions: into Morrison Creek to the north, into Elder Creek to the south, or into an offsite mining pit located west of the Plan Area (after flowing through culverts underneath Excelsior Road).

Various studies were completed with respect to biological resources; however, because of limited access, many of these studies were completed only on the Project Applicant-owned properties. These studies and their scope are discussed in greater detail below. It is important to note that the portion of the Plan Area owned by the Project Applicant has gradually increased. As a result, the coverage of these studies is not consistent. While the surveys provide the context necessary for resource evaluation, the surveys may not be sufficient to support determinations by the applicable regulatory agencies due to lack of coverage, survey methods, and the time elapsed since initial surveys were conducted.

Currently, lands to the south and east of the Plan Area are mostly undeveloped, open grassland generally used for grazing with some rural residences. A large gravel pit mine (Aspen VI), along with some rural residences are to the west of the Plan Area, while Mather Preserve is directly to the north.

HABITATS

The predominant habitat type in the Plan Area is annual grassland interspersed with vernal pools, seasonal wetlands, perennial marsh, and other waters. The following habitat types are prominent in Sacramento County and present within the Plan Area.

ANNUAL GRASSLAND

The majority of the Plan Area is annual grassland. Grassland habitat in Sacramento County is typically characterized 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 or for only certain phases of their life cycle. Recently, there has been a movement in academia 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 (Sacramento County et al. 2018). In the SSHCP, this habitat type is called valley grassland (Sacramento County et al. 2018).

Nonnative annual grasses that dominate the Plan Area grasslands include wild oats (*Avena fatua*), soft chess (*Bromus hordeaceus*), ripgut brome (*B. diandrus*), medusa head (*Elymus caput-medusae*), Italian rye grass (*Festuca perennis*), hare barley (*Hordeum murinum* ssp. *leporinum*), and rattail sixweeks grass (*Festuca myuros*). Common forbs found in the annual grasslands in the Plan Area include Italian thistle (*Carduus pycnocephalus*), yellow star-thistle (*Centaurea solstitialis*), valley tassels (*Castilleja attenuata*), hawkbit (*Leontodon taraxacoides*), narrow tarplant (*Holocarpha virgata*), Spanish lotus (*Acmispon americanus*), vinegar weed (*Trichostema lanceolatum*), and Fitch's tarweed (*Centromadia fitchii*) (Foothill Associates 2004, 2014).

WETLANDS

The County of Sacramento contains several wetland habitats, most of which are naturally occurring, although some were artificially created as mitigation for prior impacts. Federal regulation (Clean Water Act Section 404) has defined the term wetland to mean "those areas that are inundated or saturated by surface or ground water 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." The term "wetlands" includes a diverse assortment of habitats such as perennial and seasonal freshwater marshes, vernal pools, and wetland swales. These wetland features share several physical characteristics, including frequent or seasonal inundation by water, soil saturated long enough to exclude organisms intolerant of anaerobic conditions, and plants that are adapted to wetted conditions.

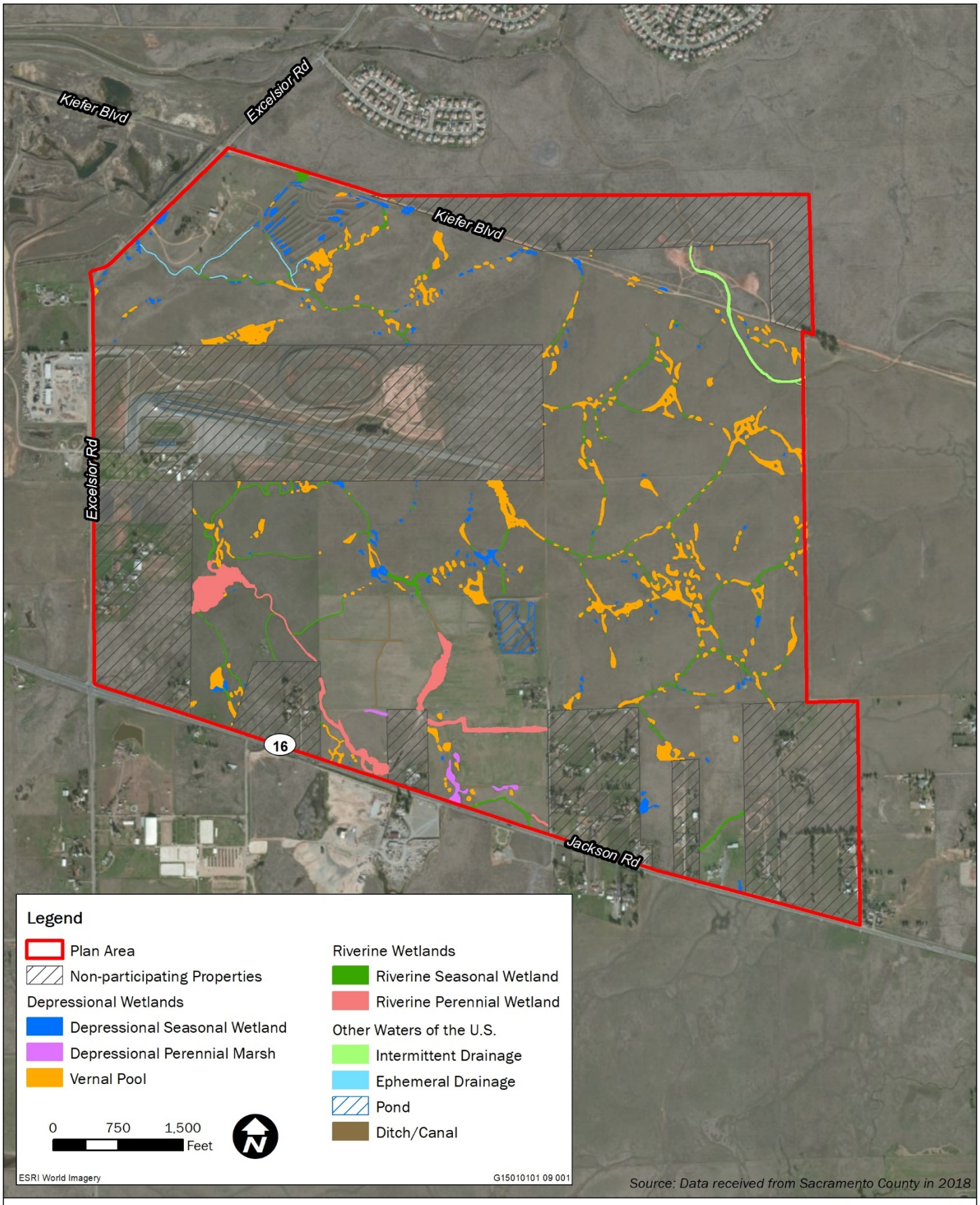
A wetland delineation for a portion of the Plan Area was prepared by Foothill Associates, dated May 28, 2004; and supplements to this delineation were prepared May 28, 2008 and October 29, 2015. These delineations covered the 866.3 acres of properties owned by the Project Applicant at the time the delineation was completed. The delineation report identifies approximately 53.8 acres of surface waters. The U.S. Army Corps of Engineers (USACE) has reviewed and verified these results and issued a Preliminary Jurisdictional Determination on November 6, 2015. Refer to Table BR-1 for a breakdown of the acreage of wetlands and other waters within the Plan Area.

The non-participating properties were not included in this delineation; however, Foothill Associates estimated a total of 15.35 acres of potential jurisdictional waters through aerial photography and observations made from public streets and property owned by the Project Applicant. The distribution of wetlands and other waters within the Applicant-owned properties is shown in Plate BR-1. Wetlands and other waters on the non-participating properties are not shown in Plate BR-1 because they were not delineated according to USACE protocol; however, the estimated acreage of these features is provided in Table BR-1.

Table BR-1: Waters of the United States

Classification	Jurisdictional Waters (acres)	
	Applicant-Owned Properties	Non-Participating Properties (estimated)
Wetlands		
Depressional Seasonal Wetlands	4.41	0.44
Depressional Perennial Marsh	1.03	0.06
Vernal Pool	27.85	4.71
Riverine Seasonal Wetland	3.70	7.06
Riverine Perennial Marsh	10.05	1.19
Total area of wetlands	*47.04*	*13.46*
Other Waters of the United States		
Intermittent Drainage	1.19	0.30
Ephemeral Drainage	0.23	0.04
Pond	5.04	1.55
Ditch/Canal	0.31	0.00
Total area of other waters	*6.77*	*1.89*
TOTAL	**53.81**	**15.35**

Note: Information in this table reflects the Applicant-owned and non-participating properties as of the last supplement to the Delineation Report, October 29, 2015



Source: Data received from Sacramento County in 2018

Plate BR-1: Wetland Delineation

ASCENT ENVIRONMENTAL

VERNAL POOLS

Vernal pools are small basins, depressions on the landscape that collect seasonal rains and support a specialized collection of plant and animal species. They are defined by a hydrologic regime dominated by inundation. Typically, semi-impermeable soil underlies vernal pools and restricts downward percolation of collected rain water. As a result, water slowly evaporates during the spring creating showy displays of tiny flowers blooming in concentric circles as the water recedes. Many plants found in vernal pools are endemic (found only in these habitats) and have adapted to survive partially-submerged conditions. These conditions have kept the nonnative grasses that comprise much of the County's grazing lands from invading or at least dominating the pools. Thus, vernal pools are small pockets of mostly native vegetation surrounded by vegetation dominated by nonnative grass species.

As shown in Table BR-1, the Plan Area contains 27.85 acres of vernal pools within the Applicant-owned properties and an estimated 4.71 acres of vernal pools within the non-participating properties.

SEASONAL WETLANDS

Seasonal wetlands are scattered throughout the County, most in association with the County's rivers and creeks, within floodplains. These wetlands typically begin to form after the first winter rains and fill as rain continues through the season. They drain primarily via drainage swales during high runoff, or via combination of ground percolation and evaporation. By mid-summer or early fall these features will typically be dry. Depending on water depth and duration, seasonal wetlands can harbor federally listed invertebrates and provide habitat for many species. Vernal pools are a type of seasonal wetland; however, seasonal wetlands primarily differ from vernal pools in having underlying soils that are more permeable than the soils associated with vernal pools. The difference in the permeability generally results in different vegetation characteristics with vernal pools being characterized by endemic species and seasonal wetlands being dominated by wetland generalist plant species. There are two types of seasonal wetlands in the Plan Area. Depressional seasonal wetlands are defined by a hydrologic regime that is dominated by saturation, rather than inundation, while riverine seasonal wetlands are defined by a hydrologic regime dominated by unidirectional flow of water.

As shown in Table BR-1, the Plan Area contains 8.11 acres of seasonal wetlands within the Applicant-owned properties and an estimated 7.5 acres of seasonal wetlands within the non-participating properties.

PERENNIAL MARSH

Perennial marshes remain inundated or saturated throughout the year and support perennial herbaceous plant species that tolerate high soil moisture and seasonal to permanent soil saturation or inundation. These marshes can occur as a result of natural or artificial water flows associated with neighboring land uses. Also, there are two types of perennial marshes. Depressional perennial marsh's dominant hydrologic regime is inundation and/or saturation, while riverine perennial marshes are dominated by unidirectional flow of water.

As shown in Table BR-1, the Plan Area contains 11.08 acres of perennial marsh within the Applicant-owned properties and a predicted 1.25 acres of perennial marsh within the non-participating properties.

OTHER WATERS:

An intermittent drainage is not a wetland because it does not meet the three-parameter criteria for vegetation, hydrology, and soils; it conveys water during the wet months and is typically dry during the dry months. The southern branch of Morrison Creek, which runs through the northeast corner of the Plan Area, is an intermittent drainage. Intermittent drainages are supported by precipitation, runoff, and groundwater sources and often support riparian vegetation on their banks, though this is not the case for the portion of Morrison Creek within the Plan Area.

Ephemeral drainages are not wetlands because they are generally unvegetated and do not retain water long enough to develop hydric soils. They typically convey water only during and/or directly after a storm event. Direct precipitation is the sole source of hydrology in ephemeral drainages.

In the County's rural lands ranchers have established water features, such as drainage ditches/canals and ponds. Ponds are typically formed by damming small drainages to form relatively deeper ponds which can hold water through much of the summer months. These ponds tend to be derived from runoff, although groundwater pumping could also play a role in filling these ponds. These ponds typically provide deeper water habitat for some amphibian species. Several farm ponds and other impoundments are found in the Plan Area, primarily associated with rural residences. There is one large irrigation pond that serves as water supply for irrigated pastures in the south-central portion of the Plan Area.

As shown in Table BR-1, the Plan Area contains 6.77 acres of other waters of the United States within the Applicant-owned properties and an estimated 1.89 acres of other waters of the United States within the non-participating properties. Other waters of the United States within the Plan Area consist of intermittent and ephemeral drainage channels, ponds, and human created ditches and canals used for irrigation or to convey runoff.

MATHER CORE RECOVERY AREA

The U.S. Fish and Wildlife Service (USFWS) has published the *Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon* (Recovery Plan), the purpose of which is to achieve self-sustaining populations of many species that rely on vernal pools. The Recovery Plan identifies "core areas," which are areas that are vital to achieve the goals of the plan. Core areas are ranked 1, 2, or 3 depending on their overall priority for recovery, with rank 1 being highest priority. The majority of the Plan Area lies within the Mather Core Recovery Area (Plates BR-2 and BR-3), which is ranked 1 because it has been determined to be vital not only to the recovery of vernal pool tadpole shrimp (*Lepidurus packardi*) and Sacramento Orcutt grass, but also to preventing the extinction or irreversible decline of these species.

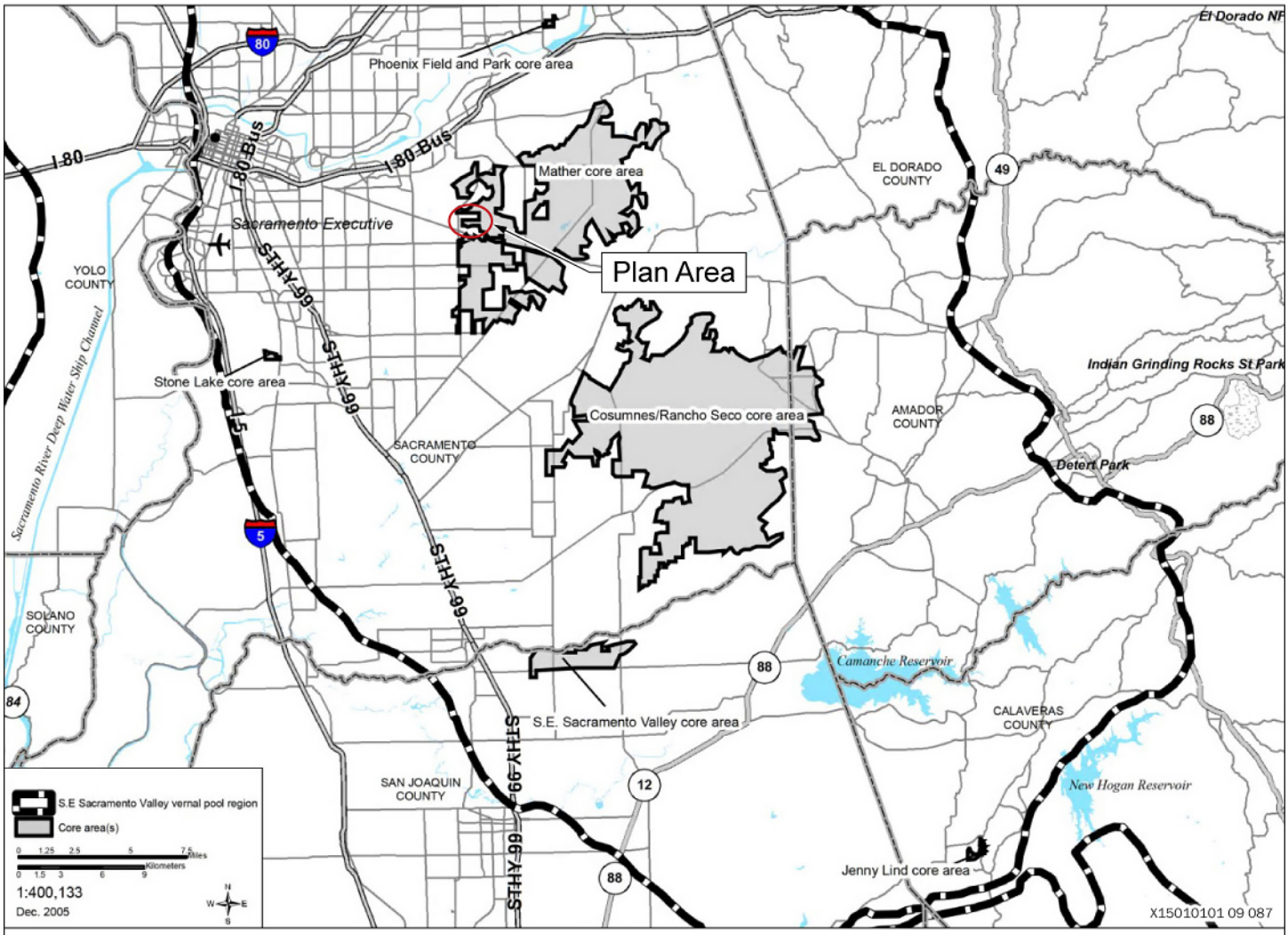


Plate BR-2: Mather Core Recovery Area

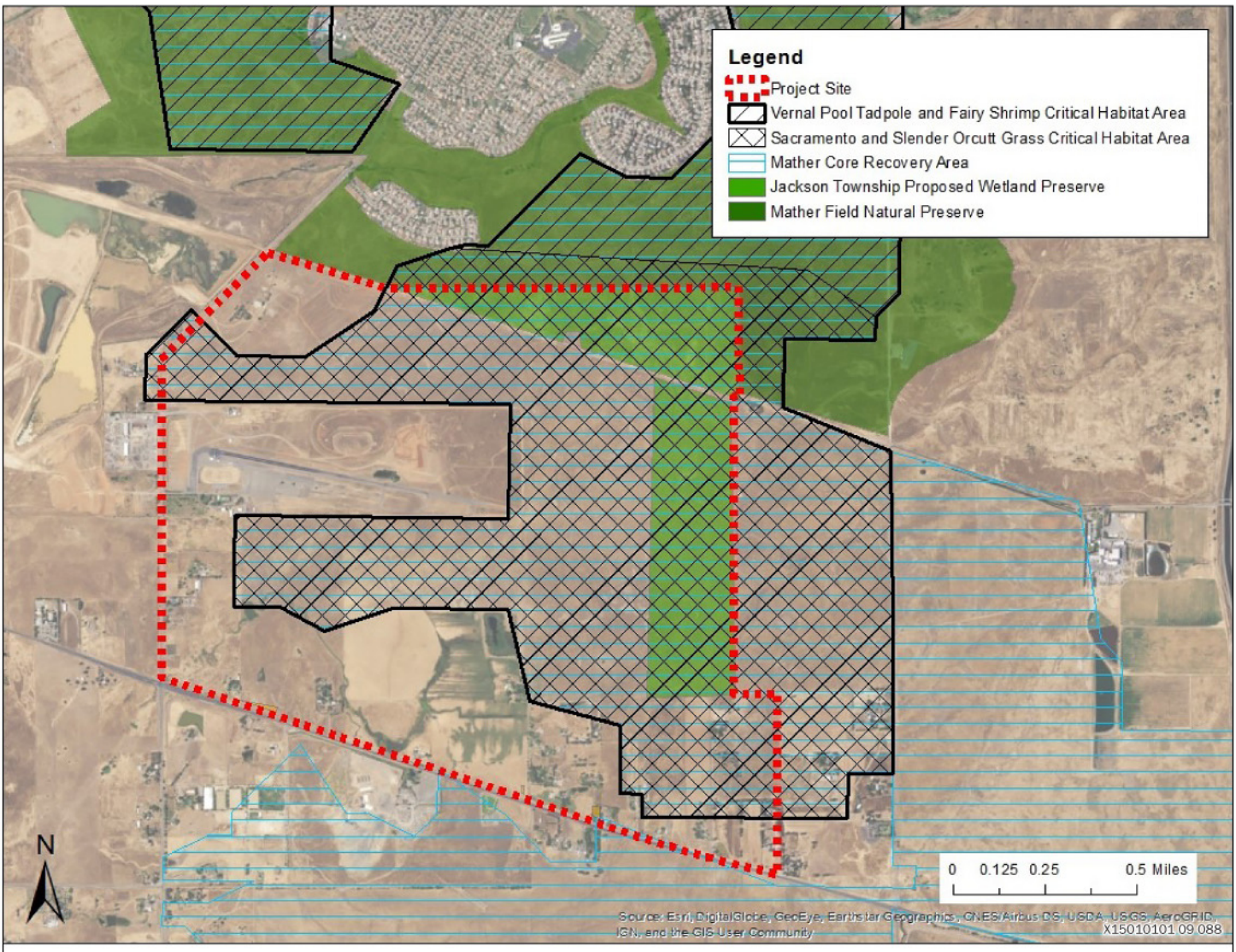


Plate BR-3: Critical Habitat and Mather Core Recovery Area

As stated in the Recovery Plan, the Mather Core Area has specific conservation goals, including 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 (*Branchinecta lynchi*).

Critical Habitat

Critical habitat consists of geographical areas that contain the physical or biological features that are essential to the conservation of species that the U.S. Fish and Wildlife Service has listed as threatened or endangered under the federal Endangered Species Act (ESA), and that may require special management or protection. The Plan Area overlaps with Vernal Pool Critical Habitat Subunit 11E, which has been designated as critical habitat for vernal pool fairy shrimp, vernal pool tadpole shrimp, slender Orcutt grass, and Sacramento Orcutt grass (Plate BR-3). Approximately 779 acres (57%) of this subunit occurs within the Plan Area (Foothill Associates 2015).

Native and Nonnative Trees

Sacramento County has identified the value of its native and landmark trees and has adopted measures for their preservation. Native Oaks as defined by the Sacramento Tree Ordinance include valley oak (*Quercus lobata*), interior live oak (*Quercus wislizenii*), and blue oak (*Quercus douglasii*). Other native tree species are also protected. Native trees found in the Plan Area consist of Fremont cottonwood (*Populus fremontii*), California sycamore (*Platanus racemosa*), Gooding's black willow (*Salix gooddingii*), black walnut (*Juglans hindsii*), and interior live oak. It should be noted that to be considered a tree, as opposed to a seedling or sapling, the tree must have a diameter at breast height (dbh) of at least 6 inches or, if it has multiple trunks of less than 6 inches each, a combined dbh of 10 inches.

Nonnative trees provide habitat for a variety of species and are also regarded in Sacramento County as a valuable asset to the overall tree canopy. See the regulatory setting for additional details.

An Arborist Report was prepared by Foothill Associates for the project on February 10, 2015. A tree survey was conducted in the Plan Area; however, access to conduct field work was only granted to the Applicant-owned properties. Therefore, tree data for the non-participating properties was estimated by conducting visual surveys from public roads. The tree inventory identified 175 trees on the Applicant-owned properties and 628 trees on the non-participating properties. Five native oaks, 91 other native trees, and 707 nonnative trees were identified in the Plan Area. The results of the tree inventory are summarized in Tables BR-2 and BR-3 and tree locations are shown in Plate BR-4.

Table BR-2:Tree Inventory of Applicant-Owned Properties

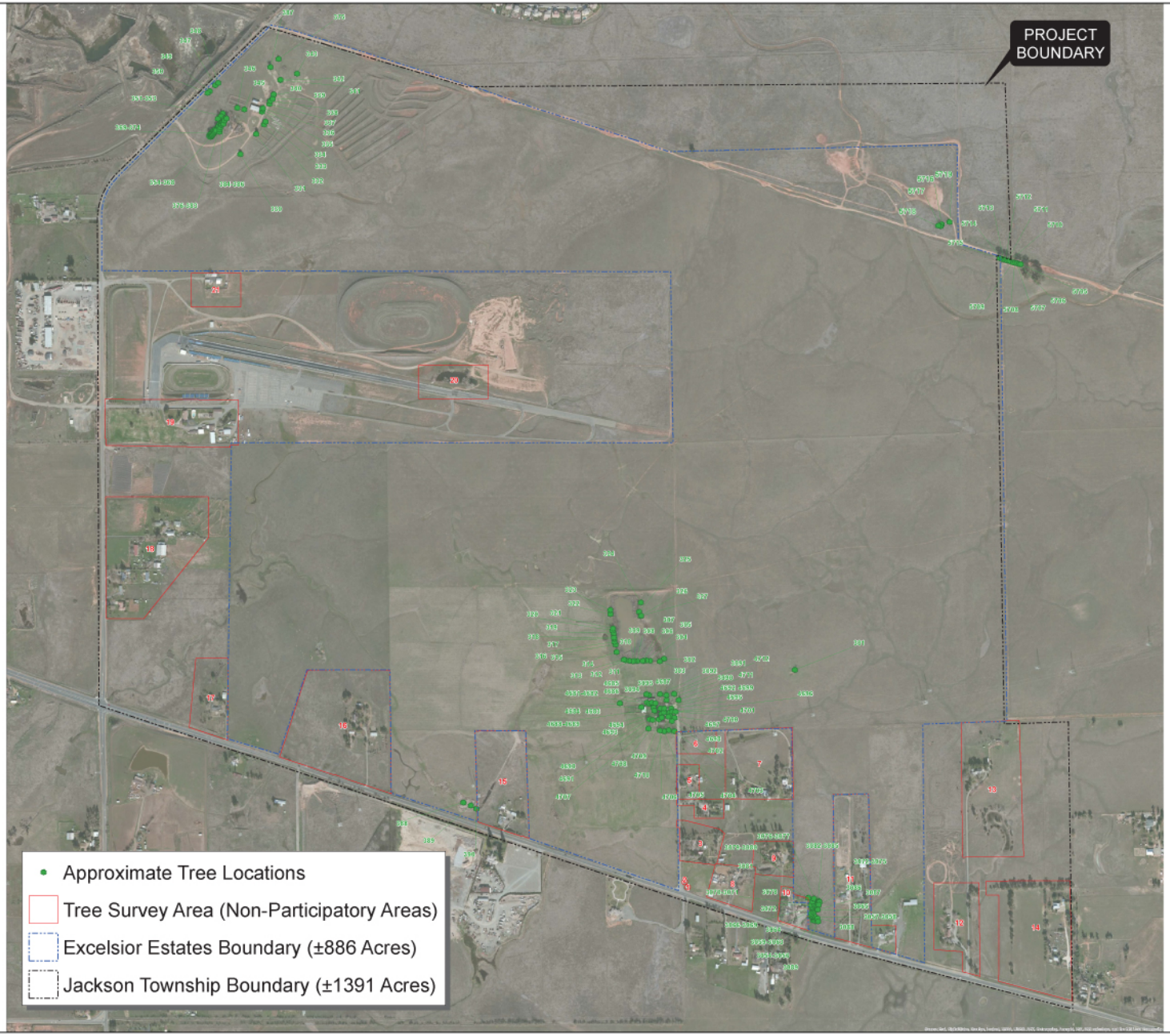
Common Name	Species	Native	Number of Trees	Aggregate DBH (inches)
Black locust	(*Robinia pseudoacacia*)	No	24	277
Black walnut	(*Juglans hindsii*)	Yes	13	234
Black willow	(*Salix gooddingii*)	No	25	504
California sycamore	(*Platanus racemosa*)	Yes	3	37
Chinese pistache	(*Pistacia chinensis*)	No	1	9
Cork oak	(*Quercus suber*)	No	1	17
Edible fig	(*Ficus carica*)	No	3	70
Elm	(*Ulmus* spp.)	No	8	104
Eucalyptus	(*Eucalyptus* spp.)	No	45	830
Fremont cottonwood	(*Populus fremontii*)	Yes	6	77
Interior live oak	(*Quercus wislizeni*)	Yes	1	10
Lombardy poplar	(*Populus nigra*)	No	1	6
Pine	(*Pinus* spp.)	No	8	168
Plum	(*Prunus* spp.)	No	3	25
Southern magnolia	(*Magnolia grandiflora*)	No	1	8
Sweetgum	(*Liquidambar styraciflua*)	No	1	6
Tree of heaven	(*Ailanthus altissima*)	No	18	172
White mulberry	(*Morus alba*)	No	10	228
Willow	(*Salix* spp.)	No	3	36

Note: Information in this table reflects the Applicant-owned properties as of the Arborist Report, February 10, 2015

Table BR-3: Tree Inventory of Non-Participating Properties

Common Name	Species	Native	Number of Trees	Estimated Aggregate DBH (inches)
Black locust	(*Robinia pseudoacacia*)	No	29	118
Black walnut	(*Juglans hindsii*)	Yes	5	58
California sycamore	(*Platanus racemosa*)	Yes	5	38
Catalpa	*(Catalpa* spp.)	No	1	6
Coast redwood	(*Sequoia sempervirens*)	No	48	76
Cork oak	(*Quercus suber*)	No	12	10
Deodar cedar	(*Cedrus deodara*)	No	1	18
Domestic almond	(*Prunus dulcis*)	No	5	14
Elm	(*Ulmus* spp.)		40	55
Eucalyptus	(*Eucalyptus* spp.)	No	162	204
Fremont cottonwood	(*Populus fremontii*)	Yes	31	104
Interior live oak	(*Quercus wislizenii*)	Yes	2	23
Italian cypress	(*Cupressus sempervirens*)	No	18	14
Lombardy poplar	(*Populus nigra*)	No	3	15
Maple	(*Acer* spp.)	No	4	10
Olive	(*Olea europaea*)	No	8	20
Pine	(*Pinus* spp.)	No	109	228
Plum	(*Prunus* spp.)	No	4	5
Privet	(*Ligustrum* spp.)	No	13	22
Red maple	(*Acer rubrum*)	No	1	8
Red willow	(*Salix laevigata*)	Yes	3	20
Silver wattle	(*Acacia dealbata*)	No	22	30
Sweetgum	(*Liquidambar styraciflua*)	No	19	20
Tree of heaven	(*Ailanthus altissima*)	No	1	15
Valley Oak	(*Quercus lobata*)	Yes	2	18
White mulberry	(*Morus alba*)	No	49	134
Willow	(*Salix* spp.)	No	31	48

Note: Information in this table reflects the non-participating properties as of the Arborist Report, February 10, 2015



Source:

X15010101.09 005

Plate BR-4: Tree Survey

ASCENT ENVIRONMENTAL

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 or that otherwise meet the definition of rare, threatened, or endangered pursuant to Section 15380 of CEQA. 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 California Department of Fish and Wildlife (CDFW) as Species of Special Concern;
- animals fully protected under the California Fish and Game Code;
- species covered in the SSHCP;
- plants considered by CDFW to be “rare, threatened, or endangered in California” (California Rare Plant Ranks 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 adjacent properties (e.g., Mather Field Specific Plan area, NewBridge Specific Plan area), and database searches. An official species list was 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 were queried for records of previously documented occurrences of special-status species in the Carmichael, Buffalo Creek, Florin, Rio Linda, Citrus Heights, Folsom, Sacramento East, Elk Grove, and Sloughouse 7.5-minute quadrangles (CNDDB 2018, CNPS 2018). Pursuant to CDFW guidelines, a 9-quadrangle search area was used to inquiry these databases (i.e., the quadrangle containing the Plan Area plus the eight surrounding quadrangles). A Biological Resources Assessment was prepared by Foothill Associates (Appendix BR-1), dated December 16, 2015. Foothill Associates conducted biological and plant surveys for the Applicant-owned portions of the Plan Area in 2014.

Appendix B of Appendix BR-1 includes a table that lists special-status species that the species searches/surveys and rare plant surveys identified as possibly present in the project vicinity. The table reports the likelihood of an occurrence for each species on the Plan Area based on habitat presence either on the site or in proximity of the site, survey results (if any), and species range and nearby recorded occurrences. Appendix BR-2 includes species descriptions of select special-status species that are possibly present in the project vicinity.

A lack of reported sightings is not an indication that the species is not present; there may be many reasons that a species could be present, but unreported. For instance,

the species may have been observed but not reported, may be present during times when observers are absent, the species may be difficult to detect even when present, or comprehensive or protocol-level surveys for the species may not have been completed in the area. For this reason, all species identified through database and literature review as potentially occurring in the general project vicinity and for which suitable habitat is present in the Plan Area were considered as having potential to occur in the Plan Area and are evaluated further in this document. Species for which suitable habitat is absent from the Plan Area or whose known range does not include the Plan Area were determined not to be affected by Project implementation as described in Table BR-4.

The following bird species that are known to migrate through the area were eliminated from further evaluation because the Plan Area is outside their current known breeding range and they are only considered sensitive to project effects during breeding:

- Short-eared owl (*Asio flammeus*),
- Vaux's swift (*Chaetura vauxi*),
- yellow-breasted chat (*Icteria virens*),
- least bittern (*Ixobrychus exilis*),
- purple martin (*Progne subis*), and
- yellow warbler (*Setophaga petechia*).

There is no suitable aquatic habitat in the Plan Area for salmonids or other special-status fish species and waterways in the Plan Area are not directly tributary to waters known to support special-status fish; therefore, the following special-status fish species and distinct population segments were considered but eliminated from further evaluation:

- Pacific lamprey (*Entosphenus tridentatus*),
- Delta smelt (*Hypomesus transpacificus*),
- River lamprey (*Lampetra ayresii*),
- hardhead (*Mylopharodon conocephalus*),
- Central Valley steelhead (*Oncorhychus mykiss irideus*),
- Central Valley spring-run chinook salmon (*Oncorhychus tshawytscha*),
- Sacramento River winter-run chinook salmon (*Oncorhychus tshawytscha*),
- Sacramento splittail (*Pogonicthys macrolepidotus*), and
- longfin smelt (*Spirinchus thaleichthys*).

Table BR-4 summarizes the regulatory status, suitable habitat, and potential for the 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-4.

Table BR-4: Special-Status Species

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 during previous surveys. The nearest recorded occurrence is approximately 2.4 miles from the Plan Area. A large portion of the Plan Area is within designated critical habitat for this species.
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 approximately 1.4 miles east of the Plan Area and is one of only three known occurrences in Sacramento County. A large portion of the Plan Area is within designated critical habitat for this species.
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. This species has been documented in the Plan Area and a large portion of the Plan Area is within designated critical habitat for this species.

Species	Status	Suitable Habitat	Potential for Project to Affect
Desmocerus californicus dimorphus **Valley elderberry longhorn beetle**	FT	Breeds and forages exclusively on elderberry shrubs. Typically associated with riparian forest, riparian woodland, elderberry 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.	May affect. Elderberry shrubs are absent from the Applicant-owned properties but may be present on the non-participating properties. Therefore, this species could be present.
Lepidurus packardi **Vernal pool tadpole shrimp**	FE	Occurs in vernal pools containing clear to highly turbid water.	May affect. This species has been documented in the Plan Area and a large portion of the Plan Area is within designated critical habitat for this species.
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) and the SSHCP does not identify modeled habitat in the Plan Area or vicinity.
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. There are no known occurrences in the Plan Area vicinity and this species is presumed extirpated from the Sacramento region.
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

Species	Status	Suitable Habitat	Potential for Project to Affect
			breeding populations and the Plan Area. The nearest SSHCP modeled habitat is along Laguna Creek extending southwest from the intersection of Grant Line Road and Sunrise Blvd.
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 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.	Not likely to affect. No suitable habitat within the Plan Area.
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 in open areas, including oaks, sycamores, redwoods, pines, and eucalyptus, overlooking open hunting habitat.	Not likely to affect. This species has been observed foraging in the vicinity; 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.
Haliaeetus leucocephalus Bald eagle	FD, BEPA, CE, CFP	In western North America, nests and roosts in coniferous forests within 1 mile of a lake, reservoir, river, or the ocean.	No effect. There is no suitable nesting or wintering habitat (coniferous forest) in the Plan Area.
State/Local Protected Species			
Plants			
Gratiola heterosepala **Bogg's 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 on adjacent lands.
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

Species	Status	Suitable Habitat	Potential for Project to Affect
			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. Suitable habitat is present within vernal pools and swales in the Plan Area and the species has been recorded nearby.
Hibiscus lasiocarpus var. *occidentalis* Woolly rose-mallow	CRPR 1B.1	Perennial herb found at the margins of freshwater marshes, wet riverbanks, and on low, 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.	Not likely to affect. Although marsh habitat is present, the specific habitat conditions this species is typically associated with are not found in the Plan Area.
Juglans hindsii Northern California black walnut	CRPR 1B.1	Deciduous tree that inhabits riparian forests and woodlands. Blooms April to May. Elevation: 0 to 1,400 ft.	Not likely to affect. Although this species was recorded during the tree inventory, trees in the Plan Area are not likely to be genetically pure *Juglans hindsii*. This species was heavily cultivated as rootstock for English walnut (*Juglans regia*) and few native populations still exist. It is widely naturalized in riparian habitats but the only confirmed native stands are at three sites in Napa and Contra Costa counties.
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 on adjacent lands.
Legenere limosa **Legenere**	CRPR 1B.1	Annual herb found in well-developed vernal pools and playas. 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 a vernal pool within the non-participating properties and in several vernal pools on adjacent lands.
Lepidium latipes var. *heckardii* Heckard's pepper-grass	CRPR 1B.2	Annual herb found in alkaline soils in valley and foothill grassland, sometimes at the edges of vernal pools. Blooms	Not likely to affect. Alkaline soils are not present in the Plan Area; therefore, habitat is unsuitable for this species.

Species	Status	Suitable Habitat	Potential for Project to Affect
		March-May. Elevation: 10 to 100 ft.	
Navarretia myersii ssp. *myersii* Pincushion navarretia	CRPR 1B.1	Annual herb found in vernal pools. Blooms in May. Elevation: 65 to 750 ft.	Not likely to affect. Suitable wetland habitat is present and there are pockets of SSHCP modeled habitat for this species in the Plan Area; however, all 48 known occurrences of this species in the County are located southeast of Dillard Road over 10 miles from the Plan Area and this species has never been found in the project vicinity. Therefore, it is unlikely to occur in the Plan 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.	May affect. Suitable habitat is present within the Plan Area, and the species has been recorded on adjacent lands.
Trifolium hydrophilum Saline clover	CRPR 1B.2	Annual herb found in mesic, alkaline sites in valley and foothill grasslands, vernal pools, and salt marshes. Blooms April-June. Elevation 0 to 1,000 ft.	Not likely to affect. Alkaline soils are not present in the Plan Area; therefore, habitat is unsuitable for 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 north of the Plan Area within Mather Field.
Hydrochara rickseckeri **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 north 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 and the species has been documented on adjacent lands.

Species	Status	Suitable Habitat	Potential for Project to Affect
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. The species has been recorded at Mather Field 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 tree clusters 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, such as flooded, spiny, or thorny vegetation.	May affect. Suitable nesting habitat is present in the Plan Area and a colony has been documented nesting along Elder Creek in the Plan Area. The CNDDB reports 500 nesting on site in 2012 and 75 observed foraging onsite in 2014. The species was documented at multiple locations adjacent to and within the Plan Area in June 2017.
Ammodramus savannarum **Grasshopper sparrow**	CSC	Forages and nests in dense grasslands; favors a mix of native grasses, forbs, and scattered shrubs. Nests in depressions on the ground at the bases of grass clumps. Prefers large tracts of habitat.	May affect. Suitable nesting habitat is present in the Plan Area, and the species has been documented on adjacent lands.
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 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, and 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	May affect. Suitable nesting and foraging habitat are present within

Species	Status	Suitable Habitat	Potential for Project to Affect
		agricultural habitats; nests on the ground in marshy meadows, wet and lightly grazed pastures, and freshwater and brackish marshes; and dry upland habitats, such as grassland, cropland, and drained marshland.	the Plan Area and the species has been observed foraging in 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 in the project vicinity. The species has been observed foraging throughout the Plan Area.
Grus cnadensis tabida Greater sandhill crane	CT	Annual and perennial grassland habitats, moist croplands with rice or corn stubble, and open, emergent wetlands. Typically nests in mounds of wetland plants or hummocks in remote portions of extensive wetlands. Does not nest in the Central Valley of California but is a winter resident and loss of winter roost sites is a threat to the species.	Not likely to affect. There are no winter roost sites in or near the Plan Area. While Sacramento County provides important wintering habitat for this species, these wintering sites are concentrated within the Cosumnes River Floodplain (Littlefield and Ivy 2000).
Lanius ludovicianus **Loggerhead shrike**	CSC	Breed mainly in shrublands or 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.	May affect. Suitable nesting and foraging habitat are present within Plan Area.
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.	May affect. Suitable nesting and foraging habitat are present. Species observed within the Plan Area (Foothill Assoc. 2015).
Riparia riparia Bank swallow	CT	Nests in colonies in unvegetated vertical banks with fine-textured, sandy soils, typically next to streams, rivers, or lakes, occasionally in gravel quarries or	No effect. No suitable nesting habitat within the Plan Area.

Species	Status	Suitable Habitat	Potential for Project to Affect
		other eroding bluffs. Forages in a variety of habitats near nests	
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.	May affect. Suitable nesting and forging habitat are present.
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 (Pierson et al. 2006). Prefers habitat edges and mosaics with trees that are protected from above and open below and open areas for foraging, including grasslands, shrublands, and open woodlands.	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.
Taxidea taxus **American badger**	CSC	Found in dry, open grasslands, fields, and pastures.	May affect. Suitable habitat is present within the Plan Area and dens have been documented on adjacent lands in Mather Preserve.

Federal

FD = Delisted, formerly listed as Endangered under ESA

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

SOURCES: CNDDB 2018, CNPS 2018, USFWS 2018, Sacramento County et al. 2018, Foothill Associates 2015, USFWS 2005

REGULATORY SETTING

FEDERAL

The two major federal laws regulating impacts to wetlands and wildlife species are the Clean Water Act (Sections 404 and 401) and the Endangered Species Act (Section 7, 9, and 10). USACE is responsible for administering Section 404 of the Clean Water Act (CWA), with the U.S. Environmental Protection Agency (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 (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 United States, including wetlands. Fill material is material placed in waters of the United States where the material has the effect of replacing any portion of a water of the United States with dry land or changing the bottom elevation of any portion of a water of the United States. Waters of the United States include navigable waters of the United States; 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 United States 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 United States 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. The 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 for which USFWS has enough information on file to propose listing as endangered or threatened. “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. A species that has been “delisted” is one whose population has met its recovery goal target and is no longer in jeopardy of extinction.

Section 9 of the ESA prohibits the “take” of federally endangered or threatened wildlife species. To “take” is defined under 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 Section 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 Section 17.3).

All federal government agencies must review their actions and determine if a “may affect” situation occurs with respect to a federally listed or proposed species. If the agency makes a “may affect” determination, it is then required to formally consult with NMFS or USFWS.

For federal agencies, the consultation is often 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, or NMFS in the case of anadromous fish, then prepares a Biological Opinion 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 California 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 RWQCB.

CALIFORNIA ENDANGERED SPECIES ACT

The 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. “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 CDFW 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 of the California Fish and Game Code 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.

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

The Porter-Cologne Act (State Water Code Section 13020) mandates that all the 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 Act and 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 2030 GENERAL PLAN

The following 2030 General Plan policies pertaining to biological resources are applicable to the Project:

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-72. If land within river and stream watersheds in existing agricultural areas is developed for non-agricultural purposes, the County should actively pursue easement dedication for recreation trails within such development as a condition of approval.

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-145. Removal of non-native tree canopy for development shall be mitigated by creation of new tree canopy equivalent to the acreage of non-native 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 non-native 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).

COMMUNITY PLANS

CORDOVA COMMUNITY PLAN

The Cordova Community Plan, last updated in 2003, provides guidance for both new development and the redevelopment of existing land uses within the community planning area. Objectives identified in the plan that are applicable to the Project include:

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.

ROS-8. Ensure the proper management, maintenance, and sustainability of open space areas

VINEYARD COMMUNITY PLAN

The Vineyard Community Plan, developed in 1985, provides guidance for growth and development in the community planning area. Policies identified in the plan that are applicable to the Project include:

NER 4. Protect vernal pools and endangered species such as the Sacramento Orcutt Grass by evaluating development project sites on a case-by-case basis for the presence of vernal pools and inventorying those sites where vernal pools are found.

NER 5. Encourage the development of linear parkways along stream channels, within floodplains, and within power transmission easements for environmentally compatible recreation facilities and open space.

SACRAMENTO COUNTY TREE ORDINANCE

The Sacramento County Tree Preservation and Protection Ordinance (Chapter 19.12 of the County Code) regulates removal and impacts to any native oak tree and 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 in order to protect other species of trees." This protection is afforded to native oak trees, other native trees, heritage trees, and landmark trees. Section 19.04 of the County Code defines a landmark tree as "an especially prominent or stately tree on any land in Sacramento County, including privately owned land" and a heritage tree as "native oak trees that are at or over 19" diameter at breast height (dbh)."

County policy identifies the following list of native oak and specific non-oak native trees to be considered during environmental analyses:

- Valley oak,
- Interior live oak,
- Blue oak,
- Coast live oak (*Quercus agrifolia*) (in Delta area),
- Oracle oak (*Quercus X morehus*),
- Native oak hybrids,
- California sycamore,
- 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*),

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." On an individual basis, the acquisition of lands for habitat conservation may not always be feasible or prudent and many small, disconnected preserves do not benefit the species as well as large, connected preserve systems. Therefore, the ordinance provides for the establishment of impact mitigation fees, which, in some circumstances, may be paid in-lieu of providing habitat lands. These fees accumulate and are held in trust by the County until used for the acquisition of foraging habitat of a size large enough to be biologically and economically viable. The Board of Supervisors found that direct preservation of foraging habitat or the payment of fees for acquisition of such habitat would meet the requirements of CEQA by reducing impacts to Swainson's hawk foraging habitat to a less than significant level for agriculturally zoned lands of Sacramento County.

Under the Swainson's Hawk Impact Mitigation Program, only projects that have an impact of less than 40 acres are eligible to participate in the in-lieu fee program. Projects adversely affecting 40 acres or more of foraging habitat must provide replacement habitat land acceptable to CDFW and the County. Land can be provided through in fee title or through a conservation easement. The Sacramento County Office of Planning and Environmental Review administers the Swainson's Hawk Impact Mitigation Program.

The methodology for determining impacts to foraging habitat in 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 percent 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 percent loss of habitat value between AG-20 and AR-10 is due to the change in land use from general agriculture to agricultural-residential. The methodology does allow case-by-case analysis for projects with unique characteristics.

Table BR-5: Swainson's Hawk Mitigation Values

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%

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. The SSHCP is meant to serve as an alternative way to address impacts to critical habitat and the Recovery Plan. 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 urban development area. The urban development area 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. 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, including a streamlined Clean Water Act 404 permit process, 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 anticipated SSHCP. The SSHCP and supporting EIS/EIR have approved and certified, respectively, by the County Board of Supervisors and the issuance of permits by the resource agencies has been completed.

Impacts and Analysis

Significance Criteria

The significance of an environmental impact cannot always be determined through use of a specific, quantifiable threshold. CEQA Guidelines Section 15064(b) affirms this by the statement: "An ironclad definition of significant effect is not always possible because the significance of an activity may vary with the setting." Significance of an impact to the biological resources discussed in this chapter rely on the policies, codes, and regulations described in the Regulatory Setting section, as well as the following CEQA Sections:

SECTION 15065

(a) A lead agency shall find that a project may have a significant effect on the environment and thereby require an EIR to be prepared for the project where there is substantial evidence, in light of the whole record, that any of the following conditions may occur:

(1) The project has the potential to*:* substantially degrade the quality of the environment*;* substantially reduce the habitat of a fish or wildlife species*;* cause a fish or wildlife population to drop below self-sustaining levels*;* threaten to eliminate a plant or animal community*;* substantially reduce the number or restrict the range of an endangered, rare or threatened species*;* or eliminate important examples of the major periods of California history or prehistory.

SECTION 15382

"Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment. A social or economic change related to a physical change may be considered in determining whether the physical change is significant.

Standards for determining thresholds of significance were established based on the State CEQA Guidelines and professional standards, including the County-specific thresholds from the County's Initial Study Checklist. Impacts to biological resources were considered significant if the Project would:

1. Have a substantial adverse effect on any special-status species, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, or threaten to eliminate a plant or animal community;
2. Have a substantial adverse effect on riparian habitat or other sensitive natural communities;
3. Have a substantial adverse effect on protected surface waters, as defined by the USACE 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. Adversely affect or result in the removal of native or landmark trees;
6. Conflict with any local policies or ordinances protecting biological resources; or
7. Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or approved local, regional, or state habitat conservation plan.

METHODOLOGY

The methodologies used to determine significance rely on documents published by or endorsed by regulatory agencies. The applicable documents and methods are cited and described in the impact discussions below. In absence of such published documents, the analyses rely on the general definitions of significance. In addition, information from database searches and technical studies conducted in the Plan Area, as listed in the introduction to this Biological Resources chapter, is incorporated into the impact analysis (refer to Appendix BR-1).

Note that the biological reports were only prepared for the portion of the Plan Area that was owned by Project Applicant on the date that they were prepared.

PROJECT IMPACT AREAS AND AVOIDED AREAS

As discussed in Chapter 2, “Project Description,” the Plan Area is 1,391 acres. The Project includes 214.3 acres of wetland preserve, while Alternative 2 includes 259.8 acres of wetland preserve (Table BR-6).

Table BR-6: Preserve Area, Project and Alternative 2

Alternatives	Direct Impact Area from Development (acres)	Preserved Area (acres)	Agricultural Area (acres)
Proposed Project 4	1,176.7	214.3	109.8
Alternative 2	1,131.2	259.8	74.7

For biological impact analysis purposes, this wetland preserve is being treated as an avoided area. The preserve area includes Morrison Creek and is characterized by annual grassland with vernal pools connected by riverine seasonal wetlands, with some depressional seasonal wetlands. The wetland preserve is contiguous with similar preserves on lands to the north (Mather Field Preserve) and east (proposed as part of the pending NewBridge Project).

Additionally, the Project reserves approximately 110 acres of the Plan Area as Agriculture (Table BR-6). However, the EIR assumes the potential future development of this area; therefore, this is treated as an impact area in the analysis. The Project Applicant also proposes several greenbelt areas, the primary purpose of which is to convey stormwater flows offsite into Elder Creek and an adjacent mining pit, and to provide opportunities for trail connections within the development. A naturalized channel would be created within the greenbelt areas, which would require grading activities within all parts of the greenbelt. Thus, while the completed channels would include some restored wetland function and value, these are not preserved areas and are treated as impact areas in the analysis.

IMPACT: LOSS OF HABITAT FOR VERNAL POOL INVERTEBRATES

PROPOSED PROJECT

Vernal pools and seasonal wetlands throughout the Plan Area are known to support special-status species including populations of the federally listed vernal pool fairy shrimp and vernal pool tadpole shrimp. Plate BR-5 details the extent of habitat suitable to support vernal pool species. The Project would result in direct loss and indirect degradation of suitable and occupied habitat and in incidental take (death) of these species. Most of the Plan Area is within the Mather Core Area identified in the vernal pool recovery plan (USFWS 2005) as vital to the recovery of vernal pool fairy shrimp and vernal pool tadpole shrimp and is designated by the USFWS as critical habitat for these two species.

The acreage of potential direct and indirect effects to habitat for vernal pool invertebrates are summarized in Table BR-7 and Plate BR-6. Direct effects would occur if habitat for vernal pool invertebrates is affected by site grading or other ground disturbing activities. In calculating direct effects to habitat for vernal pool invertebrates, it is assumed that if any portion of a vernal pool, vernal swale or seasonal wetland is removed by site grading or other ground disturbing impacts, then the entire feature is directly affected (i.e., lost). Direct effects to dispersal habitat such as channels and streams were limited only to the portions of the feature directly filled. 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. Indirect effects may occur if proposed activities alter the surface and/or subsurface hydrology of the area. 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. Alternatively, the SSHCP methodology for determining indirect impacts states that if more than 10 percent of a vernal pool watershed is affected, that wetland is considered to be indirectly affected.

As illustrated in the land use plan, this Project would include an approximately 214-acre wetland preserve along the northern and eastern boundaries of the Plan Area and the remainder of the Plan Area would be developed with various land uses. There are 30.30 acres of vernal pool invertebrate habitat within the Applicant-owned properties where development is proposed, and 6.02 acres are within the proposed wetland preserve. Therefore, development would directly fill 30.30 acres of vernal pool invertebrate habitat. Additionally, development would occur within 250 feet of a portion of the suitable habitat within the preserve, which would result in an additional 1.47 acres of indirect impact. Additionally, 1.89 acres of vernal pools occur in the eastern edge of the preserve within 250 feet of potential development on adjacent parcels and may therefore be subject to indirect impacts from adjacent development. However, as

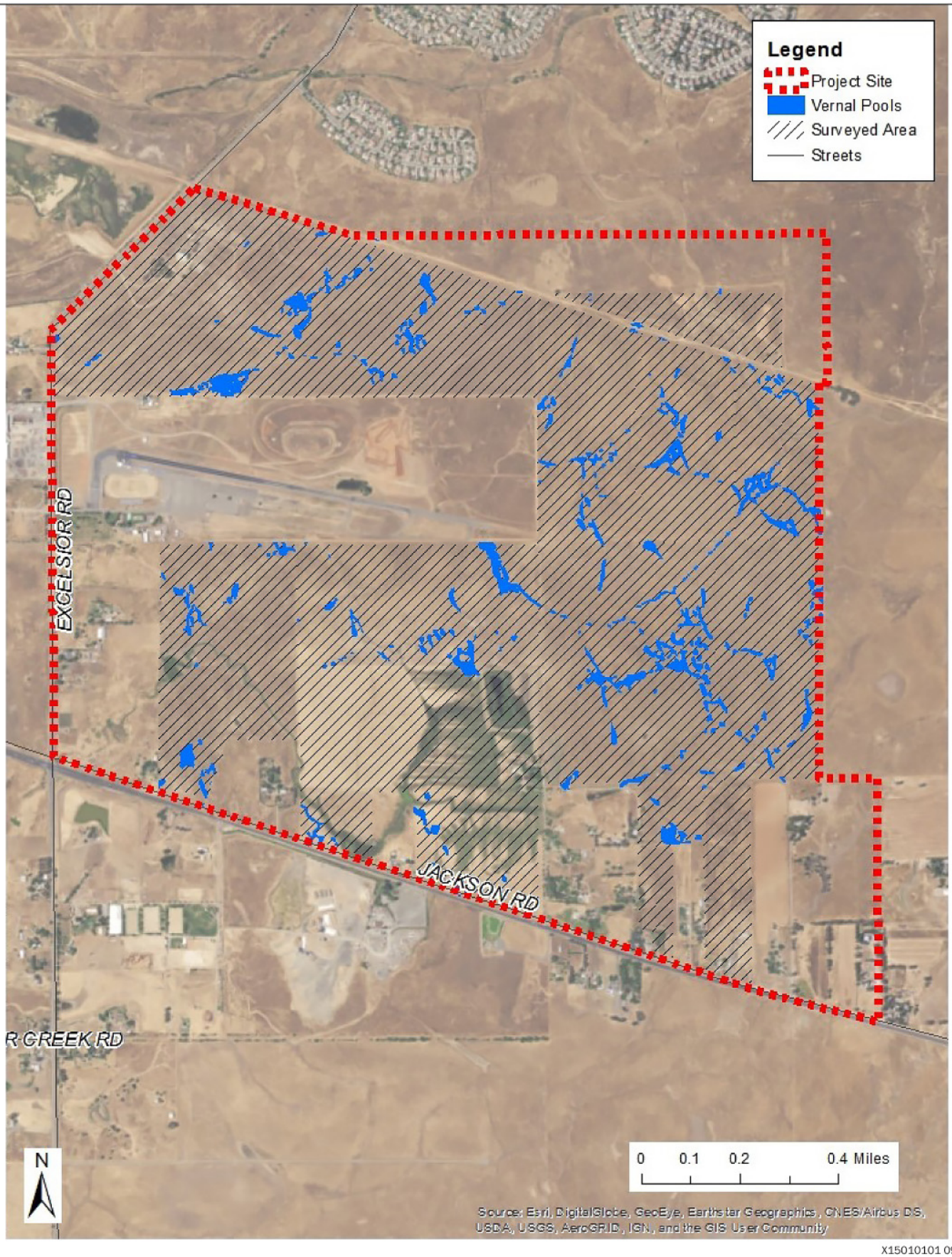


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Plate BR-5: Vernal Pool Invertebrate Habitat Map

ASCENT ENVIRONMENTAL

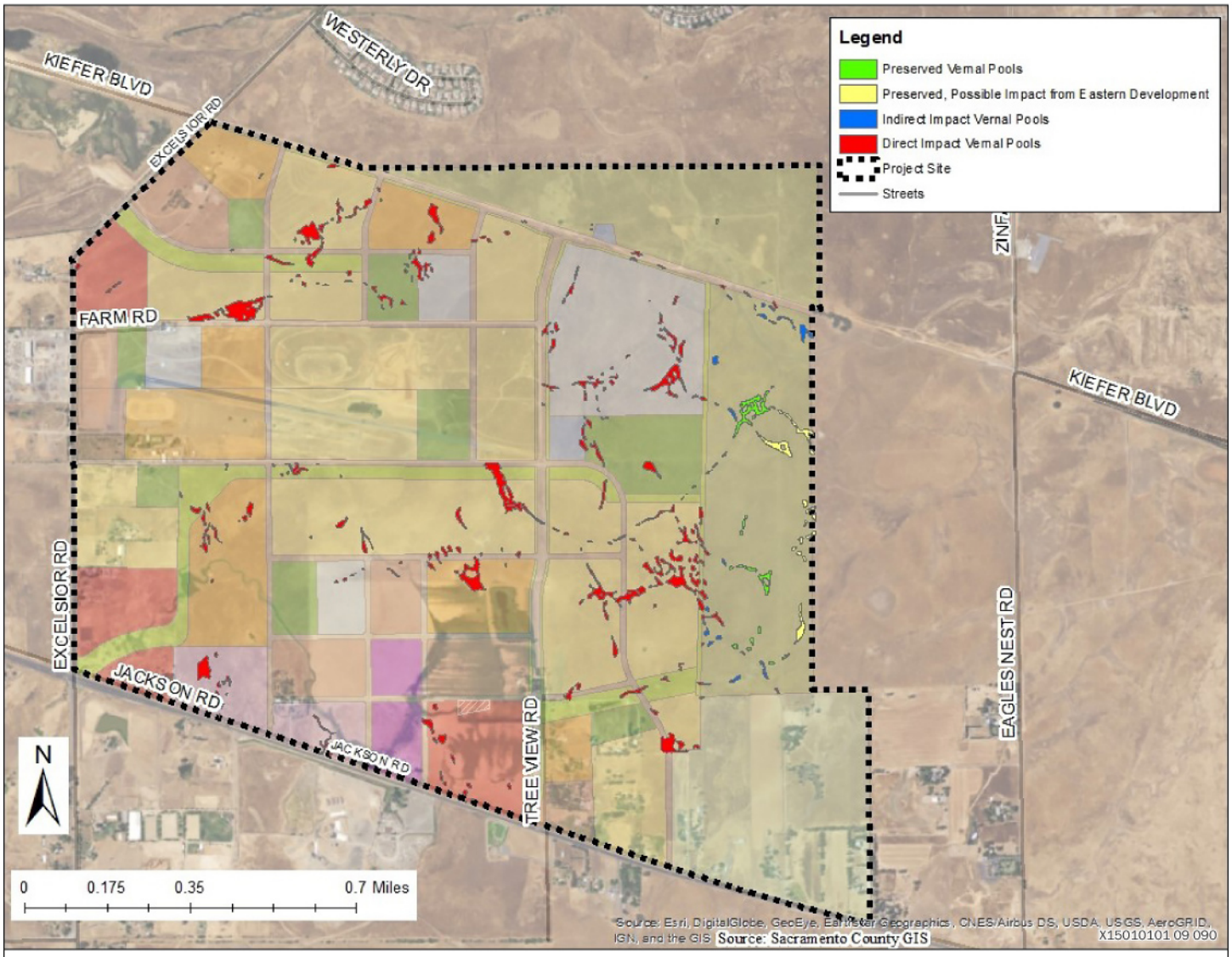

Plate BR-6: Proposed Project Vernal Pool Invertebrate Habitat Impact Map

ASCENT ENVIRONMENTAL

mentioned above, the SSHCP methodology for determining indirect impacts was utilized in defining hardline preserves, including the preserve proposed as part of Alternative 2 and adjacent preserves in the proposed NewBridge Specific Plan area to the east. There are 4.55 acres of vernal pool invertebrate habitat within the preserve that would not be subject to indirect impacts; therefore, these vernal pools are considered preserved.

Upon approval of the Project, the preserved lands would be acquired by the South Sacramento Conservation Agency as part of the approved SSHCP Preserve system even if the Project Applicant does not obtain take coverage for the Project. Through this acquisition, the South Sacramento Conservation Agency can ensure that any subsequent activities such as installation of roads, bicycle and pedestrian trails, outfalls, water quality basins, post and cable fencing, benches, trash receptacles, and interpretive signs that are proposed within the preserve area would be subject to the Avoidance and Minimization Measures outlined in the SSHCP. Therefore, indirect impacts to vernal pool invertebrate habitat from these activities within the preserve would be sufficiently avoided and would be outside of the scope of this analysis.

Table BR-7: Impacts to Suitable Vernal Pool Invertebrate Habitat, Project and Alternative 2

Alternatives	Suitable Habitat for Vernal Pool Crustaceans			
	Direct Impact (acres)	Indirect Impact (acres)	Preserved Habitat (acres)	Preserved Vernal Pools, Possible Impact from Eastern Development (acres)
Proposed Project	30.30	1.47	4.55	1.89
Alternative 2	25.61	4.13	10.61	1.89

While the Project would avoid some vernal pools, swales and seasonal wetlands by including these waters in the wetland preserve, the Project nonetheless would result in the loss of suitable and occupied vernal pool invertebrate habitat within the Plan Area, and death of federally listed vernal pool fairy shrimp and vernal pool tadpole shrimp in occupied habitat. Loss of this habitat, especially given that this is in a core recovery area and designated critical habitat for federally listed species, would be a **significant** impact. 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 eliminate occupied habitat within the Mather Core Area, adversely affect designated critical 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, and potentially interfering with the ability to recover the species.

USFWS indicates that 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 the 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 30.30 acres of vernal pool invertebrate habitat from the Plan Area would require preservation of 60.60 acres of existing vernal pool invertebrate habitat and creation of 30.30 acres of vernal pool invertebrate habitat (total of 90.90 acres). Indirect impacts to 1.47 acres of vernal pool invertebrate habitat would require preservation of an additional 1.47 acres of vernal pool invertebrate habitat.

Implementing Mitigation Measures BR-1 and BR-2 would reduce potentially significant impacts on vernal pool invertebrates, but not necessarily to a less-than-significant level because of the extent of occupied and potential habitat loss and degradation. Removal of over 500 acres of vernal pool grassland complex with 30 acres of vernal pools from the Mather Core Area is a substantial loss of habitat identified by USFWS as being vital to the recovery of these species. While implementation of Mitigation Measure BR-1 would result in compensation for loss of habitat, it is unlikely that compensation would occur within the Mather Core Recovery Area or within designated critical habitat because there is a limited amount of habitat available in the core area and a large proportion of it has already been developed or is planned for development, or is already spoken for as mitigation for other planned development. There are currently no mitigation banks that service Sacramento County with credits available to fully cover the loss of habitat resulting from Project implementation. Therefore, it is highly unlikely that 90.90 acres of compensatory vernal pool invertebrate habitat could be acquired in the Mather Core Recovery Area despite the USACE requirement that impacts to vernal pool wetlands be mitigated within that area (USACE 2011), and habitat outside of the core area would not provide the same habitat value to the species. Therefore, this impact would remain **significant and unavoidable**.

Alternatively, the Project Applicant may seek and obtain coverage under the SSHCP, by implementing Mitigation Measure BR-2. This mitigation measure would reduce potentially significant impacts on vernal pool invertebrates to **less than significant with mitigation** because this measure would require the Project Applicant to participate in the SSHCP reserve system through fee payment or land dedication to offset habitat loss and implement onsite avoidance and minimization measures. The SSHCP, once fully implemented, would provide an alternative strategy to conservation and recovery of these species in the region, in a coordinated manner.

ALTERNATIVE 2

In the event that Alternative 2 is adopted in lieu of the Project, impacts to vernal pool invertebrates may differ from those under the Project because impacts are dependent on the acreage of vernal pools adversely affected (see Table BR-7). Alternative2 would have a reduced acreage of impact to vernal pool invertebrate habitat when compared to the Project. Alternative 2 would result in loss of habitat for vernal pool invertebrates and death of listed vernal pool invertebrates that could cause substantial reductions in the populations of these species and inhibit their recovery. Therefore, the impacts related to the vernal pool invertebrates under all alternatives would be **significant**. As discussed for the Project above, implementation of Mitigation Measure BR-1 would reduce impacts on vernal pool invertebrates, but the impact would remain **significant and unavoidable** for Alternative 2. Should the Project Applicant seek and obtain coverage under the

SSHCP, implementation of Mitigation Measure BR-2 would reduce impacts from Alternative 2 on vernal pool invertebrates to **less than significant with mitigation**.

Mitigation Measures

BR-1: To reduce impacts to listed vernal pool invertebrates and wetland habitat the Project Applicant and all subsequent developers of non-participating parcels shall comply with one or a combination of the following:

1. *Total Avoidance: Species is present or assumed to be present.* Unless a smaller buffer is approved through formal consultation with USFWS, construction fencing shall be installed a minimum of 250 feet from the delineated wetland margin. All construction activities are prohibited within this buffer area. If total avoidance is achieved, no further action is required.

2. 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 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 onsite or offsite restoration 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 or subsequent developer(s) 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 would 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

Or,

BR-2: Obtain coverage for the Project under the SSHCP. In addition to payment of development fees and dedication of land in accordance with the SSHCP, the Project Applicant shall implement all applicable Avoidance and Minimization Measures codified in the SSHCP at the time permits are obtained. Draft Avoidance and Minimization Measures currently provided in the SSHCP are included in Appendix BR-3.

IMPACT: SPECIAL-STATUS PLANTS

PROPOSED PROJECT

The Plan Area has potential to support the following vernal pool-associated special-status plant species: Ahart's dwarf rush, Boggs Lake hedge-hyssop, legenere, Sacramento Orcutt grass, and slender Orcutt grass, as well as Sanford's arrowhead, which occur in perennial waterways, ponds, and marsh habitats. Botanical surveys for special-status plant species were conducted on the Applicant-owned properties in May

and June of 2014, and no populations of any special-status plant species were observed. Focused surveys of the Applicant-owned properties were conducted for Sacramento orcutt grass and slender orcutt grass (vernal pool grasses) in 2006 and 2007 with negative results. However, because protocol-level surveys were not conducted over the entire Plan Area, the most recent surveys were conducted during a drought year and reference sites were not visited to confirm successful establishment of target species that year, and the surveys are outdated according to agency standards, the potential for these species to occur cannot be ruled out. Legenere has been documented previously on the non-participating properties near the Mather Preserve (CNDDB 2018) in an area designated as wetland preserve under the proposed project land use plan. Most of the Plan Area is within the Mather Core Area and is designated by the USFWS as critical habitat for slender orcutt grass and Sacramento orcutt grass. As discussed above, the occurrence of these species within the Plan Area cannot be ruled out. Additionally, critical habitat and the vernal pool recovery areas are designated for USFWS to meet their mandate to recover listed species by preserving suitable habitat. Therefore, Project implementation would result in an adverse effect to designated critical habitat for these vernal pool grasses as well as loss of Mather Core Area habitat, which is considered vital to the recovery of Sacramento Orcutt grass. Ninety-five percent of the Mather Core Area habitat would have to be protected for Sacramento Orcutt grass to have a chance at being downlisted from endangered status to threatened and 100 percent of Mather Core Area habitat would have to be protected for the species to be delisted (i.e., recovered). Therefore, the loss of habitat within the Plan Area would preclude this species from being delisted.

In addition to direct loss of habitat, special-status plant species could be adversely affected by habitat degradation resulting from development adjacent to preserved habitats within or adjacent to the Plan Area.

Project implementation would result in removal of suitable vernal pool habitat for special-status vernal pool plants and Sanford’s arrowhead. The loss of 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, and loss of their critical habitat, would interfere with recovery goals for these species and could further reduce their overall population numbers. Therefore, the loss of special-status plants and loss of critical habitat and Mather Core Area would be a **significant** impact. However, the implementation of Mitigation Measures BR-3 and BR-4 would reduce impacts on special-status plants to **less than significant with mitigation**, through survey, avoidance, or where avoidance is not feasible, transplantation or compensatory mitigation. In addition, should the Project Applicant seek and obtain coverage under the SSHCP, implementation of Mitigation Measure BR-2 would reduce impacts on special-status plants to **less than significant with mitigation**, through survey and avoidance or compensatory mitigation on an established SSHCP Preserve.

ALTERNATIVE 2

In the event that Alternative 2 is adopted in lieu of the Project, impacts to special-status plants would differ from those under the Project because impacts are dependent on the acreage of suitable habitat lost. Alternative 2 would have a reduced acreage of impact to special-status plant habitat when compared to the Project (Table BR-7). Therefore, the loss of special-status plants and loss of critical habitat and Mather Core Area habitat under Alternative 2 would be **significant**. As discussed for the Project above, implementation of Mitigation Measures BR-3 and BR-4 would reduce impacts on special-status plants to **less than significant with mitigation** for Alternative 2. Should the Project Applicant seek and obtain coverage under the SSHCP, implementation of Mitigation Measure BR-2 would reduce impacts on special-status plants from Alternative 2 to **less than significant with mitigation**.

MITIGATION MEASURES

BR-3: Before any grading, grubbing, or excavation of the Plan Area within 250 feet of a vernal pool or other suitable habitat, rare plant surveys shall be performed. The surveys should be floristic in nature, meaning that all plant species found in the survey area shall be identified to the taxonomic level necessary to determine rarity and listing status. The rare plant surveyor shall have experience as a botanical field investigator and familiarity with the local flora and potential rare plants in the habitats to be surveyed. The surveys shall be conducted when the rare plants at the site will be easiest to identify (i.e., flowering stage), and when the plants reach that stage of maturity. Nearby reference populations shall be visited before surveys, if available, to confirm the target species have emerged and are in an identifiable state. A minimum of three site visits spread throughout the growing season (at least 14 days apart) shall be required to capture the botanical diversity of the Plan Area.

The Project Applicant or subsequent developer(s) shall submit a written report to the Sacramento County Environmental Coordinator which describes the survey. The survey report should include a brief description of the vegetation, survey results (which includes a list of all species observed), photographs, time spent surveying, date of surveys, a map showing the location of the survey route and any rare plant populations and copies of any rare plant occurrence forms. If no rare plants are found, no further mitigation for plant species is required. If a special-status plant is located, the Project Applicant or subsequent developer(s) shall complete and submit to the CNDDB a California Native Species Field Survey Form or equivalent written report, accompanied by a copy of the relevant portion of a 7.5-minute topographic map with the occurrence mapped.

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).
- Notify CDFW, as required by the California Native Plant Protection Act, of any special-status plants or any plant species listed under the Endangered Species Act are found.
- Develop a mitigation and monitoring plan to compensate for the loss of any special-status plant species found during surveys. The mitigation and monitoring plan shall be submitted to CDFW and/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 offsite populations on project mitigation sites through seed collection or transplantation, purchasing credits at an agency-approved mitigation bank, and/or preserving occupied habitat offsite in sufficient quantities to offset loss of occupied habitat or individuals.
- 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. 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.

BR-4: Surveys for Sanford's Arrowhead shall be performed by a qualified botanist during the species non-dormant, flowering period (May – October) before any

ground disturbing activities within suitable habitat inside the Plan Area. Results of the surveys should be summarized in a report and submitted to the Environmental Coordinator for their review and comments. The survey report shall include a brief description of the vegetation, survey results, photographs, time spent surveying, date of surveys, a map showing the location of the survey route and any Sanford's Arrowhead populations. If the species is not found during the survey, no further mitigation would be required. If plant(s) are found, the botanist shall establish distribution of the colony(s) and estimate the number of individuals in the population. Unless deemed infeasible by the Environmental Coordinator, all plants or tuber/rhizomes shall be removed from the area of impact and transplanted to a new or existing preserve or, if the impact is temporary, replanted in the same location after the disturbance. Monitoring shall be performed annually at the transplant location for a period of 3 years to ensure success. Results of all surveys shall be submitted to the Environmental Coordinator. If survival is not meeting a minimum 60 percent survivorship, transplantation will be deemed failed. In cases where transplanting is deemed infeasible, or where transplanting has failed, compensatory mitigation shall be submitted to the Environmental Coordinator. Compensatory mitigation shall consist of placement of a conservation easement over a known, unprotected population of the species.

Or,

Implement Mitigation Measure BR-2.

IMPACT: LOSS OF HABITAT FOR VALLEY ELDERBERRY LONGHORN BEETLE

PROPOSED PROJECT

Elderberry shrubs are the host plant for valley elderberry longhorn beetle. No elderberry shrubs have been found on the Applicant-owned property; however, the non-participating properties have not been surveyed and elderberry shrubs may be present in those areas. Should elderberry shrubs occur on the non-participating properties, then future construction in this portion of the Plan Area could remove elderberry shrubs or result in decreased vigor of shrubs due to creation of dust during construction. The loss or decrease in vigor of elderberry shrubs may result in a further reduction in the population of valley elderberry longhorn beetle, which is currently listed as threatened under the ESA. Therefore, the loss of habitat for valley elderberry longhorn beetle would be **potentially significant**. However, implementation of Mitigation Measure BR-5 would reduce impacts on valley elderberry longhorn beetle to **less than significant with mitigation** because surveys would be required and elderberry shrubs would be avoided to the extent feasible, or compensation for loss of valley elderberry longhorn beetle habitat would be provided through USFWS-approved mitigation measures. Implementation of this mitigation would reduce impacts from the Project such that it would not inhibit recovery of the species or result in loss of viability of the species in the region. Alternatively, the Project Applicant may obtain coverage under the SSHCP, as described in Mitigation Measure BR-2. Implementation of Mitigation Measure BR-2 would provide development fees or land dedication in accordance with that Plan and

implement all Avoidance and Minimization Measures, thereby reducing impacts on valley elderberry longhorn beetle to **less than significant with mitigation.**

ALTERNATIVE 2

In the event that Alternative 2 is adopted in lieu of the Project, impacts to valley elderberry longhorn beetle would remain the same as they would under the Project because impacts are dependent on the number of elderberry shrubs lost during construction on non-participating properties. The development proposed under Alternative 2 for non-participating properties have slightly different placement of land uses than the Project; however, the location and level of development throughout the Plan Area is the same and therefore, Alternative 2 would result in the same level of potential for impact to valley elderberry longhorn beetle. Therefore, as discussed for the Project, with the implementation of Mitigation Measure BR-5 the impacts related to valley elderberry longhorn beetle under Alternative 2 would be **less than significant with mitigation**. Should the Project Applicant seek and obtain coverage under the SSHCP, implementation of Mitigation Measure BR-2 would reduce impacts on valley elderberry longhorn beetle from Alternative 2 to **less than significant with mitigation**.

MITIGATION MEASURES

BR-5: 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 and subsequent developer(s) 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 Applicant and subsequent developer(s) shall mitigate for the loss of the valley elderberry beetle habitat according to the USFWS 2017 Framework.
- The Project Applicant and subsequent developers shall comply with ESA and consult with USFWS and 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 Applicant or subsequent developer(s) 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 Applicant or subsequent developer(s) 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.

Or,

Implement Mitigation Measure BR-2.

IMPACT: LOSS OF BURROWING OWLS AND HABITAT

PROPOSED PROJECT

As discussed in the Environmental Setting section of this chapter, no burrowing owl burrows have been observed on the Plan Area; however, this species has a high potential for occurrence on the entire Plan Area because suitable nesting and foraging habitat is present within the project vicinity. Also, a burrowing owl was observed on the Plan Area in 2010 and adjacent to the Plan Area in 2018 and many rodent burrows were observed throughout the Plan Area, which provide suitable nesting habitat for the burrowing owl.

The potential presence of burrowing owl cannot be ruled out without protocol-level surveys. Adults, eggs, and juveniles could be killed during site grading and other ground disturbance that destroys occupied burrows or nest sites. Burrowing owls always need burrows 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. However, implementing Mitigation Measures BR-6 and BR-7 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 Plan Area 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. Alternatively, the Project Applicant may obtain coverage under the SSHCP, and implement Mitigation Measure BR-2, which would provide development fees or land dedication in accordance with the SSHCP and implement all Avoidance and Minimization Measures including those specific to western burrowing owl. Therefore, the impacts on western burrowing owl would be reduced to **less than significant with mitigation**.

ALTERNATIVE 2

In the event that Alternative 2 is adopted in lieu of the Project, impacts to western burrowing owls and habitat would differ from those under the Project because impacts are dependent on the acreage of suitable habitat lost. Although the total acreage of impact would be less under Alternative 2, this alternative would result in a loss of suitable burrowing owl habitat and could result in mortality of adults, chicks, or eggs. Therefore, the impacts to western burrowing owls would be **potentially significant**. As discussed for the Project above, implementation of Mitigation Measures BR-6 and BR-7 would reduce impacts on western burrowing owl and suitable habitat to **less than significant with mitigation** for Alternative 2. Should the Project Applicant seek and obtain coverage under the SSHCP, implementation of Mitigation Measure BR-2 would reduce impacts on western burrowing owls and suitable habitat for Alternative 2 to **less than significant with mitigation**.

MITIGATION MEASURES

BR-6: 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 Applicant and subsequent developer(s) shall hire a qualified biologist to conduct surveys in accordance with Appendix D of CDFW's Staff Report on Burrowing Owl Mitigation (CDFW 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 proposed wetland 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 Applicant or subsequent developer(s) 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 an escape route will always be maintained during excavation. This may include inserting an artificial structure into the burrow to avoid having materials collapse into the burrow and trap owls inside. Passive relocation shall not be used unless expressly approved by CDFW as part of the burrowing owl exclusion and relocation plan and should not be implemented unless alternate burrows are available nearby (within 500 feet) for displaced owls to relocate. If natural burrows are not available, the Proejct Applicant or subsequent developer(s) will create artificial burrow systems in the preserve lands within 500 feet of destroyed burrows if practicable given geographical distances between the affected burrows and available preserve lands.

BR-7: 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 Applicant or subsequent developer(s) 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 adversely affected 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 Applicant or subsequent developer(s) 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.
- 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 proposed wetland 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 proposed wetland 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.

Or,

Implement Mitigation Measure BR-2.

Impact: Loss of Tricolored Blackbird Nesting and Foraging Habitat

Proposed Project

As discussed in the Environmental Setting section of this chapter, tricolored blackbirds have been observed in the Plan Area; and suitable nesting and foraging habitat is present within the Plan Area. 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. 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 proposed wetland 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 nest abandonment if a colony is nesting within the Plan Area. 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**. However, implementation of Mitigation Measure BR-8 would reduce potentially significant impacts on tricolored blackbird to **less than significant with mitigation** because this measure would require that active nests and nesting colonies in the Project vicinity be identified and avoided or monitored during the nesting season so that Project construction would not result in nest abandonment and loss of eggs or young. Alternatively, the Project Applicant or subsequent developer(s) may obtain coverage under the SSHCP, and implement Mitigation Measure BR-2, which would also reduce impacts to **less than significant with mitigation**. BR-2 would require development fees or land dedication in accordance with that Plan and implementation of all Avoidance and Minimization Measures including those specific to tricolored blackbird.

Alternative 2

In the event that Alternative 2 is adopted in lieu of the Project, impacts to tricolored blackbirds and suitable habitat would differ from those under the Project, because impacts are dependent on the acreage of suitable habitat lost. The area of impact from proposed development is shown in Table BR-6. Although the total acreage of impact would vary, this alternative would result in the potential loss of tricolored blackbird habitat, or nesting colonies. Therefore, the impacts to tricolored blackbird would be **potentially significant**. As discussed for the Project above, implementation of Mitigation Measure BR-8 would reduce impacts from Alternative 2 on tricolored blackbird and suitable habitat to **less than significant with mitigation**. Should the Project Applicant or subsequent developer(s) seek and obtain coverage under the SSHCP, implementation of Mitigation Measure BR-2 would reduce impacts on tricolored blackbird and suitable habitat to **less than significant with mitigation** for Alternative 2.

Mitigation Measures

BR-8: If construction activity (which includes clearing, grubbing, or grading) is to commence within 0.25 mile of suitable tricolored blackbird nesting habitat between March 15 and August 31, a survey for nesting tricolored blackbirds shall be conducted by a qualified biologist. The survey shall cover all potential

nesting habitat onsite and offsite up to a distance of 0.25 mile from the project boundary. The survey shall occur no more than 48 hours before the onset of activities for signs of tricolored blackbird individuals or nesting/colonial activity. The biologist shall supply a written report (including date, time of survey, survey method, name of surveyor and survey results) to the Environmental Coordinator before ground disturbing activity. If no tricolored blackbird are found during the pre-construction survey, no further mitigation shall be required. If an active tricolored blackbird colony is found onsite or within 0.25 mile of the Plan Area, the Project Applicant or subsequent developer(s) shall do the following:

1. If necessary, modification to the project design to avoid removal of occupied habitat while still achieving project objectives shall be evaluated and implemented to the extent feasible.
2. Under CDFW consultation, the Project Applicant or subsequent developer(s) may avoid impacts to tricolored blackbird by establishing a 0.25 mile temporary setback, with fencing that prevents any project activity within 0.25 mile of the colony. 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 nesting, 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. A qualified biologist shall verify that setbacks and fencing are adequate and will determine when the colonies are no longer dependent on the nesting habitat (i.e., nestling have fledged and are no longer using habitat). The breeding season typically ends by mid-July but shall be verified by a qualified biologist.
3. If tricolored blackbird nesting habitat is permanently destroyed follow the CDFW procedure to mitigate for habitat loss, which typically would be mitigated at a 1:1 ratio, and submit documentation of the mitigation to the Environmental Coordinator.

Or,

Implement Mitigation Measure BR-2.

IMPACT: LOSS OF SWAINSON'S HAWK FORAGING HABITAT

PROPOSED PROJECT

The Plan Area provides foraging habitat for Swainson's hawk. The Plan Area is zoned a mix of AG-80, AG80(SM), M-1, and IR. According to the Countywide methodology, the M-1 and IR lands do not retain protected habitat value, while the AG-80/AG-80(SM) lands retain 100 percent of protected habitat value. The site includes approximately 736

acres of AG-80 land, approximately 517 acres of which will be rezoned to SPA. Not all of the AG-80 property is being rezoned at this time because the Project only includes a rezone request for the portions of the site which are owned by the Project Applicant. Table BR-8 and Plate BR-7 depict this analysis.

Table BR-8: Swainson's Hawk Impacts from Proposed Project

Existing Zoning	Applicant-owned Properties (acres)	Assumed Habitat Percentage	Swainson's Hawk Habitat (acres)
AG-80	192.9	100%	192.9
IR	23.1	0%	0
AG-80 (SM)	323.8	100%	323.8
M-1	325.4	0%	0
		Total	**516.7**

Note: Swainson's hawk foraging habitat impact acreages would be different if calculated under the SSHCP methodology. Exact acreage would be determined at the time of application for project-specific permits under the SSHCP.

The rezoning of AG-80 land to SPA would result in the loss of 516.7 acres of Swainson's hawk habitat. The remaining AG-80 lands (219 acres) will be lost when rezone of those properties is proposed in the future. In total, the buildout of the Project will result in the loss of 736 acres of Swainson's hawk foraging habitat.

In addition to the 516.7 acres which would be lost as part of the Project, and the 219 acres which may be lost in the future (should the properties be rezoned), the Project Applicant proposes a 214.3-acre wetland preserve on lands currently zoned IR and M-1[1]. This will preserve further suitable foraging habitat, though its value to the species will depend on how well the preserve is ultimately connected to other open space areas. Based on the existing conditions, the preserve within the fully-developed Project would be well-connected to suitable foraging habitat north, south, and east of the Plan Area.

The loss of Swainson's hawk foraging habitat from the rezoning of the Applicant-owned properties and the potential future loss if additional properties in the Plan Area are rezoned would be a **potentially significant** impact, because this loss would contribute to the continuing loss of valuable habitat from a core population center in the Sacramento Valley and further decline of a species that is listed as threatened under CESA. This amount of grassland conversion would result in a substantial decrease in the available foraging habitat for locally nesting Swainson's hawks, which could result in displacement of nesting pairs, reduction in reproductive potential, or decreased survival rates, particularly for hawks nesting within 1 mile of the Plan Area, but also for hawks nesting within 10 miles.

[1] Note that this preservation acreage cannot be counted toward required compensation.

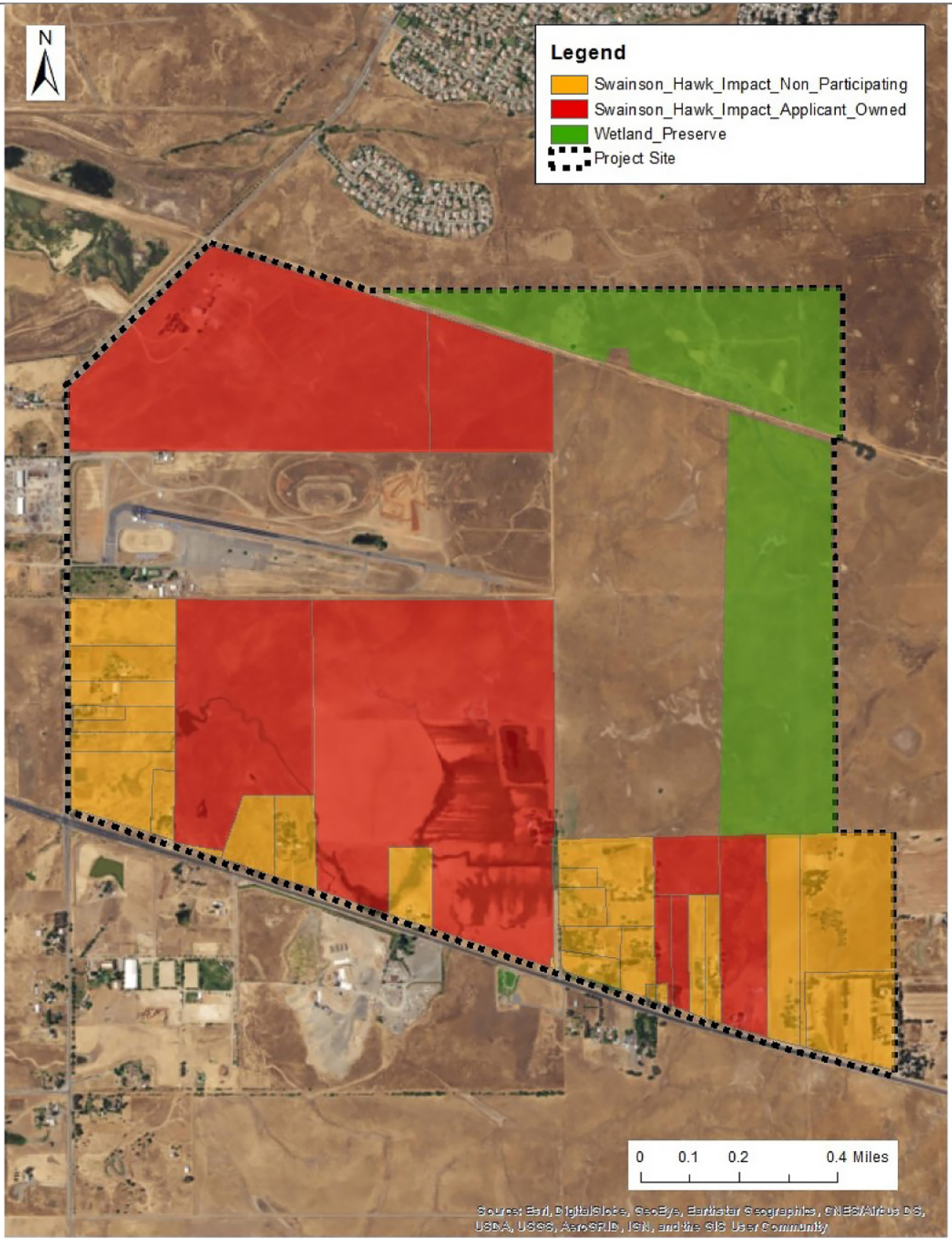

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Plate BR-7: Swainson's Hawk Impact Map

ASCENT ENVIRONMENTAL

Implementation of Mitigation Measures BR-9 and BR-10 would reduce potentially significant impacts on Swainson's hawk foraging habitat to a **less-than-significant** level. Alternatively, the Project Applicant may obtain coverage under the SSHCP, and implement Mitigation Measure BR-2. Implementation of Mitigation Measure BR-2 would reduce impacts on Swainson's hawk, because participation in the SSHCP would result in preservation of Swainson's hawk foraging habitat in a coordinated and interconnected SSHCP reserve system that considers the species requirements at a regional scale rather than, project-by-project, and presents a coordinated conservation strategy to maintain species viability in the region over the long term The impact of the project on Swainson's hawk would therefore be reduced to **less than significant with mitigation**.

Alternative 2

If Alternative 2 is adopted in lieu of the Project, impacts to Swainson's hawk foraging habitat would remain the same as under the Project because impacts are dependent on where the development would occur within the current zoning of the of the various portions of the Plan Area. While Alternative 2 would result in a larger wetland preserve and a smaller area of development than the Project, the additional area of preserve would be in the portion of the Plan Area zoned M-1, which is assumed to provide no habitat value in the impact analysis. Therefore, based on the methodology used above, this alternative would result in the same impact of 516.7 acres of foraging habitat. As discussed for the Project above, implementation of Mitigation Measures BR-9 and BR-10 would reduce impacts from Alternative 2 on Swainson's hawk foraging habitat; the impact after mitigation would be **less than significant with mitigation**. Also, as discussed for the Project, should the Project Applicant seek and obtain coverage under the SSHCP, implementation of Mitigation Measure BR-2 would reduce impacts on Swainson's hawk foraging habitat to **less than significant with mitigation** for Alternative 2.

Mitigation Measures

BR-9: Before any site disturbance, such as clearing or grubbing, the issuance of any permits for grading, building, or other site improvements, or recordation of a final map, whichever occurs first, or, if only a rezone is requested, before final adoption of the zoning agreement, implement one of the following options to mitigate for the loss of 516.7± acres of Swainson's hawk foraging habitat on the Applicant-owned properties:

1. The project Applicant shall utilize one or more of the mitigation options (land dedication and/or fee payment) established in Sacramento County's Swainson's Hawk Impact Mitigation Program (Chapter 16.130 of the Sacramento County Code).
2. The project Applicant shall, to the satisfaction of CDFW, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat at a ratio of 1 acre preserved for every acre lost as a result of the project. Preservation habitat shall be of equal or better foraging quality than the habitat lost and shall be managed in perpetuity for Swainson's hawk foraging values.

3. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee payable before issuance of building permits) before the implementation of one of the measures above, the project Applicant may be subject to that program instead.

BR-10: When a rezone is requested on non-participating properties, the current property owner shall implement one of the below options to mitigate for the loss of Swainson's hawk foraging habitat on the parcel(s) being rezoned. Acreage will be the total acreage being rezoned (up to 219 acres). Mitigation will occur before any site disturbance, such as clearing or grubbing, the issuance of any permits for grading, building, or other site improvements, or recordation of a final map, whichever occurs first, or, if only a rezone is requested, before final adoption of the zoning agreement:

1. The project Applicant shall utilize one or more of the mitigation options (land dedication and/or fee payment) established in Sacramento County's Swainson's Hawk Impact Mitigation Program (Chapter 16.130 of the Sacramento County Code).
2. The project Applicant shall, to the satisfaction of the CDFW, prepare and implement a Swainson's hawk mitigation plan that will include preservation of Swainson's hawk foraging habitat at a ratio of 1 acre preserved for every acre lost as a result of the project. The project Applicant will compensate for the removal of suitable Swainson's hawk foraging habitat by providing offsite habitat management lands as described in CDFW's Staff Report Regarding Mitigation for Impacts to Swainson's Hawks in the Central Valley of California (California Department of Fish and Game 1994). Preservation habitat shall be of equal or better foraging quality than the habitat lost and shall be managed in perpetuity for Swainson's hawk foraging values.
3. Should the County Board of Supervisors adopt a Swainson's hawk mitigation policy/program (which may include a mitigation fee payable before issuance of building permits) before the implementation of one of the measures above, the project Applicant may be subject to that program instead.

Or,

Implement Mitigation Measure BR-2.

IMPACT: LOSS OF SWAINSON'S HAWK NESTING HABITAT

PROPOSED PROJECT

For determining impacts to and establishing mitigation for nesting Swainson's hawks in Sacramento County, CDFW recommends implementing the measures set forth in the CDFW 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.

Trees on and adjacent to the Plan Area represent potential nesting habitat for Swainson's hawk. Although no Swainson's hawks have been recorded nesting within the Plan Area, there are seven records of Swainson's hawks nesting within 10 miles of the Plan Area in the last five years (CDFW 2019). There are 803 trees within the Plan Area and although the condition, nesting suitability, or exact number of trees that would need to be removed within the Plan Area is not known, trees in the Plan Area represent potential nesting habitat for Swainson's hawk. 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. Construction noise can cause abandonment of nests up to 0.5 mile away in rural settings and 0.25 mile away in more urban settings. Development of the site would result in a **potentially significant** impact to nesting Swainson's hawk. Preconstruction surveys will be required to determine if there are nesting Swainson's hawks within 0.5 mile of the Plan Area. The purpose of the survey requirement is to ensure that construction activities do not agitate nesting hawks, potentially resulting in nest abandonment or other harm to nesting success. If Swainson's hawk nests are found, the developer is required to contact CDFW to determine what measures need to be implemented in order to ensure that nesting hawks remain undisturbed. The measures selected will depend on many variables, including the distance of activities from the nest, the types of activities, and whether the landform between the nest and activities provides any kind of natural screening. According to the Staff Report Regarding Mitigation for Impacts to Swainson's Hawks (*Buteo swainsoni*) in the Central Valley of California (November 1, 1994), implementation of Mitigation Measure BR-11 would ensure that impacts to nesting Swainson's hawks will be **less than significant with mitigation**.

Alternatively, the Applicant may obtain coverage for the Project under the SSHCP and implement Mitigation Measure BR-2. Mitigation Measure BR-2, described above, would result in preservation of Swainson's hawk nesting and foraging habitat in a coordinated and interconnected SSHCP reserve system that considers the species requirements at a regional scale rather than, project-by-project, and presents a coordinated conservation strategy to maintain species viability in the region over the long term. The SSHCP conservation strategy includes surveys, nest buffers, and monitoring that would meet the requirements for CDFW to issue an incidental take permit for the project. The impact of the project on Swainson's hawk nesting habitat would, therefore, be reduced to **less than significant with mitigation.**

Alternative 2

If Alternative 2 is adopted in lieu of the Project, impacts on Swainson's hawk nesting habitat would remain the same as they would under the Project because this alternative would develop the portions of the Plan Area where potential nest trees occur (Plate BR-4). Minor land use shifts proposed under the alternative would not result in changes to the level of impact. Therefore, the impacts related to the loss of Swainson's hawk nesting habitat would be **potentially significant**. As discussed for the Project, implementation of Mitigation Measures BR-11 would reduce impacts from Alternative 2

on Swainson's hawk nesting habitat; the impact would be **less than significant with mitigation**. Also, as discussed for the Project, should the Project Applicant seek and obtain coverage under the SSHCP, implementation of Mitigation Measure BR-2 would reduce impacts on Swainson's hawk nesting habitat to **less than significant with mitigation** for Alternative 2.

Mitigation Measures

BR-11: Tree removal shall be conducted during the non-breeding season for Swainson's hawk (generally between September 1 and February 28). Swainson's hawk nest trees shall not be removed unless avoidance is not feasible. If a Swainson's hawk nest tree must be removed, a Management Authorization from CDFW shall be obtained which will include conditions to offset the loss of the nest tree. If a nest tree needs to be removed, the tree removal period shall follow the Management Authorization guidelines, which is typically between October 1 – February 1.

For project activities, including tree removal, that begin between March 1 and September 15, qualified biologists shall conduct preconstruction surveys for Swainson's hawk and other nesting raptors and to identify active nests on and within 0.5 mile of the project site. The surveys will be conducted before the beginning of any construction activities between March 1 and September 15, following the Recommended Timing and Methodology for Swainson's Hawk Nesting Surveys in California's Central Valley (Swainson's Hawk Technical Advisory Committee 2000).

Impacts to nesting Swainson's hawks shall be avoided by establishing appropriate buffers around active nest sites identified during preconstruction raptor surveys. No project activity will 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 likely result in nest abandonment. CDFW guidelines recommend implementation of 0.25- mile-wide buffers for Swainson's hawk and 500-feet for other raptors, but the size of the buffer may be adjusted if a qualified biologist and the Environmental Coordinator, 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 will be required if the activity has 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. 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.

Or,

Implement Mitigation Measure BR-2.

IMPACT: DISTURBANCE OR LOSS OF OTHER SPECIAL-STATUS BIRD NESTS

PROPOSED PROJECT

As discussed in the Environmental Setting section of this chapter, Cooper's hawk, white-tailed kite, grasshopper sparrow, song sparrow (Modesto population), yellow-headed blackbird, northern harrier, and loggerhead shrike are not known to nest in the Plan Area; however, these species have a moderate to high potential for occurrence in the Plan Area because suitable nesting and foraging habitat are present. Project construction could remove or disturb active nests of special-status birds potentially resulting in nest abandonment by the adults and mortality of chicks and eggs. Loss of chicks and eggs of these special-status species could reduce population levels and contribute to a trend toward these species becoming threatened or endangered in the future, which would be a potentially significant impact. However, implementation of Mitigation Measures BR-12 and BR-13 would reduce potentially significant impacts on special-status bird nests 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. Alternatively, the Project Applicant may choose to mitigate impacts to Cooper's hawk, white-tailed kite, northern harrier, or loggerhead shrike under the SSHCP (Mitigation Measure BR-2) and avoid loss of active nests of these species and death of individuals. Mitigation Measure BR-2 would require development fees or land dedication in accordance with the SSHCP and implementation of all Avoidance and Minimization Measures including those specific to Cooper's hawk, white-tailed kite, northern harrier, and loggerhead shrike. Implementation of Mitigation Measure BR-2 would be in addition to implementing Mitigation Measure BR-12 for impacts to grasshopper sparrow, song sparrow (Modesto population) and yellow-headed blackbird which are not a SSHCP covered species. By implementing both Mitigation Measures BR-12 and BR-2, potential impacts to nests of special-status birds would be reduced to **less than significant with mitigation**.

ALTERNATIVE 2

If Alternative 2 is adopted in lieu of the Project, impacts to Cooper's hawk, white-tailed kite, grasshopper sparrow, song sparrow (Modesto population), yellow-headed blackbird, northern harrier, or loggerhead shrike nests may differ from those under the Project because the likelihood that nests would be subject to adverse effects is dependent on the area of impact. Although the total acreage of impact may, this alternative would result in a potential loss of active nests. Therefore, the impacts to special-status bird nests under Alternative 2 would be **potentially significant**. As discussed for the Project above, implementation of Mitigation Measures BR-12 and BR-13 would reduce impacts on special-status bird nests to **less than significant with mitigation** for Alternative 2. Alternatively, for impacts to white-tailed kite, northern harrier, or loggerhead shrike the Project Applicant may obtain coverage under the SSHCP and implement Mitigation Measures BR-12 and BR-2 as discussed for the Project, which would also reduce impacts to **less than significant with mitigation** for Alternative 2.

MITIGATION MEASURES

BR-12: The Project Applicant and all future proponents of development on non-participating properties shall implement the following measures to avoid the removal of active raptor nests.

- For project activities, including tree removal, that begin between March 1 and September 15, qualified biologists will conduct preconstruction surveys for nesting raptors and to identify active nests on and within 0.5 mile of the project site.
- Impacts to nesting raptors will be avoided by establishing appropriate buffers around active nest sites identified during preconstruction raptor surveys. No project activity will 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 likely result in nest abandonment. CDFW guidelines recommend implementation of a buffer of 500-feet for raptors unless there is a species specific buffer, but the size of the buffer may be adjusted if a qualified biologist, in consultation with CDFW, determines 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 will be required if the activity has 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.
- Trees will not be removed during the breeding season for nesting raptors unless a survey by a qualified biologist verifies that there is not an active nest in the tree.

BR-13: To avoid impacts to special-status nesting non-raptors the following shall apply:

1. If construction activity (which includes clearing, grubbing, or grading) is to commence within 500 feet of nesting habitat between February 1 and August 31, a survey for active migratory bird nests shall be conducted no more than 14 day before construction by a qualified biologist.
2. Trees slated for removal shall be removed during the period of September through January, to avoid the nesting season. Any trees that are to be removed during the nesting season, which is February through August, shall be surveyed by a qualified biologist and will only be removed if no active nests are found.
3. If active nest(s) are found in the survey area, a non-disturbance buffer, the size of which has been determined by a qualified biologist, shall be established and maintained around the nest to prevent nest failure. All construction activities shall be avoided within this buffer area until a qualified biologist determines that nestlings have fledged, or until September 1. 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.

Or,

Implement Mitigation Measure BR-2.

IMPACT: LOSS OF FORAGING HABITAT FOR OTHER SPECIAL-STATUS BIRDS

PROPOSED PROJECT

The Project has the potential to remove foraging habitat for the grasshopper sparrow, song sparrow (Modesto population), yellow-headed blackbird, loggerhead shrike, Cooper's hawk, ferruginous hawk, white-tailed kite, and northern harrier. The Project would result in the loss of 516.7 acres of suitable foraging habitat on Applicant-owned parcels. Should any part of the remaining AG-80 land (219 acres) be rezoned in the future, that rezoning will also result in loss of foraging habitat for these species. Although, the Project would result in loss of foraging habitat, the Project Applicant is also proposing a 214.3-acre wetland preserve on a portion of the Plan Area. The development of the Plan Area would result in substantial negative effects to the sustainability of these species and, thus, impacts to the foraging habitat of special-status birds are potentially significant. With the onsite preserve and the implementation of Mitigation Measures BR-9 and BR-10, 68 percent of the Plan Area (950 acres out of 1,391 acres) would either be preserved, or the loss would be compensated with in-kind habitat. Therefore, impacts to foraging habitat of these species would be reduced to **less than significant with mitigation**. Alternatively, the Project Applicant may obtain coverage under the SSHCP, and implement Mitigation Measure BR-2, which would reduce impacts to **less than significant with mitigation** by requiring development fees or land dedication in accordance with the SSHCP and implementation of all Avoidance and Minimization Measures.

ALTERNATIVE 2

In the event that Alternative 2 is adopted in lieu of the Project, impacts to foraging habitat for other special-status birds would differ from those under the Project because impacts are dependent on the acreage of suitable habitat lost. Although the total acreage of impact may vary, this alternative would result in a loss of foraging habitat for other special-status birds, which would be a **potentially significant** impact. As discussed for the Project above, implementation of Mitigation Measures BR-9 and BR-10 would reduce impacts from Alternative 2 on foraging habitat for other special-status birds to **less than significant with mitigation**. Should the Project Applicant seek and obtain coverage under the SSHCP, implementation of Mitigation Measure BR-2 would reduce impacts on foraging habitat for other special-status birds to **less than significant with mitigation** for Alternative 2.

MITIGATION MEASURES

Implement Mitigation Measures BR-9 and BR-10.

Or,

Implement Mitigation Measure BR-2.

IMPACT: LOSS OF COMMON RAPTOR AND OTHER COMMON BIRD NESTS

PROPOSED PROJECT

The Plan Area provides suitable nesting habitat for many common raptors and other common nesting birds. Construction activities may impact nesting raptors and other common nesting birds if they occur in the Plan Area. Construction activities may also disturb raptor nests that occur within 500 feet of the Plan Area. Project construction could remove or disturb active nests, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs. While loss of nests of common bird or raptor species (e.g., mourning dove, house sparrow, American kestrel, and barn owl) would not be considered a significant impact because it would not result in a substantial effect on their populations locally or regionally, cause any population to drop below self-sustaining levels, or result in a trend toward these species being listed as threatened or endangered, destruction of any bird nest is a violation of the Section 3503 of the California Fish and Game Code. Implementation of Mitigation Measures BR-12 and BR-13 require the implementation of preconstruction nest surveys, prohibit the removal of trees during the breeding season for nesting birds unless a survey by a qualified biologist verifies that there is not an active nest in the tree, and implements buffers around nests which would reduce potentially significant impacts on 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. Should the Project Applicant seek and obtain coverage under the SSHCP, the Project Applicant would implement Mitigation Measure BR-2 and all relevant Avoidance and Minimization Measures. Implementation of Mitigation Measure BR-2 would be in addition to implementing BR-12 and BR-13 for impacts to common raptors and other birds that are not SSHCP covered species. By implementing Mitigation Measures BR-2, BR-12, and BR-13, impacts to common raptors and other common nesting birds would be reduced to **less than significant with mitigation**.

ALTERNATIVE 2

In the event Alternative 2 is adopted in lieu of the Project, impacts to active raptor nests would differ from those under the Project because the likelihood of impacts on active raptor nests is dependent on the acreage of suitable habitat lost. Although the total acreage of impact would vary, this alternative could result in the loss of active common raptor and other common bird nests, which would be a **potentially significant** impact. As discussed for the Project, implementation of Mitigation Measures BR-12 and BR-13 would reduce impacts from Alternative 2 to common raptors and other birds to **less than significant with mitigation**. Should the Project Applicant seek and obtain coverage under the SSHCP, implementation of Mitigation Measures BR-12, BR-13, and BR-2 would reduce impacts from Alternative 2 on common raptor and other common bird nests to **less than significant with mitigation**.

Mitigation Measures

Implement Mitigation Measures BR-12 and BR-13.

Or,

Implement Mitigation Measure BR-2.

Impact: Loss of American Badger Dens

Proposed Project

Annual grassland throughout the Plan Area represents suitable habitat for American badger and although the potential for their occurrence in the Plan Area is low, nearby occurrences (Sacramento County 2014) indicate that there is suitable habitat present. And thus, there is 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 to decrease survival or reproduction of the species in the area because the completed Project would contain a large, contiguous wetland preserve in an area of suitable habitat for badger. In the existing condition, this preserve is connected to other open space areas, and would therefore allow continued use of the site by badgers. Loss of individuals within the Plan Area could diminish the local population of this species and lower reproductive potential, which could contribute to further declines. This impact would be **potentially significant**. However, implementation of Mitigation Measure BR-14 would reduce potentially significant impacts on American badger to **less than significant with mitigation** because this measure requires that active dens in the construction area or vicinity be identified, avoided, and monitored so that Project construction would not result in abandonment of young or direct mortality of individuals.

Alternative 2

In the event Alternative 2 is adopted in lieu of the Project, impacts to American badger dens may differ from those under the Project because the likelihood that dens would be subject to adverse effects is dependent on the area of impact. Although the total acreage of impact may vary, this alternative would result in a potential loss of dens, which would be a **potentially significant** impact. As discussed for the Project above, implementation of Mitigation Measure BR-14 would reduce these impacts to **less than significant with mitigation** for Alternative 2.

Mitigation Measures

BR-14: 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.

IMPACT: LOSS OF SPECIAL-STATUS BAT ROOSTS

PROPOSED PROJECT

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-15 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. Alternatively, the Project Applicant may obtain coverage under the SSHCP and implement Mitigation Measure BR-2. Mitigation Measure BR-2 would require development fees or land dedication in accordance with that Plan and implementation of all Avoidance and Minimization Measures including those specific to special-status bat roosts, which would also reduce impacts to **less than significant with mitigation**.

ALTERNATIVE 2

In the event that Alternative 2 is adopted in lieu of the Project, impacts to special-status bat roosts may differ from those under the Project because the likelihood that roosts would be subject to adverse effects is dependent on the area of impact. Although the total acreage of impact may vary, this alternative would result in a potential loss of roosts. Therefore, the impacts to special-status bat roosts would be **potentially significant**. As discussed for the Project above, implementation of Mitigation Measure BR-15 would reduce impacts from Alternative 2 to **less than significant with mitigation**. Alternatively, the Project Applicant may obtain coverage under the SSHCP and implement Mitigation Measure BR-2, which would also reduce impacts to **less than significant with mitigation** for Alternative 2.

MITIGATION MEASURES

BR-15: The Project Applicant or subsequent developer(s) 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.

Or,

Implement Mitigation Measure BR-2.

IMPACT: LOSS OF WESTERN POND TURTLE HABITAT AND INDIVIDUALS

PROPOSED PROJECT

Suitable habitat for western pond turtle within the Plan Area consists of the perennial marsh areas, the large irrigation pond along Tree View Road, and surrounding uplands. Although the potential for western pond turtle to occur is low due to lack of hydrologic connection to known occupied habitat, the species may use the aquatic habitat onsite

for foraging and nest in the uplands surrounding these features. Construction activities would result in fill of suitable aquatic habitat and potentially crush, bury, or disturb western pond turtles, or their nests, which would result in mortality of individual turtles and loss of reproduction should western pond turtles be present and nesting onsite. The loss of aquatic habitat and nests of western pond turtle due to construction activities would further reduce the population of this species in the region, which would be a **potentially significant** impact. However, implementation of Mitigation Measures BR-18 and BR-16 would reduce potentially significant impacts on western pond turtle to **less than significant with mitigation,** because these measures require compensation for loss of aquatic habitat, surveys for western pond turtles, and relocation of individuals from the Plan Area if needed to avoid killing or harming them. Alternatively, the Project Applicant may obtain coverage under the SSHCP and implement Mitigation Measure BR-2. Mitigation Measure BR-2 would require development fees or land dedication in accordance with that Plan and implementation of all Avoidance and Minimization Measures including those specific to western pond turtles, which would also reduce impacts to **less than significant with mitigation.**

ALTERNATIVE 2

In the event that Alternative 2 is adopted in lieu of the Project the proposed development area may be different (Table BR-6). However, the impacts to western pond turtle are likely to be the same because the perennial marsh areas and the pond on the southern side of the site along with associated uplands would be developed. As discussed for the Project above, implementation of Mitigation Measures BR-18 and BR-16 would reduce the impacts from Alternative 2 on western pond turtle to **less than significant with mitigation**. Alternatively, the Project Applicant may obtain coverage under the SSHCP and implement Mitigation Measure BR-2, which would also reduce impacts from Alternative 2 on western pond turtle to **less than significant with mitigation**.

MITIGATION MEASURES

BR-16: If the large irrigation pond on the southern side in the Plan Area along Tree View Road or surrounding uplands within 300 feet are to be physically disturbed by any future activity, surveys shall be conducted for this species no more than 24 hours before construction. If western pond turtles are found, no construction or other activities that could result in harm to western pond turtles shall begin until a relocation plan has been developed and submitted to CDFW. Once CDFW has approved a relocation plan and turtles have been moved safely out of harm's way, construction may proceed. A qualified biologist shall conduct a pre-construction worker awareness training and be onsite to monitor construction during initial vegetation clearing and ground disturbance. The relocation plan should establish western pond turtle handling procedures and identify suitable habitat where the western pond turtles will be released. Release sites shall be suitable habitat located as close as possible to the Plan Area.

Or,

Implement Mitigation Measure BR-2.

IMPACT: LOSS OF WESTERN SPADEFOOT HABITAT AND INDIVIDUALS

PROPOSED PROJECT

Western spadefoots are associated with vernal pools and have a high potential to occur in the entire Plan Area. The Project would result in the loss of vernal pool and surrounding upland habitat, and construction activities within the Plan Area could result in the crushing of individual western spadefoots, the disruption of reproduction, and loss of eggs or tadpoles.

In addition to the direct removal of habitat and loss of individuals, implementation of the Project could result in indirect impacts on western spadefoot as well. Potential indirect effects on individuals may include; 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. Indirect effects on western spadefoot habitat retained in the Plan Area preserve could result in habitat degradation leading to lower reproductive success of western spadefoot, and eventual elimination of this species from the affected habitat. These indirect effects could include, reduction in water quality and altered hydrology, litter and dumping, and introduction of invasive plant species.

Direct and indirect impacts to western spadefoot would be **potentially significant**, because these effects could reduce local population 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. However, implementation of Mitigation Measures BR-1 and BR-17 would reduce potentially significant impacts on western spadefoot to **less than significant with mitigation,** because these measures would require compensatory mitigation for loss of aquatic habitat, surveys, and a creation of a CDFW-approved relocation plan. Alternatively, the Project Applicant may obtain coverage under the SSHCP and implement Mitigation Measure BR-2. Mitigation Measure BR-2 would require development fees or land dedication in accordance with that Plan and implementation of all Avoidance and Minimization Measures including those specific to western spadefoot, which would also reduce impacts to **less than significant with mitigation.**

ALTERNATIVE 2

If Alternative 2 is adopted in lieu of the Project, impacts to western spadefoot may differ from those under the Project because impacts are dependent on the acreage of suitable habitat that would be developed (Table BR-6). This alternative would result in loss and degradation of habitat for western spadefoot that could cause substantial reductions in population numbers, which could contribute to a trend toward state or federal listing. Therefore, this alternative would result in a **potentially significant** impact. However, As discussed for the Project above, implementation of Mitigation Measures BR-1 and BR-17 would reduce impacts on western spadefoot to **less than significant with**

mitigation for Alternative 2. Should the Project Applicant seek and obtain coverage under the SSHCP, implementation of Mitigation Measure BR-2 would also reduce impacts from Alternative 2 on western spadefoot to **less than significant with mitigation**.

Mitigation Measures

Implement Mitigation Measure BR-1 to compensate for loss of aquatic habitat.

BR-17: Before construction in or around vernal pools, surveys shall be conducted for western spadefoots no more than 30 days before construction. If western spadefoots are found, then the project biologist should conduct a pre-construction worker awareness training and be onsite to monitor construction during initial vegetation clearing and ground disturbance. If any western spadefoots must be relocated during the project, no construction or other activities that could result in harm to western spadefoots shall begin until a relocation plan has been developed and submitted to CDFW. Once CDFW has approved a relocation plan and western spadefoots have been moved safely out of harm's way, construction may proceed. The relocation plan shall establish western spadefoot handling procedures and identify suitable habitat where the western spadefoot will be released. Release sites should be suitable habitat located as close as possible to the Plan Area and may include the Plan Area preserve.

Or,

Implement Mitigation Measure BR-2.

Impact: Loss of Wetlands and Other Waters

Proposed Project

As noted previously, several resource evaluations have been prepared for Jackson Township over the years, including several wetland delineations. As per the wetland delineation, 53.81 acres of aquatic resources have been identified on the Applicant-owned properties, comprising of 47.04 acres of wetland features and 6.77 acres of other waters of the United States.

Foothill Associates did not have access to the non-participating properties; however, based on desktop review and observations made from adjacent public accessways and Applicant-owned properties, they estimated that 13.46 acres of wetland features and 1.89 acres of other waters of the United States are located on the non-participating properties. Therefore, a total of approximately 60.5 acres of wetland features and 8.66 acres of other waters of the United States have been identified within the entire Plan Area. For the non-participating properties, acreage of wetlands and other waters is not final, and a formal wetland delineation verified by USACE would be required before development in these areas.

As illustrated in the land use plan, the project consists of multiple proposed uses within the Plan Area. For purposes of this analysis, it is assumed that future construction activities would result in direct loss, through permanent fill, of all jurisdictional waters

within the Plan Area, except within the wetland preserve land use designation. Table BR-9 details the acreage of existing wetlands and other waters in the Plan Area that would be subject to direct impacts as a result of Project implementation. The acreage that would be retained within the wetland preserve is shown in Table BR-10. Plate BR-8 shows the distribution of affected and preserved wetlands within the Plan Area.

Based on the proposed land use, a total of approximately 47 acres of wetlands and other waters on Applicant-owned properties would be disturbed or removed to accommodate development of the Project (Table BR-9). A total of 6.78 acres of wetlands and other waters on Applicant-owned properties will be preserved due to the Wetland Preserve (Table BR-10).

The wetland delineations have received a preliminary jurisdictional determination by USACE (refer to Appendix F of Appendix BR-1) and applications for Section 404 permits for wetland loss have been submitted, but permits have not yet been issued. Thus, the amount of wetland area that will require mitigation has not been finalized by USACE. However, before direct impacts to wetland features, the Project Applicant will be required to obtain all required permits from USACE, USFWS, CDFW, and RWQCB.

The proposed Wetland Preserve is intended to allow for onsite compensation for some of the project related loss of onsite wetlands and waters. As part of the creation of the wetland preserve conservation easements would be placed over the preserve area to ensure that the area is set aside as a conservation area in perpetuity. Fill of wetlands and other waters within the Plan Area would constitute a substantial reduction in the quantity of wetlands and other waters in the region and would be a **significant** impact. Implementing Mitigation Measures BR-28 through BR-30 would reduce impacts to wetlands and other waters, but perhaps not to a less-than-significant level. Permits for dredge and fill of wetlands and other waters would be acquired and the mitigation required by USACE would need to meet a no-net-loss standard for acreage. However, the loss of 41.38 acres of wetlands and 5.65 acres of other waters on Applicant-owned parcels and additional loss on non-participating properties is a substantial loss, especially when considered in the context of the regional rate and acreage of habitat losses. Creating compensatory wetlands cannot be guaranteed to fully replace the functions of wetlands lost and temporal losses would occur unless all impacts could be mitigated through purchase of fully functioning, established, in-kind wetlands from an approved mitigation bank. 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. Therefore, this impact would remain **significant and unavoidable**. Alternatively, the Project Applicant may obtain coverage under the SSHCP and implement Mitigation Measure BR-2. Implementing Mitigation Measure BR-2 would result in mitigation of the loss of wetlands and other waters on Applicant-owned Parcels and additional loss on non-participating properties in the coordinated and interconnected SSHCP reserve system. By mitigating all project impacts on wetlands and other waters within the reserve system and meeting all Avoidance and Minimization Measures in the SSHCP, the impacts to wetlands and other waters would be reduced to **less-than-significant** with mitigation.

Table BR-9: Potential Impacts to Jurisdictional Features on Applicant-Owned Properties for the Project and Alternative 2

Alternatives	Wetland Impacts (acres)						Other Waters Impacts (acres)					Total Direct Impact (acres)
	Depressional Seasonal Wetlands	Depressional Perennial Marsh	Vernal Pool	Riverine Seasonal Wetland	Riverine Perennial Wetland	Total Wetlands	Intermittent Drainage	Ephemeral Drainage	Pond	Ditch/Canal	Total Other Waters	
Proposed Project	4.20	1.03	22.83	3.26	10.05	***41.38***	0.08	0.23	5.04	0.31	***5.65***	**47.03**
Alternative 2	4.08	1.03	18.39	3.14	10.05	***36.69***	0.08	0.23	5.04	0.31	***5.65***	**42.35**

Note: Information in this table reflects the Applicant-owned and non-participating properties as of the last supplement to the Delineation Report, October 29, 2015

Table BR-10: Potential Preservation of Jurisdictional Features on Applicant-Owned Properties for the Project and Alternative 2

Alternatives	Wetland Preserved (acres)						Other Waters Preserved (acres)					Total Preserved (acres)
	Depressional Seasonal Wetlands	Depressional Perennial Marsh	Vernal Pool	Riverine Seasonal Wetland	Riverine Perennial Marsh	Total Wetlands	Intermittent Drainage	Ephemeral Drainage	Pond	Ditch/Canal	Total Other Waters	
Proposed Project	0.21	0.0	5.02	0.44	0.0	***5.67***	1.11	0.00	0.00	0.00	***1.11***	**6.78**
Alternative 2	0.33	0.0	9.46	0.56	0.0	***10.35***	1.11	0.00	0.00	0.00	***1.11***	**11.46**

Note: Information in this table reflects the Applicant-owned and non-participating properties as of the last supplement to the Delineation Report, October 29, 2015

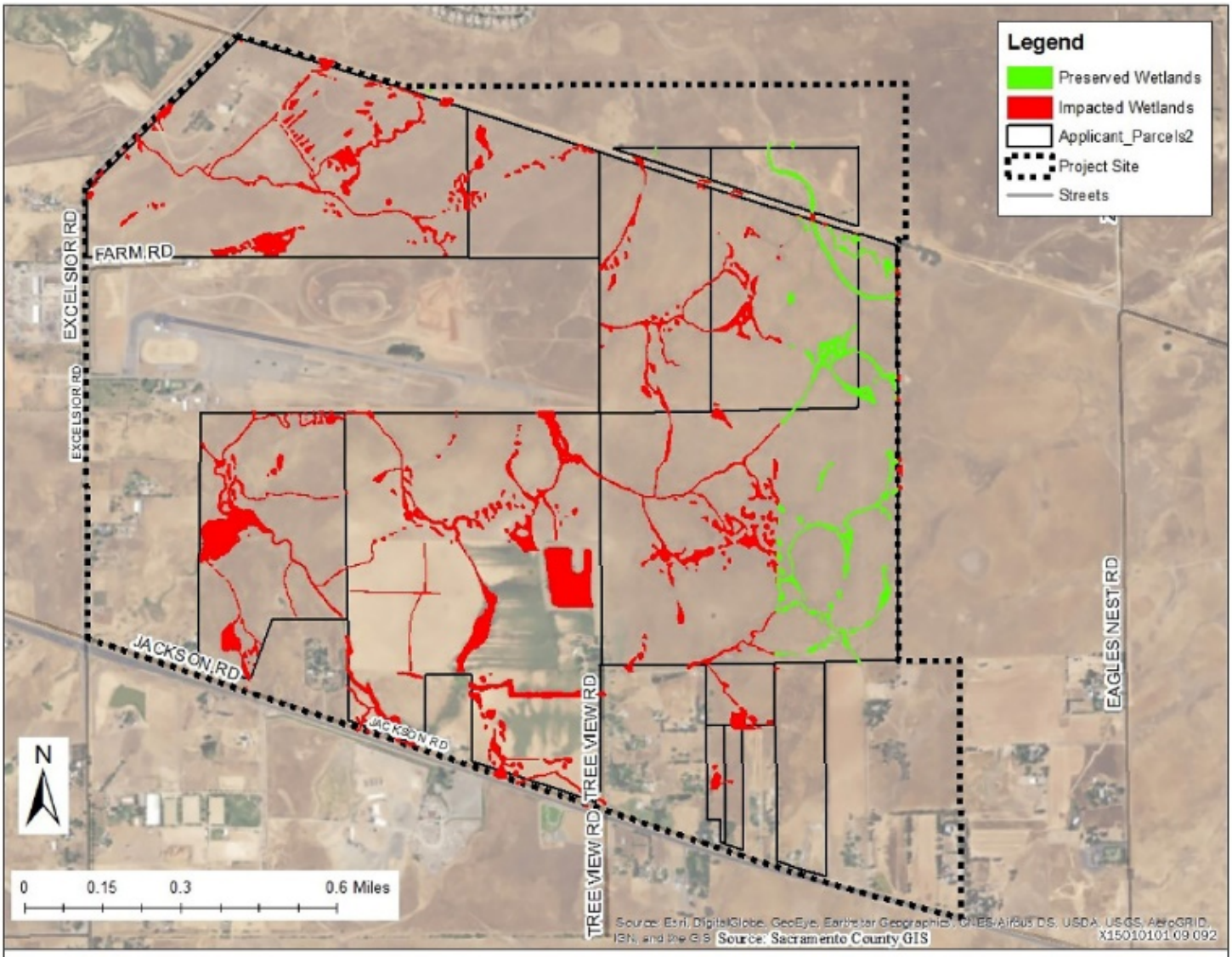


Plate BR-8: Waters of the United States Impact Map

Alternative 2

If Alternative 2 is adopted in lieu of the Project, impacts associated with loss of wetlands and other waters may differ from the impacts under the Project (Table BR-9). Alternative 2 would have a reduced acreage of impact on wetlands and other waters when compared to the Project (Table BR-9) and larger area of wetland preserve (Table BR-10). Fill of wetlands and other waters within the Plan Area would continue to constitute a substantial reduction in the quantity of wetlands and other waters within the region. Therefore, the impacts related to the loss of wetlands and other waters would be **significant**. As discussed for the Project above, implementation of Mitigation Measures BR-18 through BR-20 would reduce impacts on wetlands and other waters from Alternative 2; however, impacts would remain **significant and unavoidable**. Should the Project Applicant seek and obtain coverage under the SSHCP, implementation of Mitigation Measure BR-2 would reduce impacts from Alternative 2 on wetlands and other waters to **less than significant with mitigation**.

Mitigation Measures

BR-18: To compensate for the permanent loss of wetlands and waters on Applicant-owned properties, the Project Applicant shall perform one or a combination of the following before issuance of grading permits, improvement plans or building permits, and shall also obtain all applicable permits from USACE, USFWS, the Central Valley Regional Water Quality Control Board, and CDFW:

A. Where a Section 404 Permit has been issued by USACE, or an application has been made to obtain a Section 404 Permit, the Mitigation and Management Plan required by that permit or proposed to satisfy the requirements of USACE for granting a permit may be submitted for purposes of achieving a no net-loss of wetlands. The required Plan shall be submitted to the Sacramento County Office of Planning and Environmental Review, USACE, and USFWS for approval before its implementation.

B. If regulatory permitting processes result in less than a 1:1 compensation ratio for loss of wetlands, the Project Applicant shall demonstrate that the wetlands that went unmitigated/uncompensated as a result of permitting have been mitigated through other means. Acceptable methods include payment into a mitigation bank or protection of offsite wetlands through the establishment of a permanent conservation easement, subject to the approval of the Environmental Coordinator.

BR-19: Before issuance of building permits, grading permits, or approval of improvement plans, all areas designated within the Plan Area as Wetland Preserve shall be placed within a permanent conservation easement, which shall be reviewed and approved by the Planning and Environmental Review Division. At a minimum, the permanent conservation easements must cover all areas which are required to be preserved as part of the Section 404 and Section 401 wetland permits.

BR-20: Any land use entitlements proposed for the non-participating properties must obtain a wetland delineation and comply with Mitigation Measures BR-28 and BR-29.

Or,

Implement Mitigation Measure BR-2 and comply with USACE 404 permit strategy.

IMPACT: DISTURBANCE OF RIPARIAN HABITATS

PROPOSED PROJECT

Elder Creek, Morrison Creek, and three unnamed streams run through the Plan Area. These streams do not support riparian vegetation corridors within the Plan Area. While typical riparian tree species, black willow, black walnut, California sycamore, and Fremont cottonwood do not occur in association with the creeks and streams on the Plan Area, these tree species occur in the Plan Area in association with the large irrigation pond and other small ponds. The banks of these ponds may support additional riparian species and function as riparian habitats. These ponds would be subject to disturbance from construction, and the removal of any riparian habitat that may occur would be a **potentially significant** impact. However, implementation of Mitigation Measure BR-21 would reduce potentially significant impacts on riparian habitat to **less than significant with mitigation,** because this measure would require the Project Applicant to notify CDFW should activities have the potential to disturb the bed, bank, or associated riparian vegetation of any stream or pond on the Plan Area and comply with any mitigation required of a Streambed Alteration Agreement at a minimum 1:1 ratio.

ALTERNATIVE 2

If Alternative 2 is adopted in lieu of the Project, the area of proposed development may be different (Table BR-6). However, the impacts to riparian habitat are likely to be the same because the large irrigation pond and other small ponds within the Plan Area where riparian habitat may occur would be developed under all alternatives. Therefore, as discussed for the Project above, the impact of Alternative 2 would be **potentially significant**. However, implementation of Mitigation Measure BR-21 would reduce the impacts from Alternative 2 on riparian habitats to **less than significant with mitigation**.

MITIGATION MEASURES

BR-21: If Project activities will disturb the bed, bank, or associated riparian vegetation of any stream or pond on the Plan Area, the Project Applicant shall notify the CDFW pursuant to Section 1602 of the Fish and Game Code before engaging in such activities. If appropriate, the Project Applicant shall enter into a Streambed Alteration Agreement with CDFW and coordinate with CDFW in developing appropriate mitigation at a minimum 1:1 ratio of habitat lost or degraded to habitat restored and should abide by the conditions of any executed agreements.

IMPACT: INTERFERENCE WITH THE MOVEMENT OF ANY NATIVE RESIDENT OR MIGRATORY SPECIES

PROPOSED PROJECT

The Plan Area is located adjacent to the existing Mather Preserve to the north and other undeveloped open space to the south and east. The Plan Area may support movement of terrestrial and aquatic species to and from these areas. The Project would include the dedication of approximately 214.3 acres of wetland preserve to the SSHCP preserve system that would allow continued movement of species between these existing preserves and undeveloped open space through the Plan Area. Therefore, the Project would not interfere substantially with the movement of native resident or migratory species and the impacts of the Project would be **less than significant**.

ALTERNATIVE 2

In the event that Alternative 2 is adopted in lieu of the Project, impacts to movement of native resident and migratory species would remain the same as they would under the Project because impacts are dependent on where the development would occur. While the area of development and the wetland preserve proposed under Alternative 2 would differ, this alternative would include a wetland preserve that would allow for the continued use of the Plan Area for movement of terrestrial and aquatic species between existing and planned preserves under the SSHCP and would, therefore, not interfere substantially with the movement of native resident or migratory species. Therefore, the impact from Alternative 2 on movement of resident and migratory species would be **less than significant**.

MITIGATION MEASURES

No mitigation is required.

IMPACT: LOSS OF NATIVE TREES

PROPOSED PROJECT

Implementation of the Project has the potential to result in the removal or encroachment within some or all native tree resources within the Plan Area, although the specific development and building footprints are unknown at this time. As disclosed in the arborist report and shown in Table BR-2 and 3 above, only one native interior live oak tree may be affected in the Applicant-owned properties. However, 13 black walnut, three California sycamore, and six Fremont cottonwood trees may also be removed. A tree inventory has not been performed on the non-participating properties; however, it was estimated that five black walnut, five California sycamore, 31 Fremont cottonwood, two interior live oak, three red willow, and two valley oak could be removed if development were to occur on the non-participating properties. Therefore, the maximum amount of native tree DBH on Applicant-owned properties that could be removed is 358 DBH, while the maximum of estimated DBH on non-participating properties that could be removed is 261 DBH.

The degree of impacts to native trees that would result from development within the Plan Area is uncertain at this time. With the implementation of Specific Plan Policy 7.2.3, native trees would be preserved where feasible and non-native trees determined to be a potential fire hazard or high-VOC emitting species, such as eucalyptus, would be removed. Nonetheless, this analysis assumes that future grading and development would likely result in removal or mortality of most if not all trees in the Plan Area. However, considering specific parcel development plans are not part of the Project and tree health and size at the time of such development could be different than what was assessed in 2015, impacts on native trees associated with development cannot be definitively determined at this time. Therefore, impacts to native trees from development in the Plan Area are considered **potentially significant**. However, implementation of Mitigation Measures BR-22 would reduce potentially significant impacts on native trees to **less than significant with mitigation** because this measure would require the Project Applicant implement measures to protect native trees to be retained and provide compensation for native trees removed from the Plan Area.

ALTERNATIVE 2

If Alternative 2 is adopted in lieu of the Project, impacts associated with loss of native trees would remain the same as they would under the Project, because this alternative would develop the portions of the Plan Area where native trees occur (Plate BR-4). Minor land use shifts proposed would result in no changes to the level of impact. Therefore, the impact would be **potentially significant**. However, implementation of Mitigation Measure BR-22 would reduce the impacts from Alternative 2 on native trees to **less than significant with mitigation**.

MITIGATION MEASURES

BR-22: Before execution of any and all development projects within the Plan Area, the Project Applicant or subsequent developer(s) shall submit an arborist report for the project impact areas when appropriate habitat exists. The report shall be prepared by an ISA certified arborist and include the species, diameter, dripline, and health of all trees found within the project impact area. 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 any tree. All native trees identified shall be mitigated for as follows:

A. With the exception of the oak trees removed and compensated for through Part B below, all healthy native oak trees that are 6 inches dbh or larger on the Plan Area, all portions of adjacent off-site healthy native oak trees that are 6 inches dbh or larger which have driplines that extend onto the Plan Area, and all off-site healthy native oak 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 1 foot outside the driplines of the oak 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 oak 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 oak 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 oak 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 oak trees.
6. Any soil disturbance (scraping, grading, trenching, and excavation) is to be avoided within the dripline of the oak 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 5 feet outside the driplines of protected oak 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 oak 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 oak tree.

11. No sprinkler or irrigation system shall be installed in such a manner that it sprays water within the dripline of the oak tree.
12. Tree pruning required for clearance during construction must be performed by an ISA Certified Arborist or Tree Worker.
13. Landscaping beneath the oak 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 2 feet away from the base of the trunk. The only plant species which shall be planted within the dripline of the oak 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 on-site healthy native oak trees shall be protected and preserved. Any substantial (>20%) encroachment and/or removal of native oak trees shall be compensated by planting native trees (valley oak/Quercus lobata, interior live oak/Quercus wislizenii, blue oak/Quercus douglasii), equivalent to the dbh inches lost, based on the ratios listed below, at locations that are authorized by the Environmental Coordinator. 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 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 Project Applicant to provide funding for purchase, planting, irrigation, and 3-year maintenance period, should the Project 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 Oak 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 Oak Tree Planting Plan(s) shall include the following minimum elements:

   1. Species, size and locations of all replacement plantings;
   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.

No replacement tree shall be planted within 15 feet of the driplines of existing oak trees or landmark size trees that are retained onsite, or within 15 feet of a building foundation or swimming pool excavation. The minimum spacing for replacement oak 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.

If oak 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.

IMPACT: LOSS OF NON-NATIVE TREE CANOPY

PROPOSED PROJECT

Nonnative trees inventoried on the site included 45 eucalyptus, eight pine, 24 black locust (*Robinia pseudoacacia*), 18 tree of heaven (*Ailanthus altissima*), eight elm (*Ulmus* spp.), three plum (*Prunus* spp.), one Chinese pistache (*Pistacia chinensis*), one cork oak (*Quercus suber*), three edible fig (*Ficus carica*), one sweetgum (*Liquidambar styraciflua*), one southern magnolia (Magnolia grandiflora), 10 white mulberry (*Morus alba*), three willow, and one Lombardy poplar (*Populus nigra*).

A total of 580 nonnative trees were recorded on the non-participating properties, including tree of heaven, black locust, catalpa (*Catalpa* spp.), coast redwood (*Sequoia sempervirens*), cork oak, deodar cedar (*Cedrus deodara*), domestic almond (*Prunus dulcis*), elm, eucalyptus, Italian cypress (*Cupressus sempervirens*), sweetgum, Lombardy poplar, maple (*Acer* spp.), white mulberry, olive (*Olea europaea*), pine, plum, privet (*Ligustrum* spp.), red maple (*Acer rubrum*), silver wattle (*Acacia dealbata*), and willows. Most of these trees appear to be planted as landscape trees around existing residences. The health of the trees appears to be fair to good; however, none appear to be large enough to be considered landmark trees.

The Sacramento County General Plan Conservation Element Policy CO-145 states that the “removal of nonnative tree canopy for development shall be mitigated by creation of new tree canopy equivalent to the acreage of non-native tree canopy removed. New

tree canopy acreage shall be calculated using the 15-year shade cover values for tree species." The goal of the General Plan policies related to non-native trees is to replace existing urban tree canopy that is removed due to development. Urban tree canopy provides many benefits: improved air quality by removing pollutants, shading structures, reducing the urban heat island effect and reducing energy costs associated with cooling buildings, and capturing and filtering stormwater. In the context of a large master plan such as the Project, tree removal is anticipated to occur in phases. As each development phase happens, new tree plantings would occur.

The Biological Resources Assessment states that the Plan Area has 1.75 total acres of tree canopy that would need to be replaced pursuant to Policy CO-145. The Countywide Design Guidelines, in general, require the planting of new trees in all new single-family lots, commercial buildings, parking lots, and street frontages. In general, these planting requirements are enough to equal the amount of canopy lost. The Design Guidelines for the Project are in line with the Countywide Design Guidelines. Using the smallest shade-valued tree on the County's 15-year shade tree list (15–20 foot diameter tree = 314 square feet [sq. ft.] of shade/canopy), and applying one of the many Countywide Design Guidelines regarding vegetation (one shade tree planted on every single-family lot) the total canopy acreage would amount to 16.7 acres (2,314 dwelling units (<RD-7) x 314 sq. ft./ 43,560 sq. ft. per acre). This is nine times what would be removed for development and does not take into account for tree plantings in landscape frontages, commercial lots, and medium and high-density residential units. It is clear that the Project would exceed the existing amount of non-native canopy acreage this impact would be **less than significant**.

Alternative 2

In the event that Alternative 2 is adopted in lieu of the Project, impacts associated with loss of non-native tree canopy would remain the same as under the Project. Minor shifts in land uses and changes in the area of the wetland preserve would result in no changes to the level of impact, as the area where non-native tree canopy is present within the Plan Area (Plate BR-4) would be affected in the same way. Therefore, this impact would be **less than significant** for Alternative 2.

Mitigation Measures

No mitigation is required.

Impact: South Sacramento Habitat Conservation Plan Consistency

Proposed Project

The Project could result in conflicts with the SSHCP should that Plan be implemented. Currently, the SSHCP has been adopted by the County; however, incidental take permits have not been issued by CDFW and USFWS for the Plan and CWA Section 404 permits from USACE have not been issued. The Project is specifically addressed in the SSHCP (Sacramento County et al. 2018) and an approximately 225 acres of onsite preserve and a specific Avoidance and Minimization Measure related to changes to the

channel of Elder Creek are identified as requirements for inclusion of the Project under the SSHCP. Furthermore, the proposed preserve in the Plan Area is part of Core Preserve C2 (Sacramento County et al. 2018) which is a key part of the SSHCP Conservation Strategy.

As proposed, the Project would include 214.3 acres of wetland preserve, which does not meet the 225 acres of preservation within the Plan Area that is part of the SSHCP Conservation Strategy. In addition, the Project would not strictly conform to the requirements for stream channel re-routing, widening, or deepening. Appendix K to the SSHCP provides project-specific avoidance and minimization measures. As the SSHCP Avoidance and Minimization Measures were written to apply to a broad range of projects, the SSHCP acknowledges that it may not always be feasible to apply each SSHCP Avoidance and Minimization Measure as written. Variances may be granted to projects where they would not have a substantial impact on the integrity of the proposed preserve system. Appendix K to the SSHCP includes a variance to Avoidance and Minimization Measure STREAM-5 for the Project. The document acknowledges that the Project would re-route, widen, and deepen the portion of Elder Creek that runs through the Plan Area. While compliance with STREAM-5 is generally assumed, it is noted that Elder Creek would be used for stormwater drainage; therefore, maintenance of the channel would be required.

Mitigation Measures BR-18 through BR-20 would reduce this inconsistency by requiring permits from the appropriate regulatory agencies and the implementation of avoidance and minimization measures included in those permits. While implementation of Mitigation Measures BR-18 through BR-20 would reduce project inconsistencies with the SSHCP related to Elder Creek, the smaller preserve area would remain inconsistent with the SSHCP Conservation Strategy, and this would be a **significant and unavoidable** impact.

Alternative 2

Alternative 2 does not include measures that are consistent with the Avoidance and Minimization Measure related to changes to the channel of Elder Creek that are identified as requirements for inclusion of the project under the SSHCP. However, as discussed above for the Project, this inconsistency would be addressed by the SSHCP variance process and implementation of Mitigation Measures BR-18 through BR-20.

Alternative 2 would set aside 259.8 acres, which is more than the 225 acres called for in the SSHCP Conservation Strategy, and this preserve area includes the portion of the important core preserve within Preserve Planning Unit 2 adjacent to the Mather Preserve planned as part of the SSHCP conservation strategy. Impacts from Alternative 2 with the implementation of Mitigation Measures BR-18 through BR-20 would also be **less than significant**.

Mitigation Measures

Implement Mitigation Measures BR-18 through BR-20.

9 CLIMATE CHANGE

INTRODUCTION

This section presents a summary of regulations applicable to greenhouse gas (GHG) emissions; a summary of climate change science and GHG sources in California; quantification of Project-generated GHGs generated by the Project or Alternative 2 and discussion about their contribution to global climate change in accordance with the 2019 State CEQA Guidelines; and analysis of the Project's resiliency to climate change-related risks. The potential for flooding due to climate change is discussed further in Chapter 14, "Hydrology, Drainage, and Water Quality." In addition, mitigation measures are recommended to reduce the Project's contribution to climate change.

During the NOP scoping process, one comment provided suggestions for how the analysis of climate change should be addressed in the EIR and requested a full analysis of each of the alternatives. The Project and Alternative 2 are fully addressed quantitatively in this chapter, and the remaining alternatives are addressed qualitatively in Chapter 3, "Alternatives."

ENVIRONMENTAL SETTING

GREENHOUSE GAS EMISSIONS AND CLIMATE CHANGE

PHYSICAL SCIENTIFIC BASIS OF GREENHOUSE GAS 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 atmosphere from space; a portion of the radiation is absorbed by the earth's surface, and a smaller portion of this radiation is reflected toward space. The 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 a 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-generated emissions of these GHGs in excess of natural ambient concentrations are 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

anthropomorphic increase in GHG concentrations and other anthropomorphic forcing (IPCC 2014:5). This warming is observable considering the 20 hottest years ever recorded occurred within the past 30 years (McKibben 2018).

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 (approximately 1 day), GHGs have long atmospheric lifetimes (1 year to several thousand years). GHGs persist in the atmosphere long enough to be dispersed around the globe. Although the lifetime of any GHG molecule depends on multiple variables and cannot be determined with perfect 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 are 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 remain stored in the atmosphere (IPCC 2013:467).

The quantity of GHGs in the atmosphere responsible for climate change is not precisely known, but it is enormous. No single project alone would measurably contribute to an incremental change in the global average temperature or to global or local climates or microclimates. From the standpoint of CEQA, GHG impacts relative to global climate change are inherently cumulative.

Greenhouse Gas Emission Sources and Sinks

As discussed previously, GHG emissions are attributable in large part to human activities. CO_2 is the main byproduct of fossil fuel combustion. Methane, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices, organic material decomposition in landfills, and the burning of forest fires (Black et al. 2017). Nitrous oxide emissions are largely attributable to agricultural practices and soil management. CO_2 sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution (CO_2 dissolving into the water); respectively. These are the two of the most common processes for removing CO_2 from the atmosphere.

The total GHG inventory for California in 2016 was 429 million metric tons of CO_2 equivalents ($MMTCO_2e$) (CARB 2018a). This is less than the 2020 target of 431 $MMTCO_2e$ (equal to the inventory for 1990 established by AB 32, see Regulatory Setting for more detail), indicating that the state is ahead of its 2020 target (CARB 2018b:1). Table CC-1 summarizes the statewide GHG inventory for California.

Table CC-1 Statewide GHG Emissions by Economic Sector

Sector	$MMTCO_2e$ (Percent)
Transportation	176 (41)
Industrial	99 (23)
Electricity generation (in state)	43 (10)
Electricity generation (imports)	26 (6)
Agriculture	34 (8)
Residential	30 (7)
Commercial	21 (5)
Not specified	1 (<1)

Notes: $MMTCO_2e$ = million metric tons of carbon dioxide equivalent
Source: CARB 2018a

Effects of Climate Change on the Environment

According to the IPCC, which was established in 1988 by the World Meteorological Organization and the United Nations Environment Programme, global average temperature will increase by 1.5 degrees Celsius (°C) (2.7 degrees Fahrenheit [°F]) by 2040. This 1.5 °C warming represents a global average; portions of the earth will experience more dramatic warming than others. Oceans, which support high specific heat, will experience less dramatic warming as compared to continents, particularly in inland regions.

According to *California's Fourth Climate Change Assessment*, if global GHGs are reduced at a moderate rate, California will experience average daily high temperatures that are warmer than the historic average by 2.5 °F from 2006 to 2039, by 4.4 °F from 2040 to 2069, and by 5.6 °F from 2070 to 2100; and if GHG emissions continue at current rates California will experience average daily high temperatures that are warmer than the historic average by 2.7 °F from 2006 to 2039, by 5.8 °F from 2040 to 2069, and by 8.8 °F from 2070 to 2100 (OPR et al. 2019:23). The potential effects of this warming in California are well documented.

Since its previous climate change assessment in 2012, California has experienced several of the most extreme natural events in its recorded history: a severe drought from 2012-2016, an almost non-existent Sierra Nevada winter snowpack in 2014-2015, increasingly large and severe wildfires, and back-to-back years of the warmest average temperatures (OPR et al. 2019:56). According to the California Natural Resources Agency's *Safeguarding California Plan: 2018 Update*, California experienced the driest 4-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 2018:55). In contrast, the northern Sierra Nevada experienced its wettest year on record during the 2016—2017 water year (CNRA 2018:64). The changes in precipitation exacerbate wildfires throughout California through a cycle of high vegetative growth coupled with dry, hot periods, which lowers the moisture content of fuel loads. As a result, the frequency, size, and devastation of forest fires increases. In November 2018, the Camp Fire completely

destroyed the town of Paradise in Butte County and caused 85 fatalities, becoming the state's deadliest fire in recorded history. Moreover, changes in the intensity of precipitation events following wildfires can also result in devastating landslides. In January 2018 following the Thomas Fire, 0.5 inches of rain fell over just 5 minutes in Santa Barbara causing destructive mudslides formed from the debris and loose soil left behind by the fire. These mudslides resulted in 21 deaths.

Temperature increases and changes to historical precipitation patterns will likely also affect ecologically productivity. Existing habitats may relocate in response to climatic changes where possible, and those that lack the ability to retreat will be severely threatened. Altered climatic conditions dramatically endangers the survival of arthropods, which could have cascading effects throughout ecosystems (Lister and Garcia 2018). Conversely, a warming climate may support the populations of other insects such as ticks and mosquitos, which transmit diseases harmful to human health such as the Zika virus, West Nile virus, and Lyme disease (European Commission Joint Research Centre 2018).

Changes in temperature, precipitation patterns, extreme weather events, wildfires, and sea-level rise have the potential to threaten transportation and energy infrastructure, crop production, forests and rangelands, and public health (CNRA 2018:64, 116–117, 127; OPR et al. 2019:63). The effects of climate change will also have an indirect adverse impact on the economy as more severe natural disasters cause expensive, physical damage to communities and the state. Additionally, adjusting to the physical changes associated with climate change can produce mental health impacts such as depression and anxiety.

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 Representative Concentration Pathway (RCP) 8.5 scenario represents a business-as-usual future emissions scenario, and the RCP 4.5 scenario represents a future with reduced GHG emissions. According to Cal-Adapt, annual average maximum temperatures in the Plan Area are projected to rise by 5.4°F to 9.8°F by 2099, with the low and high ends of the range reflecting the lower and higher emissions increase scenarios (CEC 2019). Annual average minimum temperatures are expected to rise within a similar range.

The Plan Area experienced an annual average high temperature of 73.9°F between 1961 and 1990. Under the RCP 4.5 scenario, the county's annual average high temperature is projected to increase by 4.9°F to 78.8°F by 2050 and increase an additional 0.5°F to 79.3°F by 2099 (CEC 2019). Under the RCP 8.5 scenario, the Plan Area's annual average high temperature is projected to increase by 5.0°F to 78.9°F by 2050 and increase an additional 4.8°F to 83.7°F by 2099 (CEC 2019).

The Plan Area experienced an average precipitation of 19.6 inches per year between 1961 and 1990. Under the RCP 4.5 scenario, the Plan Area is projected to experience an increase of 8.0 inches to 27.6 inches per year by 2050 and decrease to 20.6 inches per year by 2099 (CEC 2019). Under the RCP 8.5 scenario, the Plan Area is projected to experience an increase of 9.9 inches to 29.5 inches per year by 2050 and decrease to 24.7 inches per year by 2099 (CEC 2019).

REGULATORY SETTING

FEDERAL

In *Massachusetts et al. v. Environmental Protection Agency et al.*, 549 U.S. 497 (2007), the Supreme Court of the United States ruled that CO_2 is an air pollutant as defined under the federal Clean Air Act and that the U.S. Environmental Protection Agency (EPA) has the authority to regulate GHG emissions.

In 2010, EPA started to address GHG emissions from stationary sources through its New Source Review permitting program, including operating permits for "major sources" issued under Title V of the federal Clean Air Act.

In October 2012, EPA and the National Highway Traffic Safety Administration, on behalf of the U.S. 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 *Federal Register* [FR] 62624). These rules would increase fuel economy to the equivalent of 54.5 miles per gallon, 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). However, on April 2, 2018, the EPA administrator announced a final determination that the current standards are not appropriate and should be revised. It is not yet known what revisions will be adopted or when they will be implemented (EPA 2018).

In 2015, EPA unveiled the Clean Power Plan. The purpose of the plan was to reduce CO_2 emissions from electrical power generation by 32 percent relative to 2005 levels within 25 years. EPA is proposing to repeal the Clean Power Plan because of a change to the legal interpretation of Section 111(d) of the federal Clean Air Act, on which the Clean Power Plan was based. The comment period on the proposed repeal closed April 26, 2018.

In June 2019, the EPA, under authority of the Clean Air Act section 111(d), issued the Affordable Clean Energy (ACE) rule which provides guidance to states on establishing emissions performance standards for coal-fired electric generating units (EGUs). Under this rule, states are required to submit plans to the EPA which demonstrate the use of specifically listed retrofit technologies and operating practices to achieve carbon dioxide reduction though heat rate improvement (HRI). HRI is a measurement of power plant efficiency that EPA determined as part of this rulemaking to be the best system of emissions reduction for carbon dioxide generated from coal fired EGUs (EPA 2019).

STATE

STATEWIDE GHG EMISSION TARGETS AND THE CLIMATE CHANGE SCOPING PLAN

Reducing GHG emissions in California has been the focus of the State government for approximately two decades (State of California 2018). GHG emission targets established by the State legislature include reducing statewide GHG emissions to 1990 levels by 2020 (Assembly Bill 32 of 2006) and reducing them to 40 percent below 1990 levels by 2030 (Senate Bill [SB] 32 of 2016). Executive Order S-3-05 calls for statewide

GHG emissions to be reduced to 80 percent below 1990 levels by 2050. Executive Order B-55-18 directs California to achieve carbon neutrality by 2045 and achieve and maintain net negative GHG emissions thereafter. These targets are in line with the scientifically established levels needed in the United States to limit the rise in global temperature to no more than 2ºC, the warming threshold at which major climate disruptions, such as super droughts and rising sea levels, are projected; these targets also pursue efforts to limit the temperature increase even further to 1.5 ºC (United Nations 2015:3).

California's 2017 Climate Change Scoping Plan (2017 Scoping Plan), prepared by the California Air Resources Board (CARB), outlines the main strategies California will implement to achieve the legislated GHG emission target for 2030 and "substantially advance toward our 2050 climate goals" (CARB 2017:1, 3, 5, 20, 25–26). It identifies the reductions needed by each GHG emission sector (e.g., transportation, industry, electricity generation, agriculture, commercial and residential, pollutants with high global warming potential, and recycling and waste). CARB and other State agencies also released the 2030 Draft Natural and Working Lands Climate Change Implementation Plan consistent with the carbon neutrality goal of Executive Order B-55-18. The Plan furthers the State's goals through improving the carbon sequestration potential of the state's natural and working lands through improved soil health and forest management strategies.

The state has also passed more detailed legislation addressing GHG emissions associated with industrial sources, transportation, electricity generation, and energy consumption, as summarized below.

Cap-and-Trade Program

CARB administers the state's cap-and-trade program, which covers GHG emission sources that emit more than 25,000 $MTCO_2e$ per year ($MTCO_2e$/year), such as refineries, power plants, and industrial facilities. This market-based approach to reducing GHG emissions provides economic incentives for achieving GHG emission reductions.

Transportation-Related Standards and Regulations

As part of its Advanced Clean Cars program, CARB established more stringent GHG emission standards and fuel efficiency standards for fossil fuel–powered on-road vehicles. In addition, the program's zero-emission vehicle regulation requires battery, fuel cell, and plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025 (CARB 2016a:15). By 2025, when the rules will be fully implemented, GHG emissions from the statewide fleet of new cars and light-duty trucks will be reduced by 34 percent and cars will emit 75 percent less smog-forming pollution than the statewide fleet in 2016 (CARB 2016b:1).

Executive Order B-48-18, signed into law in January 2018, requires all State entities to work with the private sector to have at least 5 million zero-emission vehicles on the road by 2030, as well as 200 hydrogen fueling stations and 250,000 electric vehicle–charging stations installed by 2025. It specifies that 10,000 of these charging stations must be direct-current fast chargers.

CARB adopted the Low Carbon Fuel Standard (LCFS) in 2007 to reduce the carbon intensity of California's transportation fuels. The LCFS applies to fuels used by on-road motor vehicles and by off-road vehicles, including construction equipment (Wade, pers. comm., 2017).

In addition to regulations that address tailpipe emissions and transportation fuels, the State legislature has passed regulations to address the amount of driving by on-road vehicles. Since passage of SB 375 in 2008, CARB requires metropolitan planning organizations (MPOs) to adopt sustainable communities strategies (SCSs) showing reductions in GHG emissions from passenger cars and light trucks in their respective regions for 2020 and 2035 (CARB 2018c:1). These SCSs link land use and housing allocation to transportation planning and related mobile-source emissions. 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 Tahoe Basin. The Plan Area is in Sacramento County and governed by SACOG. Under SB 375, SACOG adopted its most recent *Metropolitan Transportation Plan/Sustainable Communities Strategy 2035* (MTP/SCS) in 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, both of which CARB confirmed the region would achieve by implementing the MTP/SCS (SACOG 2016:172; CARB 2018c:1). In March 2018, CARB promulgated revised targets tasking SACOG to achieve a 7 percent and a 19 percent per capita reduction by 2020 and 2035, respectively (CARB 2018c:1). SACOG is required to complete an updated MTP/SCS by February 2020. CARB's 2018 Progress Report indicates that SACOG, as well as many other MPOs in the state, are not on track to achieve these reduction targets (CARB 2018c:21–22).

Under SB 743 of 2013, the Governor's Office of Planning and Research (OPR) proposed changes to the State CEQA Guidelines, including the addition of Section 15064.3, which requires that CEQA transportation analysis move away from focusing on vehicle delay and level of service (OPR 2017a:77–90). In support of these changes, OPR published its *Technical Advisory on Evaluating Transportation Impacts in CEQA*, which recommends that the transportation impact of a project be based on whether the project would generate a level of vehicle miles traveled (VMT) per capita (or VMT per employee) that is 15 percent lower than that of 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). This metric is intended to replace the use of delay and level of service to measure transportation-related impacts. More detail about SB 743 is provided in the "Regulatory Setting" in Chapter 5, "Transportation and Circulation." The CNRA adopted OPR's proposed addition of Section 15064.3 to the State CEQA Guidelines in November 2018.

Legislation Associated with Electricity Generation

The State has passed legislation requiring the increasing use of renewables to produce electricity for consumers. California utilities are required to generate 33 percent of their electricity from renewables by 2020 (SB X1-2 of 2011); 52 percent by 2027 (SB 100 of 2018); 60 percent by 2030 (also SB 100 of 2018); and 100 percent by 2045 (also SB 100 of 2018).

Building Energy Efficiency Standards (Title 24, Part 6)

The energy consumption of new residential and nonresidential buildings in California is regulated by the State's Title 24, Part 6, Building Energy Efficiency Standards (California Energy Code). CEC updates the California Energy Code every 3 years with more stringent design requirements for reduced energy consumption, which results in the generation of fewer GHG emissions. The current California Energy Code (2016) is scheduled to be replaced by the 2019 standards on January 1, 2020. The 2019 California Energy Code will require builders to use more energy-efficient building technologies for compliance with increased restrictions on allowable energy use. Additionally, new residential units will be required to include solar panels, sized to offset the estimated electrical requirements of each unit (CCR, Title 24, Part 6, Section 150.1[c]14). CEC estimates that the combination of required energy-efficiency features and mandatory solar panels in the 2019 California Energy Code will result in new residential buildings that use 53 percent less energy than those designed to meet the 2016 California Energy Code. CEC also estimates that the 2019 California Energy Code will result in new commercial buildings that use 30 percent less energy than those designed to meet the 2016 standards, primarily through the transition to high-efficiency lighting (CEC 2018).

Local

Sacramento County General Plan

The Sacramento County General Plan contains the following GHG-related policy (Sacramento County 2017):

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 [Emergency Medical Services] response system that includes first responder emergency care and transportation services.

COMMUNITY PLANS

CORDOVA COMMUNITY PLAN

The Cordova Community Plan does not include objectives or policies specific to greenhouse gases or climate change.

VINEYARD COMMUNITY PLAN

The Vineyard Community Plan does not include objectives or policies specific to greenhouse gases or climate change.

SACRAMENTO COUNTY CLIMATE ACTION PLANNING

The Sacramento County Climate Action Plan was adopted on November 9, 2011 by the Sacramento County Board of Supervisors. The plan includes a GHG inventory for the unincorporated areas of Sacramento County for 2005, 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-owned 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 operating County-owned infrastructure (roads, water, waste, buildings, etc.); and
- Decrease use of fossil fuels by transitioning to renewable energy sources.

IMPACTS AND ANALYSIS

SIGNIFICANCE CRITERIA

The issue of global climate change is inherently a cumulative issue as the GHG emissions of individual projects cannot be shown to have a discrete, measurable effect on global climate. Thus, the Project's impact to climate change is addressed 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:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an 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 2005 GHG inventory developed for its CAP (see Table CC-2)[1] and in consideration of the State's goal of reducing emissions to 40 percent below 1990 levels by 2030, as mandated by SB 32. As shown below, separate thresholds have been included for residential energy, non-residential 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 converted to $MTCO_2e$ then combined to generate a total emissions threshold; it is this total threshold that will ultimately determine whether impacts are found to be significant. In response to the requirements to achieve 40 percent reduction in GHG emissions below 1990 levels under SB 32, 2030 targets and draft standards for achievement have been calculated for each sector from the 2005 baseline data.

Also note that the transportation and residential sectors are expressed in per capita, which is not applicable to nonresidential land uses. 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.

[1] Greenhouse gas emissions thresholds 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.

The buildout year for the Project is 2035. To evaluate the Project in light of the 2050 statewide GHG reduction goal identified in EO B-30-15, the draft 2030 thresholds were extrapolated using a 17 percent reduction, as shown below in Table 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. Also, given that the thresholds of significance were developed using the inventory year contained in the CAP, meeting these per capita thresholds of significance would demonstrate consistency with Sacramento County's CAP. Detailed calculations for the threshold determination can be found in Appendix AQ-1.

Table CC-2: Greenhouse Gas Significance Thresholds (Annual Metric Tons CO_2e)[1]

Sector	2005 Baseline	2020 Target	2020 Thresholds	Draft 2030 Mass Emission Target[2]	Draft 2030 Thresholds	2035 (Project-Specific Derived) Thresholds[1]
Residential Energy	1,033,142	878,275	1.33 per capita	527,243	0.78 per capita	0.65 per capita
Commercial & Industrial Energy	772,129	656,914	7.87 per 1,000 sq ft	395,760	4.59 per 1,000 sf	3.81 per 1,000 sf
Transportation	2,046,617	1,757,236	2.67 per capita	1,055,172	1.57 per capita	1.30 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] 2035 thresholds are not adopted by Sacramento County but are interpolated based on 2030 thresholds and keeping the county aligned with greenhouse gas (GHG) reduction goal of 80 percent below 1990 levels by 2050 per Executive Order B-30-15. Notably, the 2030 thresholds have not been formally adopted by Sacramento County at the time of writing this Draft EIR.

[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 2005 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 the temporary nature of the construction activities. Though regional 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 LCFS) and improved fuel efficiency. Standard mitigation applied for the purpose of reducing other air pollutants (see Chapter 6, "Air Quality") will further reduce GHG

emissions. For the aforementioned reasons including guidance from Sacramento County, 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 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 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 treatment and delivery, 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; see "Other Emissions," below. Construction-related emissions are provided in Appendix AQ-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-2. However, the buildout year of the Project is 2035. There is no completed development planned in 2020 (only construction); therefore, for the purposes of this analysis, and per guidance from Sacramento County, the Project's GHG emissions were evaluated for full buildout scenario in 2035.

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 heating and cooling systems, lighting, and appliances.

For the full buildout scenario in 2035, 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 under the Project 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 improvements 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., 60 percent renewable

energy 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 2035 full buildout scenario. 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 of residents that would populate these uses and compared to the County's extrapolated threshold for 2035 of 0.65 $MTCO_2e$ per capita/year. GHG emissions for energy consumption by nonresidential land uses (i.e., commercial, education, offices) were normalized by floor area and compared to the County's extrapolated threshold for 2035 of 3.81 $MTCO_2e$ per thousand square feet of floor space ($MTCO_2e$/Ksf).

Transportation Emissions

Transportation emissions are associated with 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 Project (DKS 2019). 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 Project, as well as other large foreseeable development including the Mather South Community Master Plan, NewBridge Specific Plan, and the West Jackson Highway Master Plan.

GHG vehicle emission factors for 2035 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 for the 2035 full buildout scenario. Emission rates were used to generate the total VMT-related emissions for the Project in 2035 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 2035 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.

IMPACT: PROJECT GREENHOUSE GAS EMISSIONS

PROPOSED PROJECT

Development of the 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 and CC-10 below for informational purposes only. Emissions estimates were categorized by residential land uses, nonresidential land uses, and transportation to be compared to Sacramento County extrapolated thresholds of significance for 2035. Emission estimates for each category are described separately below. The Project is also evaluated for consistency with adopted statewide and local plans intended to reduce GHG emissions.

ENERGY-RELATED GREENHOUSE GAS EMISSIONS FROM RESIDENTIAL LAND USES

The Project includes single-family and multi-family homes, as well as elementary and high schools. Residential 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-3 and compared to the calculated 2035 threshold (0.65 $MTCO_2e$ per capita/year) for residential land uses. As shown in Table CC-3, emissions associated with residential land uses would not exceed Sacramento County extrapolated thresholds of significance.

Table CC-3: Summary of Residential Energy-Related Greenhouse Gas Emissions for the Project in 2035[1]

	$MTCO_2e$/year	$MTCO_2e$/capita/year
Estimated Annual Residential GHG Emissions[2]	18,534	0.57
Residential Threshold of Significance	21,083	0.65
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] 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-1.

Source: Modeling conducted by Kleinfelder in 2019.

ENERGY-RELATED GREENHOUSE GAS EMISSIONS FROM NONRESIDENTIAL LAND USES

The Project includes nonresidential land uses, which could include a hospital, office park, pharmacy, library, gas stations, strip malls, and restaurants. Emissions associated with energy use and natural gas consumption were calculated for these land uses. Emissions are summarized below in Table CC-4 and compared to the calculated 2035 threshold (3.81 $MTCO_2e$/Ksf) for nonresidential land uses. As shown in Table CC-4, GHG emissions associated with nonresidential land uses would not exceed the Sacramento County thresholds of significance in 2035.

Table CC-4: Summary of Nonresidential Energy-Related Greenhouse Gas Emissions in 2035

	$MTCO_2e$/year	$MTCO_2e$/Ksf/year
Estimated Annual Nonresidential GHG Emissions [1]	3,406	1.71
Nonresidential Threshold of Significance	7,605	3.81
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 Kleinfelder in 2019.

TRANSPORTATION-RELATED GREENHOUSE GAS EMISSIONS

A traffic study was conducted for the Project, which included Project-generated VMT and trip generation for the existing-plus-project (i.e., 2035) scenario. This analysis assumed that the full buildout VMT estimates would occur by 2035, the Project's assumed buildout year. The total population for all residential land uses of the Project was used to compare the estimated mobile emissions to the 2035 VMT threshold of 1.30 $MTCO_2e$ per capita. As shown in Table CC-5, GHG emissions associated with transportation would exceed the Sacramento County threshold of significance.

Table CC-5: Summary of Transportation-Related Greenhouse Gas Emissions in 2035

	$MTCO_2e$/year	$MTCO_2e$/capita/year
Estimated Annual Transportation GHG Emissions	37,603	2.32
Transportation Threshold of Significance	21,083	1.30
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 Kleinfelder in 2019.

EMISSIONS TOTAL

Emissions from all sectors for the Project are summarized below in Table CC-6. As indicated above, energy consumption attributable to both residential and non-residential land uses are anticipated to be below the adjusted mass emissions limit. Transportation-related emissions are expected to exceed Sacramento County's mass

emissions GHG limit. The total $MTCO_2e$/year reduction needed for the Project to meet Sacramento County's per capita targets are calculated across the three sectors.

Table CC-6: Summary of Unmitigated Annual Greenhouse Gas Emissions Associated with the Project at Full Buildout (2035)

Sector	GHG Emissions ($MTCO_2e$/year)	Mass Emissions GHG Limit ($MTCO_2e$/year)[1]	Reduction Needed ($MTCO_2e$/year)
Residential Energy	18,534	21,083	(2,549)
Nonresidential Energy	3,406	7,605	(4,199)
Transportation	37,603	21,083	16,520
Landscape Equipment	106	NA	NA
Waste Generation	7,483	NA	NA
Water Use	890	NA	NA
Project/Reduction Total	**64,606**	**NA**	**11,327**

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 2035 thresholds by the Project's population (for residential and transportation sectors) and thousand square feet (for nonresidential sector).

Source: Modeling conducted by Kleinfelder in 2019.

Energy-related emissions associated with the proposed residential land uses category would be 0.57 $MTCO_2e$/capita, which is below the 0.65 $MTCO_2e$/capita threshold. Energy-related emissions from nonresidential land uses would result in 1.71 $MTCO_2e$/Ksf, which is below the 3.81 $MTCO_2e$/Ksf threshold. Both the residential and nonresidential sectors would be below the established thresholds, by 2,549 and 4,199 $MTCO_2e$/year, respectively. Emissions from Project-generated VMT in 2035 would result in 2.32 $MTCO_2e$/capita, which is above the 1.30 $MTCO_2e$/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 5,193 $MTCO_2e$/year would reduce the mobile sector's emissions to 32,410 $MTCO_2e$/year (2.0 $MTCO_2e$/capita), but an additional reduction of 11,327 $MTCO_2e$/year would be required to meet the threshold. Even with the additional reductions in GHG emissions from the energy demand of the land use 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. These levels of emissions also indicate that the Project would not be consistent with Sacramento County's CAP. This impact would be **significant**.

Mitigation Measure CC-1a would require the use of on-site GHG reduction measures identified in the greenhouse gas reduction plan (GHGRP) prepared for Alternative 2 (discussed below) including participation in an enhanced transit program and use of energy efficient boilers, residential electric hot water heaters; high efficacy public outdoor lighting, and energy efficient appliances. Based on modeling conducted for Alternative 2, these on-site measures would yield 9,773 $MTCO_2e$/year emissions reductions when applied to the land uses proposed under Alternative 2. As shown in

Table CC-6, the Project would require a total of 11,327 additional $MTCO_2e$/year to meet Sacramento County's per capita GHG thresholds of significance. This required reduction exceeds the anticipated 9,733 $MTCO_2e$/year value accomplished by application of the mitigation measures found in the GHGRP. The reduction estimates were determined through application of GHG percentage reduction values based on guidance from the California Air Pollution and Control Officers Association. It would be expected that when applied to the Project's emissions, the total $MTCO_2e$/year reductions achieved could be greater. However, the GHGRP prepared for Alternative 2 is intended to mitigate only Alternative 2's emissions, not the Project. As a result, application of Mitigation Measure CC-1a would not be sufficient to reduce the Project's emissions to Sacramento County's per capita thresholds. Therefore, Mitigation Measure CC-1b would be applied to the Project.

Mitigation Measure CC-1b would require that the Project Applicant develop a Project-specific GHGRP and/or other feasible, on-site GHG reduction mitigation measures sufficient to reduce operational GHG emissions to Sacramento County's per capita thresholds of significance for residential and nonresidential energy, and transportation. Application of Mitigation Measure CC-1b would provide the reductions required to meet the applicable thresholds of significance and therefore, would reduce the Project's contribution to global climate change to a **less-than-significant** level.

Alternative 2

Under this alternative, a large portion of the area designated as Low Density Residential would be included as an additional wetland preserve area, which would increase the size of the wetland preserve by 45.5 acres. The acreage of Low Density Residential would increase and the area designated for Medium Density Residential would decrease. However, the Land Use plan would remain substantially consistent with that of the Land Use plan for the Project. Emissions from the residential, nonresidential, and transportation sectors are analyzed against the same 2035 extrapolated GHG thresholds as developed by Sacramento County.

Energy-Related Greenhouse Gas Emissions from Residential Land Uses

Emissions from the residential sector for Alternative 2 are summarized in Table CC-7.

Table CC-7: Summary of Residential Energy-Related Greenhouse Gas Emissions in 2035[1]

	$MTCO_2e$/year	$MTCO_2e$/capita/year
Estimated Annual Residential GHG Emissions[2]	16,266	0.54
Residential Threshold of Significance	19,529	0.65
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] 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-1.

Source: Modeling conducted by Kleinfelder in 2019.

ENERGY-RELATED GREENHOUSE GAS EMISSIONS FROM NONRESIDENTIAL LAND USES

Emissions from the nonresidential sector for Alternative 2 are summarized in Table CC-8.

Table CC-8: Summary of Nonresidential Energy-Related Greenhouse Gas Emissions in 2035

	$MTCO_2e$/year	$MTCO_2e$/Ksf/year
Estimated Annual Nonresidential GHG Emissions[1]	2,258	1.12
Nonresidential Threshold of Significance	7,704	3.81
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 Kleinfelder in 2019.

TRANSPORTATION-RELATED GREENHOUSE GAS EMISSIONS

Emissions from the transportation sector for Alternative 2 are summarized in Table CC-8.

Table CC-8: Summary of Transportation-Related Greenhouse Gas Emissions in 2035

	$MTCO_2e$/year	$MTCO_2e$/capita/year
Estimated Annual Transportation GHG Emissions	35,957	2.39
Transportation Threshold of Significance	19,528	1.30
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 for Alternative 2 are summarized below in Table CC-9. As indicated above, energy consumption attributable to both residential and non-residential land uses are anticipated to be below the adjusted mass emissions limit. Transportation-related emissions are expected to exceed Sacramento County's mass emissions GHG limit. The total $MTCO_2e$/year reduction needed for the Project to meet Sacramento County's per capita targets are calculated across the three sectors.

Table CC-9: Summary of Unmitigated Annual Greenhouse Gas Emissions Associated with the Project at Full Buildout (2035)

Sector	GHG Emissions ($MTCO_2e$/year)	Mass Emissions GHG Limit ($MTCO_2e$/year)[1]	Reduction Needed ($MTCO_2e$/year)
Residential Energy	16,266	19,529	(3,263)
Nonresidential Energy	2,258	7,704	(5,446)
Transportation	35,957	19,528	16,429
Landscape Equipment	98	NA	NA
Waste Generation	5,158	NA	NA
Water Use	897	NA	NA
Project/Reductions Total	64,606	NA	7,721

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 2035 thresholds by the Project's population (for residential and transportation sectors) and thousand square feet (for nonresidential sector).
Source: Modeling conducted by Kleinfelder in 2019.

Energy-related emissions associated with the proposed residential land uses category would result in 0.54 $MTCO_2e$/capita, which is below the 0.65 $MTCO_2e$/capita threshold. Energy-related emissions from nonresidential land uses would result in 1.12 $MTCO_2e$/Ksf, which is below the 3.81 $MTCO_2e$/Ksf threshold. Both the residential and nonresidential sectors would be below the established threshold, by 3,263 and 5,446 $MTCO_2e$/year, respectively. Emissions from Alternative 2-generated VMT in 2035 would result in 2.39 $MTCO_2e$/capita, which is above the 1.30 $MTCO_2e$/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 8,708 $MTCO_2e$/year would reduce the mobile sector's emissions to 27,249 $MTCO_2e$/year (1.81 $MTCO_2e$/capita), but an additional reduction of 7,721 $MTCO_2e$/year would still be required to meet the threshold. Even with the additional reductions in GHG emissions from the residential and nonresidential energy sectors, Alternative 2's GHG emissions would exceed applicable Sacramento County thresholds of significance for transportation and result in a cumulatively considerable contribution to climate change. These levels of emissions also indicate that Alternative 2 would not be consistent with Sacramento County's CAP. This impact would be **significant**.

Implementation of Mitigation Measure CC-1a 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 (see Appendix AQ-1). 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 Measure CC-1a are shown below in Table CC-10.

As shown in Table CC-10 above, implementation of Mitigation Measure CC-1a would reduce transportation-related GHG emissions by 9,773 $MTCO_2e$/year which would be sufficient to meet the recommended 2035 threshold. After mitigation is applied, GHG emissions associated with the transportation sector would be 16,614 $MTCO_2e$/year, or 1.24 $MTCO_2e$/capita/year, which is below Sacramento County's 2035 threshold of 1.3 $MTCO_2e$/capita. Because Alternative 2 would meet the thresholds of significance for each section, it demonstrates consistency with the CAP.

Implementation of Mitigation Measure CC-1a would be sufficient to reduce GHG emissions to a **less-than-significant** level.

Table CC-10: Summary of Greenhouse Gas Emission Reductions from Mitigation Measures in 2035

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					
Enhanced Transit Program	NA	NA	NA	377	NA
High Efficacy Public Outdoor Lighting	NA	NA	NA	124	NA
Energy Efficient Appliances	NA	NA	NA	34	NA
Energy Efficient Boilers	NA	NA	NA	107	NA
Residential Electric Hot Water Heaters	NA	NA	NA	1,938	NA
Public EV Charging Stations	NA	NA	NA	4,022	NA
Residential EV Charging Stations	NA	NA	NA	3,171	NA
Emissions Sector Totals					
Residential Energy	7,959	9,764	(1,805)	1,805	Yes
Nonresidential Energy	8,307	9,764	(1,457)	1,457	Yes
Transportation	2,258	7,605	5,347	NA	No
Landscape Equipment	35,957	21,083	14,874	NA	NA
Waste Generation	98	NA	NA	NA	NA
Water Use	5,158	NA	NA	NA	NA
Total	897	NA	NA	9,773	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.

MITIGATION MEASURES

CC-1A The Project Applicant shall apply the following on-site greenhouse gas (GHG) mitigation measures as contained in the GHGRP into Alternative 2 to reduce operational emissions to Sacramento County's extrapolated per capita GHG thresholds of significance.

TRANSPORTATION

- The Project Applicant shall implement a program to provide a non-revocable funding mechanism that would pay for bus and/or shuttle operations between Alternative 2 and the Manlove Light Rail Station. The

nonrevocable funding mechanism would be administered by the County and would provide residents and employees of Jackson Township Alternative 2 with transit passes that would access the entire Regional Transit system.

- The Project Applicant shall install 480 public electric vehicle (EV) charging stations in commercial, retail, and office parking lots and up to 5 percent at school parking lots. Each EV charging station shall have two connections.
- The Project Applicant shall prewire all low density and medium density dwelling units (3,540 dwelling units for Alternative 2) plus 10 percent of the high density residential housing (10 percent of 2,050 dwelling units for Alternative 2, or 205 units in high density housing) to be conducive to installation of electric charging stations.

ENERGY

- The Project Applicant shall install energy efficient boilers as applicable in high-density housing (mid-rise apartments), discount club, office, high school, and supermarket land uses to achieve a 9.1 percent increase in energy efficiency. Energy efficient boilers shall only be installed to replace natural gas fueled boilers.
- The Project Applicant shall install electric hot water heaters in all single and multi-family housing units (low, medium, and high density), or a total of 5,690 dwelling units for Alternative 2.
- The Project Applicant shall install high efficacy public outdoor lighting for 16 percent of total outdoor lighting for Alternative 2 consistent with guidance from the California Air Pollution Control Officers Association (CAPCOA).
- The Project Applicant shall reduce the amount of residential energy use through the inclusion of EnergyStar appliances of all single- and multi-family dwelling units. Appliances include clothes washers, dishwashers, fans, and refrigerators.

CC-1b the Project Applicant shall prepare a GHGRP or implement all feasible, on-site GHG reduction measures to meet Sacramento County's per capita GHG thresholds of significance for the residential and nonresidential energy and transportation sectors. The per capita thresholds shall be developed based on Sacramento County's GHG inventory as well as statewide GHG reduction targets as directed by SB 32 (i.e., reducing statewide GHG emissions to 40 percent below 1990 levels by 2030) and Executive Order S-3-05 (i.e., reducing statewide GHG emissions to 80 percent below 1990 levels by 2050). The GHGRP, or on-site mitigation measures, shall demonstrate that the Project's operational emissions would not exceed the applicable thresholds for the aforementioned sectors.

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 Plan 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 flooding. (Refer to Chapter 14, “Hydrology, Drainage, and Water Quality,” for more details about flood protection and climate change.)

These issues would constitute effects of the environment on the Project and, as such, are not impacts of the Project pursuant to CEQA. Nonetheless, this analysis has been prepared to qualitatively disclose anticipated conditions and inform County decision makers of the range of potential effects that could occur, consistent with the fundamental purpose of CEQA.

Annual average temperatures in Sacramento County are projected to increase steadily. According to Cal-Adapt, the Plan 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 2019).

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 2019).

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 Plan Area will experience 20 extreme heat days per year in 2050 and 43 days per year by 2099 (Cal-Adapt 2019).

The Project would meet the 2019 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 Plan 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 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 2019). 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 (e.g., 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, and nearly all of 2018, several wildfire incidents occurred in Northern California that increased levels of particulate matter within Sacramento County. For instance, the 2018 Camp Fire, which burned through the town of Paradise in Butte County, resulted in hazardous concentrations of $PM_{2.5}$ exceeding 200 micrograms per cubic meter in Sacramento County for several days.

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 (CAL FIRE 2007). Further, through implementation of Metro Fire's CCWP and the policies listed in the County's 2030 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 2016). 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 2.360 acre-feet of water per year. The Project includes a Water Supply Master Plan Amendment to modify the existing Zone 40 Water Supply Master Plan so that it includes provision of water service to the Jackson Township Specific Plan Area. The amendment addresses the water demands and infrastructure necessary to service the Project and requires approval from the Sacramento County Water Agency Board of Directors (see Appendix WS-3). As discussed further in Chapter 19, "Water Supply," SWCA would have adequate capacity to support the Project; even during multiple dry years, as could occur during climate change.

As discussed above, climate change is a global issue. With respect to increased temperature, sea-level rise, and increased wildfire risk, the IPCC predicts these phenomena as occurring with a high-degree of confidence with a 1.5°C global temperature increase; however, other changes to climate such changes to precipitation patterns (i.e., more intense precipitation events and droughts) and increase flood risk are predicted with a medium level of confidence (IPCC 2018). Nonetheless, the exact location and degree of severity of impacts is speculative. The potential impacts to the Project from global climate change are, therefore, discussed above and provided for the purpose of disclosure.

Alternative 2

Although Alternative 2 differs from the Project in its mix of land uses and trip generation, the location would be nearly identical. Thus, the climate change impacts discussed above for the Project would also apply to Alternative 2.

10 CULTURAL RESOURCES

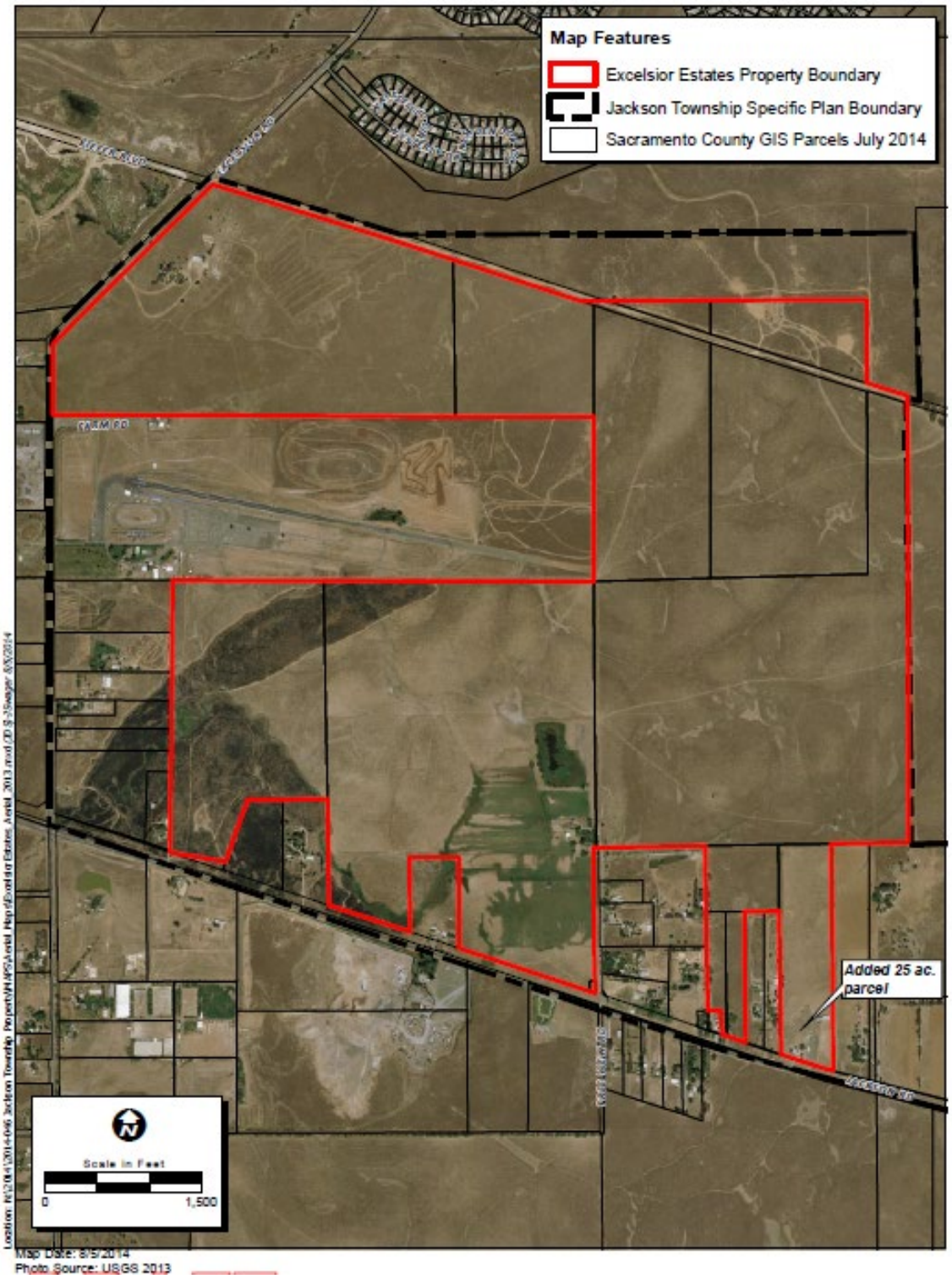
INTRODUCTION

Under CEQA, lead agencies must consider the effects of their projects on cultural resources. This chapter describes the regulatory and environmental setting for cultural resources in the Plan Area, identifies and analyzes impacts related to the implementation of the Project and Alternative 2, and if necessary, recommends mitigation measures to reduce or eliminate significant impacts.

Several cultural resource studies have been prepared within and in the vicinity of the Plan Area. Most recently, Ric Windmiller and Associates (January 2014) and ECORP (September 2014) prepared cultural resource studies for those properties owned by the Project Applicant within the Plan Area. The Excelsior Estates Area of Potential Effect (APE) is comprised of those properties owned by the Project Applicant and is outlined in Plate CR-1. The Windmiller and ECORP studies provide the primary background data for this chapter.

The remainder of the Plan Area was not subject to cultural resource investigations beyond a records search and literature review because the properties are owned by non-participating landowners. These properties have not been surveyed and evaluated for the National Register of Historic Places (NRHP) or California Register of Historical Resources (CRHR). This is appropriate for a program level analysis, but those properties not included in the Excelsior Estates APE will be subject to cultural resources studies as development applications are received by the County. These properties will be subject to the mitigation measures provided in this EIR, as well as any additional mitigation that may be recommended by future cultural resource studies.

There were no comments on the Notice of Preparation (NOP) pertaining to cultural resources.



Source: ECORP Consulting, Inc., Cultural Resources Inventory Addendum and Evaluation Report for the Excelsior Estates Project Area, Jackson Township Specific Plan, September 15, 2014.

Plate CR-2: Excelsior Estates APE

Environmental Setting

Resources within the APE

The Excelsior Estates APE is comprised of the 887-acres within the Plan Area that are owned by the Project Applicant. The Project Applicant anticipates that the maximum depth of ground disturbance will be 15 feet and the maximum height will be 30 feet above the grade.

As noted in the Introduction of this chapter, Ric Windmiller and Associates (2014 Windmiller) and ECORP (2014) completed the most recent cultural resource studies for the Plan Area. The 2014 Windmiller report included a pedestrian survey of the Excelsior Estates APE and identified five potential historic-era cultural resources. The purpose of the ECORP study was to evaluate the resources that had been identified in the 2014 Windmiller study for eligibility for the NRHP or the CRHR to meet US Army Corps of Engineers (USACE) standards for the Clean Water Act Section 404 permit, and to survey an additional 25-acre parcel that was acquired by the Project Applicant (and added to the Excelsior Estates APE) after the 2014 Windmiller study had been completed. ECORP conducted a pedestrian study of the 25 acre property; however, subsurface testing was not conducted because the area is not planned for immediate development and will remain zoned as agricultural residential for now. Development of this parcel and the remaining future urban growth area will require further studies and entitlements.

The five resources with potential cultural/historical significance recorded within the APE are: Field Number Excelsior-1 (Homestead Site), Field Number Excelsior-2 (Homestead Site), Field Number Excelsior-3 (Road Segment), Field Number Excelsior-4 (Electrical Transmission Lines and Towers), and Isolated Finds (Stone Flakes).

A sixth resource identified in earlier cultural resource studies (P-34-2106 Foundations) was further evaluated because it was determined to be outside of the APE; however, it will require evaluation before development can occur on the property on which it is located.

Field Number Excelsior-1 (Homestead Site)

This site consists of the ruins of a historic house and grounds that contains a large ovoid cellar pit, an over-mature black walnut tree, a well with iron windmill pump mounted on the well's portal, three tree stumps, and a privy. Subsurface testing of this site was carried out in August 2014 and identified domestic and architectural items dating to the 1890s.

Field Number Excelsior-2 (Homestead Site)

This site contains the ruins of a historical house and grounds, including a square cellar pit, a possible privy pit, a cluster of dead saplings on the east side of the cellar pit, and an over-mature black walnut tree. Subsurface testing was conducted in August 2014.

Field Number Excelsior-3 (Road Segment)

This site is a 2,500-foot unpaved segment of Kiefer Boulevard. The road segment averages approximately 15 feet in width and meanders between a broader fenced boundary. There are ruts from modern vehicles but no wagon ruts or other features 50 years old or older. Modern trash was located along the segment.

Field Number Excelsior-4 (Electrical Transmission Lines and Towers)

There are two parallel sets of high voltage electrical transmission lines with lattice-type steel towers that span the APE from the northeast to the southwest. Based on topographic maps and archival research indicating that right-of-way for the lines was purchased in 1956, the transmission lines were likely construction between 1956 and 1958.

P-34-2177 (Ranch Complex)

This site is a ranch complex with seven historic features, including two houses, one detached garage, two barns, a barn foundation, an agricultural pond, possibly a changing room for the pool, and a covered patio. Subsurface testing was conducted in August 2014.

P-34-2106 (Foundations)

These barn foundations, identified in the 2014 Windmiller study, are located outside of the APE.

25-Acre Property on Jackson Road

This property contains a historic structure built in 1930 and was added to the Excelsior Estates APE after the 2014 Windmiller study was completed.

Regulatory Setting

Federal

National Historic Preservation Act, 1966

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 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(l)). 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 are present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling and association and that:
>
> a) Are associated with events that have made a significant contribution to the broad patter of our history; or
>
> b) Are associated with the lives of persons significant in our past; or
>
> c) Embody the distinctive characteristic of a type, period, or method of installation, 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) Have yielded, or may be likely to yield, information important in prehistory or history.

State

Under CEQA, lead agencies must consider the effects of their projects on historical resources. The California Environmental Quality Act (CEQA) defines a "historical resource" as a resource listed in, or determined to be eligible for listing in, the 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 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 15064.5)).

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(g):

> 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 (Public Resources Code Section 21083.2 (a), (b) and (c)). 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

California Senate Bill (SB) 18 (Burton, Chapter 905, Statutes of 2004) requires local governments to consult with State- and federally recognized Native American tribes prior to making certain planning decisions and to provide notice to the tribes at certain key points in the planning process. These consultation and notice requirements apply to adoption and amendment of both general plans and specific plans. The principal objective of SB 18 is to preserve and protect cultural places of California Native Americans.

Assembly Bill 52

Pursuant to Assembly Bill (AB) 52, "[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 proposed project. That consultation must take place prior to 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 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 NOP for this EIR was filed with the State Clearinghouse on June 14, 2013. Therefore, this EIR is not subject to AB 52; however, County staff notified tribes of the Project via the SB 18 consultation process. Additional information is provided below under Methodology.

Local

2030 Sacramento County General Plan

The following 2030 General Plan policies pertaining to cultural resources are applicable to the Project:

CO-150. Utilize local, state and national resources, such as the NCIC, 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-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.

Community Plans

Cordova Community Plan

The Cordova Community Plan does not contain objectives pertaining to cultural resources or TCR's identified that would apply to the Project.

Vineyard Community Plan

The Vineyard Community Plan does not contain policies pertaining to cultural resources or TCR's that would apply to the Project.

Impacts and Analysis

Significance Criteria

1. Based on the CEQA Guidelines, a cultural resources impact is significant if implementation of the Project would: Cause a substantial adverse change in the significance of a historical resource;
2. Cause a substantial adverse change in the significance of an archaeological resource;
3. Disturb any human remains, including those interred outside of formal cemeteries; or
4. Cause a substantial adverse change in the significance of a tribal cultural resource.

Issues not Discussed Further

All potential archaeological, historical, and tribal cultural resources issues identified in the significance criteria are evaluated below.

Methodology

The impact analysis for archaeological and historical resources is based on the findings and recommendations of the *Cultural Resources Inventory Addendum and Evaluation Report for the Excelsior Estates Project Area, Jackson Township Specific Plan Sacramento County, California* (ECORP 2014),the *Excelsior Estates: Updated Cultural Resources Inventory and Evaluation for NHPA Section 106 Consultation, Sacramento County, California* (Windmiller 2014), and other prior studies appended to these reports. The analysis is also informed by the provisions and requirements of federal, state, and local laws and regulations that apply to cultural resources.

CULTURAL RESOURCES STUDIES

PREVIOUS STUDIES

Portions of the Plan Area have been the subject of as many as three cultural studies, and additional studies have been completed for properties surrounding the Plan Area. These studies did not identify historic or archeological resources eligible for the NRHP or CRHP.

- 1974: archaeologist Jerald J. Johnson conducted a filed survey of the Morrison Creek Stream Group, which included lakes along the Sacramento River, Mather Air Force Base, and a small portion of the Elder Creek drainage located in the central portion of the Plan Area.
- 1985: Mather Air Force Base archaeological study by the Archaeological Study Center, California State University surveyed the area just north of the Plan Area
- 1991: archaeological study of 1,041 acres directly west of the Plan Area by EDAW, Inc.
- 2008: archaeologist Sean Michael Jensen prepared a survey of the properties owned by the Project Applicant. Jensen observed six pieces of basalt and one piece of chert of Native American origin, all of which were located at widely scattered locations throughout the Excelsior Estates APE. The stone flakes were identified as “isolated finds” and their locations and specific characteristics were not identified. The study determined that the isolated finds were not eligible for the National Register.
- 2008: Far Western Anthropological Research Group conducted a survey along State Route 16 (also known as Jackson Highway or Jackson Road) south of the Plan Area. In their report, Far Western identified foundation remains from a barn that was impacted by improvements on Highway 16. The 2014 Windmiller study determined that the resource was not eligible for inclusion in the CRHR or the NRHP. The 2014 ECORP study did not reassess the resource because it is located outside of the Excelsior Estates APE. The ECORP study recommends that no ground disturbing activity or demolition should occur until the lead agencies can concur with the evaluation of eligibility provided in the 2014 Windmiller study.
- 2009: Ric Windmiller studied the 800 acres adjoining the Plan Area to the east.

NATIVE AMERICAN CONSULTATION

The 2014 Windmiller study included documentation of Native American Consultation. In 2013, the NAHC indicated that a sacred lands file search had been negative, but provided a list of 14 Native American contacts whom may have information about possible sites in the area. On October 7, 2013, Windmiller sent letters to each contact asking for information on any possible sites of Native American significance within the Excelsior Estates APE.

Responses were received from representatives of the United Auburn Indian Community of the Auburn Rancheria (October 18, 2013), the Ione Band of Miwok Indians (October

25, 2013), the Shingle Springs Band of Miwok Indians (December 2, 2013), and the Wilton Rancheria (December 11, 2013). The responses requested that they be able to review any additional reports prepared for the Plan Area, including archaeological reports, environmental documents, additional mapping, full records searches, and geotechnical data. The Shingle Springs Band of Miwok Indians requested to initiate consultation, but no further documentation of consultation is included in the report.

On January 31, 2014, Windmiller left messages for those tribes who had not responded previously. One contact from the Colfax-Todds Valley Consolidated Tribe indicated that she had no knowledge of sites within the Plan Area.

FIELD ASSESSMENT

The Excelsior Estates APE was subjected to an intensive pedestrian survey in 2007-2008 as part of the 2008 Sean Michael Jensen cultural resources study. That pedestrian survey was done in 15-20 meter transects while searching for prehistoric archaeological resources and 20-30 meter transects while looking at historic sites. Due to this and another previous pedestrian survey done in 1974, the 2014 Windmiller study included a pedestrian survey done on widely-spaced transects in November 2013.

ECORP included an intensive pedestrian survey for the 25-acre parcel that had been added to the APE since the preparation of the 2014 Windmiller study. The pedestrian survey for this property revealed a historic-era residence with a barn and corrals. The house was built in 1930, and the barn was constructed between 2004 and 2005 and so is not considered to a historic resource. The residence was not evaluated for eligibility for the NRHP or CRHR, but the ECORP study acknowledged that an architectural historian would need to conduct this evaluation.

SB-18 CONSULTATION

County staff sent letters to eight tribes inviting them to consult on the project under SB-18 on September 26, 2013. Responses were received from Shingle Springs Rancheria and the United Auburn Indian Community of the Auburn Rancheria requesting consultation.

The October 18, 2013 response from the United Auburn Indian Community of the Auburn Rancheria requested that the tribe be consulted on the Project and to set a meeting date. After several follow-up inquiries between County staff and tribal representatives, a consultation meeting took place on January 17, 2014. At the meeting, the proposed Project and the other Jackson Highway Master Plan projects were introduced. The tribal representatives requested Project GIS shape files and a follow-up meeting in February or March 2014; however, no further contact or response was received.

The Shingle Springs Band of Miwok Indians sent a letter dated October 28, 2013 requesting to be added as a consulting party in identifying any Traditional Cultural Properties. Voicemail and e-mail messages were sent to the Assistant Cultural Resource Director and the Administrative Assistant requesting possible meeting dates, but no response was received.

On June 24, 2016, the County sent SB-18 letters to a revised list of tribal representatives provided by the Native American Heritage Commission, including the two tribes who had previously requested consultation in 2013. The letters sent to the Shingle Springs Band of Miwok Indians and the United Auburn Indian Community of the Auburn Rancheria summarized the previous responses and consultation efforts. No responses were received.

Impact: Cause a Substantial Adverse Change in the Significance to a Historical Resource

Proposed Project

The 2014 Windmiller study identified five potential cultural resources: two homestead sites (Excelsior-1 and Excelsior-2), one ranch complex (P-34-2177), one electrical transmission line (Excelsior-3), and one historic road segment (Excelsior-4). The 2014 ECORP report evaluated these resources and determined that none meet the criteria for inclusion on the NRHP or CRHR. The 2014 ECORP report recommended no further action for these resources. Therefore, impacts of the Project on these resources would be less than significant.

In addition to the five resources identified above, the 2014 Windmiller study identified a barn foundation located along Jackson Road (P-34-2106). The site had been heavily disturbed and impacted by roadway improvements. The 2014 Windmiller study evaluated the resource and determined that it was not eligible for inclusion in the NRHP or CRHR. The ECORP report noted that the resource was located outside of the Excelsior Estates APE, and recommended further evaluation.

Likewise, ECORP recommended further evaluation of the 25-acre property on Jackson Road that was added to the Excelsior Estates APE after completion of the 2014 Windmiller study. ECORP conducted a pedestrian survey of the property and documented a historic structure built in 1930; however, the structure was not evaluated for eligibility in the NRHP or CRHR. This resource is located within the area designated as Agriculture in the Plan Area. The area is assumed for future urban development, but the timeframe of development is unknown, and the area is likely to remain in agricultural use for the foreseeable future.

The cultural resource consultants did not have access to the non-participating properties; therefore, future development within these properties will require further cultural resource studies and evaluations prior to approval of their development.

Based on this information, the impact associated with development of the property containing P-34-2106, the 25-acre parcel, and the remaining non-participating properties is considered to be **potentially significant**, and further evaluation is required. Project impacts will be **less than significant with mitigation** with implementation of Mitigation Measure CR-1.

Alternative 2

Alternative 2 would have a smaller development footprint than the Project due to a larger wetland preserve; however, the APE for Alternative 2 includes the 25-acre

property added to the Excelsior Estates APE and non-participating properties. Although the potential for impact would be slightly reduced from the Project due to the slightly smaller development footprint under Alternative 2, non-participating properties would still require additional evaluation, as specified in Mitigation Measure CR-1. Therefore, the impact from Alternative 2 on historical resources would be **less than significant with mitigation.**

Mitigation Measures

CR-1: Cultural resources studies shall be prepared for each future development application for non-participating properties, the property containing P-34-2106, and the 25-acre parcel within the Plan Area. All cultural resources studies shall be prepared by a cultural resources professional that meets the Secretary of the Interior's Professional Qualifications Standards. Studies should include a full pedestrian survey of the subject property.

A historic resource evaluation report shall be completed prior to development of the 25-acre property added to the Excelsior Estates APE that provides an eligibility analysis for the historic structures located within that property. The studies should provide mitigation strategies where required for resources.

Impact: Cause a Substantial Change to Archaeological Resources

Proposed Project

No archaeological resources were identified as a result of studies conducted in the Excelsior Estates APE. A 2008 cultural resources report prepared for properties within the Plan Area described seven artifacts, including six pieces of basalt and one piece of chert, that were discovered scattered throughout the properties. That report did not note the specific locations of the artifacts, nor did it complete full documentation of the artifacts, and they were described as isolates. Despite the discovery of these artifacts, the two subsequent cultural resources studies prepared for the Excelsior Estates APE did not recover any additional archaeological evidence anywhere within the APE, nor did archival research provide substantial evidence that similar artifacts are likely to be found within the Plan Area. Given that previous artifacts were discovered, although not well documented, and because it is still possible that significant buried archaeological materials are present within the Excelsior Estates APE and the Plan Area, it is possible that such resources could be uncovered during ground disturbing activities associated with development. This impact would be **potentially significant**, but the implementation of Mitigation Measure CR-2 would reduce this impact to **less than significant with mitigation**.

Alternative 2

Alternative 2 would have a reduced development footprint due to a larger wetland preserve area, so the potential to encounter unknown archaeological resources is slightly reduced from that of the Project. Like the Project, there are no known archaeological resources within the Plan Area, but it is possible that unknown resources could be uncovered during ground-disturbing activities. Therefore, the impact would be

potentially significant. With implementation of Mitigation Measure CR-2, the impact would be **less than significant with mitigation**.

Mitigation Measures

CR-2: In the event that human remains are discovered in any location other than a dedicated cemetery, work shall be halted and the County Coroner contacted. For all other unexpected cultural resources discovered during Project construction, work shall be halted until a qualified archaeologist may evaluate the resource encountered.

1. 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 the Office of Planning and Environmental Review 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.
2. In the event of an inadvertent discovery of cultural resources (excluding human remains) during construction, all work must halt within a 100-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 Project 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 Project Applicant's expense.
    a. Work cannot continue within the 100-foot radius of the discovery site until the archaeologist and/or tribal monitor 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.
    b. If a potentially-eligible resource is encountered, then the archaeologist and/or tribal monitor, 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.

Impact: Disturbance of Human Remains

Proposed Project

No human remains are known to be present within the Plan Area; however, it is possible that human remains, particularly those outside a designated cemetery, may be encountered during ground-disturbing activities. This impact would be *potentially significant;* however, implementation of Mitigation Measure CR-2 (above), the impact would be reduced to **less than significant with mitigation**.

Alternative 2

Alternative 2 would have a reduced development footprint due to larger wetland preserve, so the potential to encounter unknown archaeological resources is slightly reduced from that of the Project. Like the Project, there are no known burials of human remains within the Plan Area, but it is possible that unknown remains could be uncovered during ground disturbing activities. Therefore, the impact would be **potentially significant**, but can be reduced to **less than significant with mitigation** with implementation of Mitigation Measure CR-2 (above).

Mitigation Measures

Implement Mitigation Measure CR-2.

Impact: Change in Significance of a Tribal Resource

Proposed Project

There are no known tribal resources located within the Plan Area. A search of the NAHC's sacred lands file search did not reveal any known tribal resources. In addition, 14 Native American tribes with potential interests in the area were contacted as part of the 2014 Windmiller study. This report only addressed the properties that were owned by the Project Applicant at that time, which excludes the 25-acre parcel added to the APE in 2014. The correspondence sent to the tribes requested information and asked if the tribes had concerns regarding known or suspected sites of Native American significance. Four tribes responded requesting that they receive notification when future projects occur within the Plan Area and for additional information. None of the responses stated specifically that known resources are located within the APE, but all requested to review more detailed studies.

The County sent requests to consult to tribes under SB-18 in 2013 and 2016; two tribes responded in 2013 but neither tribe responded further. The 2016 consultation letters sent by the County did not receive any responses from any of the tribes contacted, including the two that previously requested consultation in 2013.

Although no resources were specifically identified as being within the Excelsior Estates APE, some of the tribes contacted indicated that there could be tribal resources within the APE. Since the tribes were not notified of the potential for development within the non-participating properties of the Plan Area, it must also be assumed that those areas may also contain tribal resources. Therefore, this impact is **potentially significant**, but

can be **less-than-significant with mitigation** with implementation of Mitigation Measures CR-1 and CR-2 (above).

Alternative 2

Alternative 2 would have a reduced development footprint due to a larger wetland preserve. Although the potential to encounter unknown tribal resources would be slightly reduced from that of the Project, the impact would be **potentially significant** due to the large portion of the Plan Area that would be subject to development. With implementation of Mitigation Measures CR-1 and CR-2, this impact would be reduced to **less than significant with mitigation**.

Mitigation Measures

Implement Mitigation Measures CR-1 and CR-2.

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11 ENERGY

INTRODUCTION

This section was prepared pursuant to CEQA Guidelines Section 15126 and Appendix G of the CEQA Guidelines, which requires that EIRs include a discussion of the potential energy impacts of projects. The analysis considers whether the Project and Alternative 2 would result in inefficient, wasteful, and unnecessary consumption of energy or conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

One comment received in response to the Notice of Preparation requested an analysis of potential energy use (including transportation-related energy), sources of energy supply, and ways to reduce energy demand.

ENVIRONMENTAL SETTING

PHYSICAL SETTING

ENERGY FACILITIES AND SERVICES IN THE PLAN AREA

Electric service in the Plan Area is provided by the Sacramento Municipal Utility District (SMUD). There is an existing SMUD and Pacific Gas & Electric Company (PG&E) transmission corridor that traverses the southern portion of the Plan Area and contains two SMUD transmission circuits (the Cordova - Hedge 230 kilovolt [kV] & the Cordova - Pocket 230 kV lines) and two PG&E transmission circuits. Additionally, SMUD has 12 kV distribution facilities running along Jackson Road (also referred to as Jackson Highway) and Excelsior Road. Natural gas service is provided by PG&E. An existing 6-inch steel main line traverses the northern portion of the Plan Area within the Kiefer Boulevard right of way.

STATE-WIDE 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.

California accounts for less than 1 percent of total U.S. natural gas reserves and production. California's natural gas output equals about one-tenth of state demand. Almost two-thirds of California households use natural gas for home heating, and more than two-fifths of California's utility-scale net electricity generation is fueled by natural gas (EIA 2019).

As of July 2018, the California electricity system was powered by 29 percent renewables, including biomass, geothermal, small hydroelectric, solar, and wind (CEC 2018). Details on California renewable energy policy is included below in the Regulatory Setting. Natural gas-fired power plants fueled more than two-fifths of the total in-state net electricity generation. California has the nation's second-largest conventional hydroelectric generating capacity

after Washington state and is among the top three hydropower-producers in the nation (EIA 2019). SMUD is the primary electricity supplier in Sacramento County.

TRANSPORTATION FUELS

Gasoline and diesel fuel sold in California for motor vehicles are refined in California to meet specific formulations required by the California Air Resources Board (CARB). In addition, 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, the federal government, transit agencies, utilities, and other public and private entities. As of July 2019, California contained 21,589 alternative fueling stations (Alternative Fuel Data Center 2019).

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 2017, non-residential customers in Sacramento County including the incorporated cities within the County, consumed 6,284 Gigawatt Hours (GWh) of electricity while residential customers consumed 4,242 GWh of electricity. In the same year, non-residential customers in Sacramento County consumed 110 million therms of natural gas and residential customers consumed 198 million therms of natural gas (CEC 2019a).

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. 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 9, "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 (USDOT), 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 (EV), radioactive waste, and energy conservation. The act provides tax incentives and marketing strategies to 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 alternative fuel vehicles 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 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.

Integrated Energy Policy Report

SB 1389 (Chapter 568, Statutes of 2002) required CEC to: "conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The Energy Commission shall use these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety" (Public Resources Code Section 25301(a)). This work culminated in the Integrated Energy Policy Report (IEPR).

CEC adopts an IEPR every 2 years and an update every other year. The 2017 IEPR is the most recent IEPR, which was adopted March 16, 2018. The 2017 IEPR provides a summary of priority energy issues currently facing the State, outlining strategies and recommendations to further the State's goal of ensuring reliable, affordable, and environmentally-responsible energy sources. Energy topics covered in the report include progress toward statewide renewable energy targets and issues facing future renewable development; efforts to increase energy efficiency in existing and new buildings; progress by utilities in achieving energy efficiency targets and potential; improving coordination among the State's energy agencies; streamlining power plant

licensing processes; results of preliminary forecasts of electricity, natural gas, and transportation fuel supply and demand; future energy infrastructure needs; the need for research and development efforts to statewide energy policies; and issues facing California's nuclear power plants.

Legislation Associated with Electricity Generation

The State has passed legislation requiring the increasing use of renewables to produce electricity for consumers. California utilities are required to generate 33 percent of their electricity from renewables by 2020 (SB X1-2 of 2011); 52 percent by 2027 (SB 100 of 2018); 60 percent by 2030 (also SB 100 of 2018); and 100 percent by 2045 (also SB 100 of 2018). More detail about these regulations is provided in Chapter 9, "Climate Change."

Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) 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, Statutes 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 in partnership with CARB and in consultation with other State, federal, and local agencies. The 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 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 to 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 recommends actions so that the State can meet its clean energy, waste reduction, and climate protection goals. The 2012 Bioenergy Action Plan updates the 2011 plan and provides a more detailed action plan to achieve the following goals:

- increase environmentally- and economically-sustainable energy production from organic waste;

- encourage the development of diverse bioenergy technologies that increase local electricity generation, combined heat and power facilities, renewable natural gas, and renewable liquid fuels for transportation and fuel cell applications;
- create jobs and stimulate economic development, especially in rural regions of the state; and
- reduce fire danger, improve air and water quality, and reduce waste.

As of 2017, 2.3 percent of the total electricity system power in California was derived from biomass (CEC 2018).

California Building Energy Efficiency Standards (Title 24, Part 6)

The energy consumption of new residential and nonresidential buildings in California is regulated by the state's Title 24, Part 6, Building Energy Efficiency Standards (California Energy Code). The California Energy Code 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. CEC updates the California Energy Code every 3 years with more stringent design requirements for reduced energy consumption, which results in the generation of fewer GHG emissions. In 2016, CEC updated the California Energy Code again, effective January 1, 2017. CEC estimates that the 2016 California Energy Code is 28 percent more efficient than 2013 California Energy Code for residential construction and is 5 percent more efficient for non-residential construction.

The 2019 California Energy Code was adopted by CEC on May 9, 2018 and will apply to projects constructed after January 1, 2020. The 2019 California Energy Code is 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 electricity needs of each residential unit (CCR, Title 24, Part 6, Section 150.1(c)4). CEC estimates that the combination of mandatory on-site renewable energy and prescriptively-required energy efficiency standards will result in a 53 percent reduction in new residential construction as compared to the 2016 California Energy Code. Non-residential buildings are anticipated to reduce energy consumption by 30 percent as compared to the 2016 California Energy Code primarily through prescriptive requirements for high-efficiency lighting (CEC 2019b). The Energy Code is 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 due to local climatologic, geologic, or topographic conditions, provided that these standards exceed those provided in the California Energy Code.

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.

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 MMT CO_2e. As a result, California has reached the target established in AB 32 to reduce statewide GHG emissions to 1990 levels (431 $MMTCO_2e$) by 2020 and has done so 4 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 on 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 9, "Climate Change."

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 on 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

EO 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 a 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 on 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 EVs 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 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 EV 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 following 2030 General Plan policies pertaining to energy use are applicable to the Project:

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.

Community Plans

Cordova Community Plan

The Cordova Community Plan does not contain objectives related to energy that would apply to the Project.

Vineyard Community Plan

The Vineyard Community Plan, which was developed in 1985, provides guidance for growth and development in the community planning area. Policies identified in the plan that are applicable to the Project include:

FU 6. Water conservation, waste handling and energy-efficient designs at least to minimum County standards will be encouraged in all residential developments.

Impacts and Analysis

Significance Criteria

Based on Appendix G of the State CEQA Guidelines, the Project would have a significant impact related to energy if it would:

- result in the wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation or;
- conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

Issues Not Discussed Further

All issues have been evaluated below.

Methodology

Construction

Development of the Project would be anticipated to occur over a 15-year period from 2020 through 2035. 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 diesel fuel. Energy consumption estimates are included in Appendix EN-1. Construction-related energy consumption levels associated with Project implementation were calculated using information included in the Air Quality Mitigation Plan and Greenhouse Gas Reduction Plan for the proposed Project (AQMP/GHGRP) which was prepared for this EIR (Kleinfelder 2019). See Appendix AQ-1 for the full AQMP/GHGRP. Information included construction assumptions in the modeling outputs from California Emissions Estimator Model (CalEEMod) version 2016.3.2 computer program (CAPCOA

2017) which were estimated using Project specific construction activity data. Fuel use associated with construction of the Project included transportation fuel consumption associated with vendor and hauling trips, construction worker commute trips for all phases of construction activity as well as off-road equipment used for each phase of construction. Fuel use rates for on-road vehicles were calculated using information in CARB's EMFAC2017 model which includes average fuel usage rates by vehicle class, fuel type (e.g., diesel, gasoline, natural gas, and electricity), speed bin, calendar year, and county. Fuel use rates for off-road equipment were based on fuel usage factors included in the South Coast Air Quality Management District CEQA Air Quality Handbook (SCAQMD 1993).

Operations

Energy use related to the Project would include electricity and natural gas use in new buildings for space heating and cooling, appliances, facility and equipment operation, lighting, and other miscellaneous plug loads in residential and non-residential buildings. Transportation-related fuel consumption would result from new vehicle trips associated with the development of new trip generating land uses as part of the Project. This would include the use of fuels and electricity to power cars, trucks, and public transportation vehicles.

Energy use associated with proposed residential and non-residential buildings included in new land uses was estimated based on the AQMP/GHGRP. Information in the plan included energy use assumptions for various land uses that would be developed as part of the Project which were estimated in CalEEMod. The AQMP/GHGRP included a set of measures which would reduce energy use associated with the Project including measures to reduce Project-related VMT and energy use associated with new buildings. These measures were included in the CalEEMod modeling. Details on the specific measures and how they were incorporated into the CalEEMod modeling can be found in the AQMP/GHGRP and are discussed further below.

Transportation fuel-use associated with operation of the Project were calculated by applying average fuel usage rates per vehicle mile to the total annual VMT estimates associated with the Project (*s*ee Appendix TC-1 for details on the assumptions for 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 the analysis of Project-related transportation fuel use.

Impact: Wasteful, Inefficient, or Unnecessary Consumption of Energy, During Project Construction or Operation

Proposed Project

Appendix G 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 current California Energy Code standards for building energy efficiency and future updates to the standards would result in energy-efficient buildings developed as part of the Project. However, compliance with building codes does not adequately address all potential energy impacts during Project construction and operation. For example, energy would be required to transport people and goods to and from the Plan Area. This analysis considers all energy use associated with the Project.

CONSTRUCTION ENERGY USE

Project implementation would result in the development of new land uses including low- to high-density residential, commercial, office, public facilities, parks, 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. Table EN-1 summarizes the levels of energy consumption from the construction of all land uses as part of the Project. Energy use resulting from construction worker commute trips and construction equipment activity would be typical for the types of land uses included in the Project.

Table EN-1: Project Construction Energy Use

Construction Phase	Diesel (gallons)	Gasoline (gallons)
Site Preparation	21,998	706
Grading	92,691	2,022
Building Construction	2,564,910	4,244,378
Paving	24,278	849,280
Architectural Coating	36,212	1,079
Total	**2,740,088**	**5,097,465**
Annual (2020-2035)	**195,721**	**364,105**

Source: Calculations by Ascent Environmental in 2018

Energy would be required to construct the Project, operate and maintain construction equipment, and transport construction materials. The one-time energy expenditure required to construct the physical buildings and infrastructure associated with the Project would be nonrecoverable. An estimated 5,507,428 gallons of gasoline and 2,740,088 gallons of diesel would be consumed to enable Project construction. The energy needs for Project construction would be temporary and would not be anticipated to require additional capacity or increase peak or base period demands for electricity or other forms of energy. Construction equipment use and associated energy consumption would be typical of that associated with the construction of new residential and commercial projects in a suburban setting.

OPERATIONAL BUILDING ENERGY AND STATIONARY SOURCES

Energy demand associated with the development of the 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 stationary equipment (e.g., generators, landscaping equipment). Transportation-related energy consumption would include the use of fuels and electricity to power cars, trucks and public transportation vehicles.

Section 7.7, “Sustainability,” in Chapter 7 of the Jackson Township Specific Plan includes several policies which would reduce energy use associated with the new land uses developed as part of the Project. Specifically, Goal 7.5 encourages the incorporation of alternative energy resources and energy efficient equipment in all new buildings to be developed as part of the Project.

All buildings to be developed as part of the Project would be required to comply with the California Energy Code standards for building energy efficiency. As the Project is developed through 2035, the California Energy Code is anticipated to be updated with increasingly stringent energy efficiency requirements. This would result in increased building energy efficiency over time as buildings continue to be developed as part of the Project. Nonetheless, Project implementation would still result in an increase in overall energy use compared to existing conditions. 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 76,261 megawatt-hours per year of electricity and 177,269 million British thermal units (Btu) per year of natural gas would be consumed. The levels of operational energy use estimated for the Project would be typical for the types of residential, commercial, educational, and light industrial land uses included in the Project.

Table EN-2: Project Operational Energy Use

New Land Uses	Energy Use	Units
Residential Designations		
Electricity	42,503	MWh/year
Natural Gas	122,717	MMBtu/year
Commercial + Office Zones		
Electricity	28,745	MWh/year
Natural Gas	47,303	MMBtu/year
Public/Quasi Public Zones		
Electricity	3,477	MWh/year
Natural Gas	7,249	MMBtu/year
Parking Lots/Parking Garages		
Electricity	1,536	MWh/year
Natural Gas	-	MMBtu/year
Total		
Electricity	76,261	MWh/year
Natural Gas	177,269	MMBtu/year

Notes: MWh/year = megawatt-hours per year; MMBtu/year = million British thermal units per year.
Source: Calculations by Ascent Environmental in 2019

OPERATIONAL TRANSPORTATION ENERGY USE

Project implementation would involve the development of new land uses over the buildout period of the Project with construction ending in 2035. Development of these new land uses would result in new vehicle trips, discussed in detail in Chapter 20, "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 of 3,143,742 gallons of gasoline, 697,718 gallons of diesel, and 64,000 diesel equivalent gallons of natural gas.

Table EN-3: Project Annual Operational Transportation Energy Use

Vehicle Type	Diesel (gal/year)	Gasoline (gal/year)	Natural Gas (DEG/year)	Electricity (MWh/year)
Passenger Vehicles	17,325	2,584,696	-	N/A
Trucks	661,025	505,025	15,413	N/A
Buses	19,365	54,010	48,586	N/A
Total	**697,715**	**3,143,731**	**64,000**	**N/A**

Notes: gal/year = gallons per year, DEG/year = diesel equivalent gallons per year, MWh/year = megawatt hours per year, N/A = not applicable

Source: Calculations by Ascent Environmental in 2019

Chapter 4 of the Jackson Township Specific Plan, "Circulation and Mobility," includes policies to reduce automobile use as the primary mode of transportation by providing adequate pedestrian and bicycle facilities throughout the Plan Area. 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. Listed below are the measures included in the Jackson Township Specific Plan document which would reduce transportation-related energy.

- The Project would be located less than 5 miles from other existing high-density commercial/job center areas and result in short vehicle trips to destinations.
- The Project would provide a compact mix of land uses in close proximity to each other with a highly connected street and trail network.
- Approximately 15 percent of the total commercial square footage is dedicated to a mixed-use facility that combines residences and commercial/retail uses and would help reduce the demand for vehicle trips.
- Most residential units are within 1,320 feet (one-quarter mile) of a neighborhood park, open space, school, and/or bicycle/pedestrian trail and would help reduce the demand for vehicle trips associated with recreational activities.
- Most residential units are less than one-half mile from shopping and services and would help reduce the demand for vehicle trips.
- The Project design includes locating at least four schools within the Project boundaries such that most students can walk to a local school.

- The Project design includes access to high-frequency bus service that connects to the Watt/Manlove light rail station.
- The Project design promotes a multi-modal system that makes public transit, walking, and bicycling viable and attractive travel choices for residents and employees.

Operational activity associated with the Project's land uses would generate new vehicles trips resulting in the consumption of gasoline, diesel fuel, and natural gas. 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 outlined in the proposed Design Guidelines (Appendix B of the Jackson Township Specific Plan). As discussed above, the Project would include design features 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. For these reasons, the Project would not result in in the wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation. Therefore, this impact would be **less than significant**.

In addition to the Project design features that would reduce operational energy use, Mitigation Measure CC-1a and Measure CC-1b would be applied to the Project to address the Project's contribution to climate change and would further reduce energy use. Mitigation Measure CC-1a would require the use of on-site GHG reduction measures identified in the greenhouse gas reduction plan (GHGRP) prepared for Alternative 2 (discussed below). Mitigation Measure CC-1b would require that the Project Applicant develop a Project-specific GHGRP and/or other feasible, on-site GHG reduction mitigation measures sufficient to reduce operational GHG emissions to Sacramento County's per capita thresholds of significance for residential and nonresidential energy, and transportation.

Implementation of the GHGRP as part of Mitigation Measure CC-1a includes strategies that would reduce GHG emissions associated with the Project but would also reduce energy use. These include participation in an enhanced transit program and use of energy efficient boilers, residential electric hot water heaters; high efficacy public outdoor lighting, and energy efficient appliances.

Table EN-4 summarizes the levels of energy consumption associated with the operation of Project land uses and includes the energy use reductions that would be achieved through the GHGRP. Under this scenario, the Project is anticipated to result in energy consumption of an estimated 49,060 megawatt-hours per year of electricity and 154,037million Btu per year of natural gas. This would result in a 36 percent reduction in electricity use and 13 percent reduction in natural gas use compared to the Project without Mitigation Measure CC-1a.

Table EN-4: Project Operational Energy Use with Mitigation

New Land Uses	Energy Use	Units
Residential Designations		
Electricity	42,503	MWh/year
Natural Gas	122,717	MMBtu/year
Commercial + Office Zones		
Electricity	28,745	MWh/year
Natural Gas	47,303	MMBtu/year
Public/Quasi Public Zones		
Electricity	3,477	MWh/year
Natural Gas	7,249	MMBtu/year
Parking Lots/Parking Garages		
Electricity	1,536	MWh/year
Natural Gas	-	MMBtu/year
Total		
Electricity	49,060	MWh/year
Natural Gas	154,037	MMBtu/year

Notes: MWh/year = megawatt-hours per year; MMBtu/year = million British thermal units per year.

Source: Calculations by Ascent Environmental in 2019

ALTERNATIVE 2

Alternative 2 would result in a 45.5-acre increase in an area designated Wetland Preserve compared to the Project. Table EN-5 includes the total energy use associated with construction of Alternative 2.

Table EN-5: Alternative 2 Construction Energy Use

Construction Phase	Diesel (gallons)	Gasoline (gallons)
Site Preparation	21,998	706
Grading	92,691	2,022
Building Construction	2,564,910	4,244,378
Paving	24,278	1,079
Architectural Coating	36,212	849,280
Total	**2,740,088**	**5,097,465**
Annual (2020-2035)	**182,673**	**339,831**

Source: Calculations by Ascent Environmental in 2019

Table EN-6 summarizes the levels of energy consumption associated with the operation of land uses that would be built under Alternative 2. For all Project land uses anticipated to result in energy consumption, an estimated 70,397 megawatt-hours per year of electricity and 143,847 million Btu per year of natural gas would be consumed. Compared to the Project, the design characteristics included in Alternative 2 result in a 19 percent reduction in building-related electricity use and an 8 percent reduction in building-related natural gas use.

Table EN-6: Alternative 2 Operational Energy Use (Alternative 2)

New Land Uses	Energy Use	Units
Residential Designations		
Electricity	39,042	MWh/year
Natural Gas	112,413	MMBtu/year
Commercial + Office Zones		
Electricity	26,614	MWh/year
Natural Gas	24,186	MMBtu/year
Public/Quasi Public Zones		
Electricity	3,477	MWh/year
Natural Gas	7,249	MMBtu/year
Parking Lots/Parking Garages		
Electricity	1,264	MWh/year
Natural Gas	-	MMBtu/year
Total		
Electricity	70,397	MWh/year
Natural Gas	143,847	MMBtu/year

Notes: MWh/year = megawatt-hours per year; MMBtu/year = million British thermal units per year.
Source: Calculations by Ascent Environmental in 2019

New vehicle trips associated with Alternative 2 would result in energy use in the form of gasoline, diesel, and CNG. As shown in Table EN-7, below, implementation of Alternative 2 is estimated to result in the annual consumption of 2,813,641 gallons of gasoline, 624,456 gallons of diesel, 57,280 diesel equivalent gallons of natural gas. Compared to the Project, the design characteristics included in Alternative 2 result in a 10 percent reduction in diesel, gasoline use, and natural gas use.

Table EN-7: Alternative 2 Annual Operational Transportation Energy (Alternative 2)

Vehicle Type	Diesel (gal/year)	Gasoline (gal/year)	Natural Gas (DEG/year)	Electricity (MWh/year)
Passenger Vehicles	15,506	2,313,304	N/A	N/A
Trucks	591,618	451,998	13,795	N/A
Buses	17,332	48,339	43,485	N/A
Total	**624,456**	**2,813,641**	**57,280**	**N/A**

Notes: gal/year = gallons per year, DEG/year = diesel equivalent gallons per year, MWh/year = megawatt hours per year, N/A = not applicable

Source: Calculations by Ascent Environmental in 2019

As discussed above, Alternative 2 would include design features outlined in the Design Guidelines that would increase energy efficiency in the buildings and facilities when compared to the original Project. Alternative 2 would also include design features to reduce the Project's anticipated annual VMT and, therefore, reduce transportation-related energy demand when compared to the original Project. Alternative 2 would not result in in the wasteful, inefficient, or unnecessary consumption of energy resources during Project construction or operation. This impact would be **less than significant**.

In addition to the design features included in Alternative 2 that would reduce energy use, Mitigation Measure CC-1a would be applied to address potential contributions to global climate change and would further reduce energy use associated with Alternative 2. Mitigation Measure CC-1a would require the use of on-site GHG reduction measures identified in the GHGRP The implementation of the GHGRP includes strategies that would reduce energy use. These include participation in an enhanced transit program and use of energy efficient boilers, residential electric hot water heaters; high efficacy public outdoor lighting, and energy efficient appliances.

Table EN-8 summarizes the levels of energy consumption associated with the operation of Alternative 2 land uses and includes the energy use reductions that would be achieved through the GHGRP. Under this scenario, the Project is anticipated to result in energy consumption of an estimated 25,875 megawatt-hours per year of electricity and 126,109 million Btu per year of natural gas would be consumed. This would result in a 63 percent reduction in electricity use and 12 percent reduction in natural gas use when compared to the Project including Mitigation Measure CC-1a.

Table EN-8: Alternative 2 Operational Energy Use with Mitigation

New Land Uses	Energy Use	Units
Residential Designations		
Electricity	14,532	MWh/year
Natural Gas	98,233	MMBtu/year
Commercial + Office Zones		
Electricity	9,609	MWh/year
Natural Gas	21,640	MMBtu/year
Public/Quasi Public Zones		
Electricity	1,257	MWh/year
Natural Gas	6,236	MMBtu/year
Parking Lots/Parking Garages		
Electricity	476	MWh/year
Natural Gas	-	MMBtu/year
Total		
Electricity	25,875	MWh/year
Natural Gas	126,109	MMBtu/year

Notes: MWh/year = megawatt-hours per year; MMBtu/year = million British thermal units per year.
Source: Calculations by Ascent Environmental in 2019

Mitigation Measures

No mitigation is required.

Impact: Obstruct a State or Local Plan for Renewable Energy or Energy Efficiency

Proposed Project

Implementation of the Project would result in the development of new land uses resulting in new energy demand for electricity and natural gas. As discussed above, the Jackson Township Specific Plan document includes policies to reduce automobile use as the primary mode of transportation by providing adequate pedestrian and bicycle facilities throughout the Plan Area. Listed below are the measures included in the Jackson Township Specific Plan which would increase the transportation energy efficiency of the Project.

- The Project would be located less than 5 miles from other existing high-density commercial/job center areas and result in short vehicle trips to destinations.
- Project would provide a compact mix of land uses in close proximity to each other with a highly connected street and trail network.

- Approximately 15 percent of the total commercial square footage is dedicated to a mixed-use facility that combines residences and commercial/retail uses and would help reduce the demand for vehicle trips.
- Most residential units are within 1,320 feet (one-quarter mile) of a neighborhood park, open space, school, and/or bicycle/pedestrian trail and would help reduce the demand for vehicle trips associated with recreational activities.
- Most residential units are less than one-half mile from shopping and services and would help reduce the demand for vehicle trips.
- Project design includes locating at least four schools within the Project boundaries such that most students can walk to a local school.
- Project design includes access to high-frequency bus service that connects to the Watt/Manlove light rail station.
- Project design promotes a multi-modal system that makes public transit, walking, and bicycling viable and attractive travel choices for residents and employees.

All Project design features discussed above would help reduce building and transportation energy use associated with the implementation of the Project. These measures also align with many of the energy-related policies and implementation measures included in the 2030 General Plan. Specifically, EN-5, which encourages projects that reduce travel distances and reliance on the automobile.

In addition to the Project's consistency with local policies to remain energy efficient and use renewable energy, the Project would also remain consistent with State policies related to energy efficiency and renewable energy. As noted above, the Project would comply with the California Energy Code, which is intended to increase the energy efficiency of new development projects in the state. As noted in the Regulatory Setting section, the 2019 California Energy Code (going in to effect in on January 1, 2020) is designed to move the State closer to its zero-net energy goals and will require all new single-family homes and multi-family homes (up to three stories) to install enough renewable energy to offset all the electricity needs of each residential unit. Through the permitting process, all development projects which are constructed in the Plan Area would comply with the current and future versions of the State's Building Energy Efficiency Standards. As discussed in detail in the Regulatory Setting, SMUD, as an electricity utility, is required to comply with the State's Renewable Portfolio Standard. Because electricity utilities in the state are required to increase the percentage of renewable energy sources in the electricity they provide, over time electricity consumed as part of the Project will increasingly be provided by renewable sources. With the inclusion of energy efficiency and renewable energy measures in the Project and compliance with State regulations related energy efficiency and renewable energy, the Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. This impact would be **less than significant**.

As discussed above, Mitigation Measure CC-1a would be applied and would further increase the energy efficiency of the Project. Mitigation Measure CC-1a include a set of measures that incorporate renewable energy resources and energy efficiency strategies

into the Project design. Listed below are the specific renewable energy and energy efficiency measure that will be included in the Project.

- Energy efficient boilers would be used as applicable in high-density housing (mid-rise apartments), discount club, office, high school, and supermarket land uses.
- Low flow bathroom, kitchen, showers, and toilets would be included in all residential units and commercial buildings.
- The Project would include water-efficient irrigation systems and water efficient landscaping for the non-residential land uses
- The Project would include the installation of residential electric hot water heaters.

Additionally, Mitigation Measure CC-1a includes measures that would result in reductions in VMT associated with the Project and would also result in a reduction in transportation energy use. These measures include:

- The Project Applicant would provide residents and employees of Jackson Township with transit passes that would access the entire Regional Transit system.
- All low density and medium density will be pre-wired for home electric charging stations so that residents can easily install an electric charger for their electric vehicle.
- Electric charging stations will be installed at up to 10 percent of the Jackson Township parking spaces at commercial, retail, and office parking lots and up to 5 percent at school parking lots.

ALTERNATIVE 2

Alternative 2 would modify the wetland preserve on the eastern boundary of the Plan Area, which would reduce building and transportation-related energy use compared to the Project. Additionally, similar to the discussion above in the Project analysis, this alternative would comply with the California Energy Code and SMUD would comply the State's Renewable Portfolio Standard. As a result, the Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. This impact under Alternatives 2 would be **less than significant**.

As discussed above, Mitigation Measure CC-1a would be applied and would further increase the energy efficiency of Alternative 2. Mitigation Measure CC-1a includes a set of measures that incorporate renewable energy resources and energy efficiency strategies into the Project design. Listed below are the specific renewable energy and energy efficiency measure that would be included in the Project.

- Energy efficient boilers would be used as applicable in high-density housing (mid-rise apartments), discount club, office, high school, and supermarket land uses.
- Low flow bathroom, kitchen, showers, and toilets would be included in all residential units and commercial buildings.
- The Project would include water-efficient irrigation systems and water efficient landscaping for the non-residential land uses
- The Project would include the installation of residential electric hot water heaters.

Additionally, Mitigation Measure CC-1a includes measures that would result in reductions in VMT associated with the Project and would also result in a reduction in transportation energy use. These measures include:

- The Project Applicant would provide residents and employees of Jackson Township with transit passes that would access the entire Regional Transit system.
- All low density and medium density will be pre-wired for home electric charging stations so that residents can easily install an electric charger for their electric vehicle.
- Electric charging stations will be installed at up to 10 percent of the Jackson Township parking spaces at commercial, retail, and office parking lots and up to 5 percent at school parking lots.

Mitigation Measures

No mitigation is required.

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12 GEOLOGY, SOILS, AND MINERAL RESOURCES

INTRODUCTION

This chapter describes the geologic and soil setting within the Plan Area and vicinity, including descriptions of potential geologic hazards and the presence of mineral resources. Paleontological resources are also addressed. The impacts and analysis section of this chapter evaluates the effects of the Project and Alternative 2 on geologic and soil resources, as well as the effects of geologic and soil hazards on future development of the Project. No comments regarding geology, soils, or mineral resources were received in response to the Notice of Preparation.

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.

A "geomorphic province" is composed of an area of similar geologic origin and erosional/depositional history. Sacramento County is situated in portions of two geomorphic provinces. By far the largest portion of the County lies in the Great Valley province. A small area in the eastern part of the County is in the Sierra Nevada province. The Great Valley province is further divided into four geomorphic subunits; the Plan Area is within the Alluvial Plain geomorphic subunit, as described below:

> Alluvial Plain - To the east of the Sacramento River floodplain 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.

SEISMIC HAZARDS

FAULTS IN THE VICINITY

Active faults are largely considered those that have had movement within the last 11,000 years (within the Holocene or Historic time periods) and indicates that no major active faults transect the County. There is one known subsurface inactive fault in northern Sacramento County, called the Willows Fault, which is in the vicinity of Citrus

Heights near Antelope Road and is presumably inactive, with its last activity occurring 1.6 million years ago or longer.

In addition to the Willows Fault, there are several subsurface inactive faults in the Delta. The Midland fault extends north from Bethel Island in the Delta to east of Lake Berryessa. Studies done on this fault suggest that activity may have occurred during the Pliestocene age and potentially even the Holocene age (10,000 to 200 years old); however, according to the California Geological Survey (CGS), Holocene activity is unconfirmed. This fault has been identified to be a pre-Quaternary fault (active 1.6 million years ago or longer). Another unnamed Delta fault is located further west of the Midland Fault. It is concealed where it passes beneath the westernmost tip of Sacramento County, and may have been active within the past 11,000 years although, again, exact times of displacement are unknown. Oil and gas companies exploring the Delta area's energy potential have identified several subsurface faults, none of which show any recent surface rupture.

The Bear Mountain fault zone, which is associated with the Foothills Fault system, located east of Sacramento County and trends northwest-southeast through Amador and El Dorado Counties. The portion of this fault zone closest to the county was last active at least. 1.6 million years ago. According to CGS, faults in the Foothills Fault system are largely characterized by very slow slip rates (generally less than 0.01 millimeter per year) and seismic events occur in infrequent intervals.

POTENTIAL FOR SEISMIC ACTIVITY

The intensity of ground shaking and its potential impact on structures is determined by the physical characteristics of the underlying soil and rock, building materials and workmanship; earthquake magnitude; location of the epicenter; and the character and duration of ground motion. Much of the county is located on alluvium, which increases the amplitude of earthquake waves. Ground motion lasts longer and waves are amplified on loose, water-saturated materials as compared with solid rock. As a result, structures located on alluvium typically suffer greater damage than those located on solid rock.

While Sacramento County has experienced relatively little seismic activity, faulting in neighboring regions, especially the San Francisco Bay area and the Sierra Nevada, suggests that the county could be affected by future ground motion originating elsewhere.

The 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 the county in a relatively low intensity groundshaking zone, while the westernmost portion of the county is in a relatively moderate groundshaking zone (see Plate GS-1). The county, including the Plan Area, is located in an area which is noted to have some of the lowest groundshaking potential in the State.

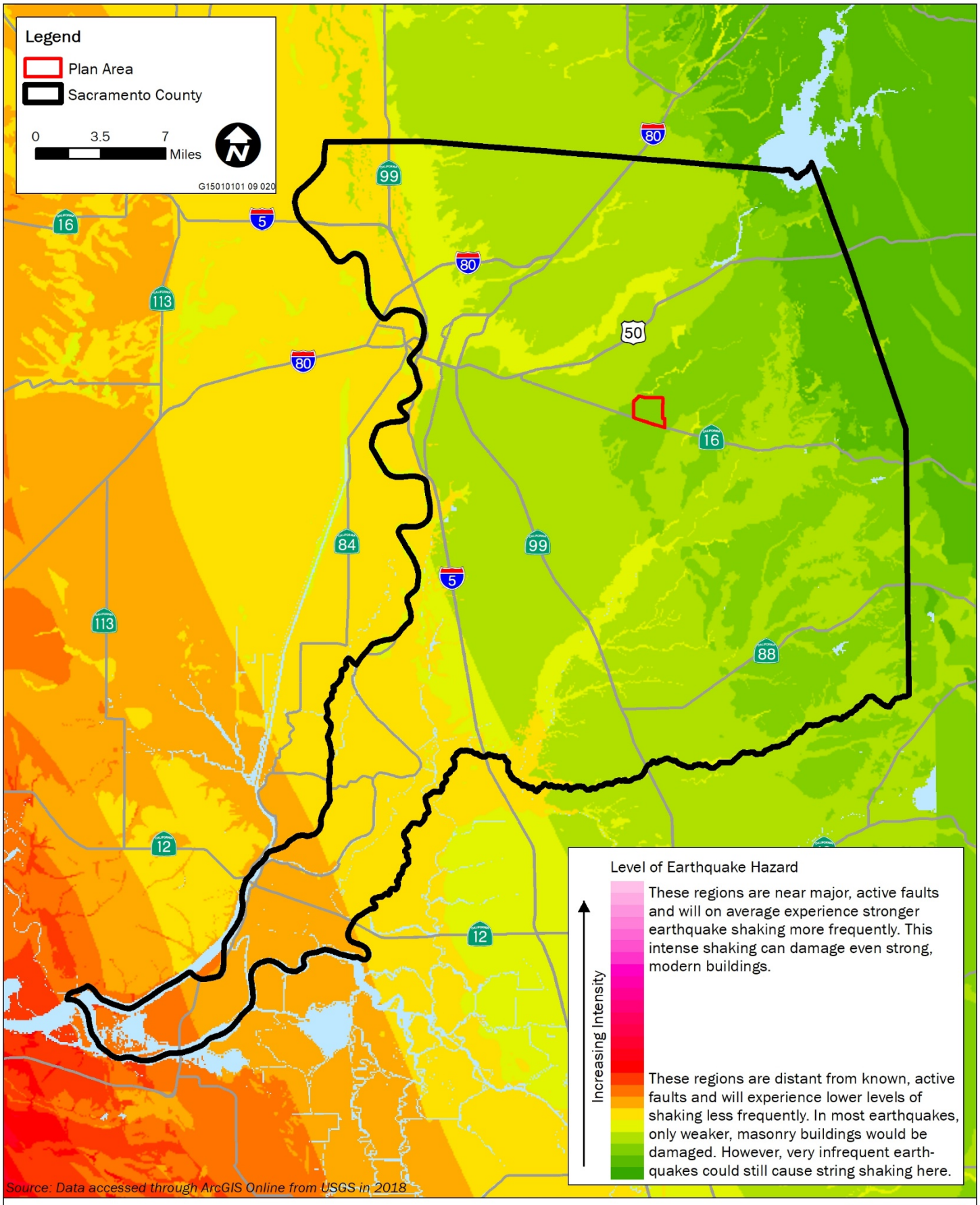


Plate GS-1: Earthquake Shaking Potential for Sacramento County

ASCENT ENVIRONMENTAL

LIQUEFACTION

Liquefaction is a process whereby the strength and stiffness of a soil is reduced by earthquake shaking or rapid cyclic loading. Sacramento County has two areas that have been suggested as posing potential liquefaction problems - the downtown Sacramento area and the Delta. The Plan Area is not located within or near the Delta, downtown Sacramento, or near any levees.

SOILS AND SOIL HAZARDS

SOIL TYPES

Different types of soil have different characteristics and may be subject to different soil hazards. The soils of Sacramento County can be separated into three general classifications based on geographic factors: Delta soils, flood basin soils, and bench soils. The Plan Area is located within a portion of the county generally underlain by bench soils. Bench soils, elevated above the spreading basins, are river terraces. Due to erosion and leaching, these soils lack the high percentage of organic material found in the Delta and flood basin soils.

GENERAL SOIL MAP UNITS

Soils in Sacramento County can also be divided into eight broad landscape classifications, or groups, which are further divided into 16 soil associations. These soil associations are landscapes that have distinctive patterns of soils, relief, and drainage. The Plan Area is located entirely within the Redding-Corning Red Bluff soil association.

The Redding-Corning-Red Bluff unit is on intermediate and high terraces, terrace remnants, and the side slopes of terraces in the eastern part of the county. They are moderately well-drained soils that are moderately deep over a cemented hardpan, and well-drained and moderately well-drained soils that are very deep.

DETAILED SOIL MAP UNITS

Soil types can also be further classified into detailed soil map units, which can be used more specifically to determine the suitability and development potential of specific uses within a soil unit. For example, some soil units may have more potential for erosion or expansion, which may affect what types of land uses or structures are appropriate within that area. Each soil map unit is given a number, as shown in Plate GS-2 and Table GS-1. The Plan Area contains eight specific soil units and areas of water. A brief description, as described in the *Soil Survey of Sacramento County, California* (USDA 1993) of each soil unit present within the Plan Area is provided bellow.

157: HEDGE LOAM, 0 TO 2 PERCENT SLOPES

This soil unit is moderately deep, moderately well drained and is found in low areas on low terraces commonly adjacent to drainageways, on flood plains, and on low stream terraces. Hardpans are found at a depth of 10 to 20 inches. Permeability is moderately slow and available water capacity is low or moderate. Runoff is slow and the hazard of water erosion is slight. This unit has a low to moderate shrink-swell potential. The Plan Area contains a very small amount of this soil type right along Excelsior Road in the northwest corner of the site.

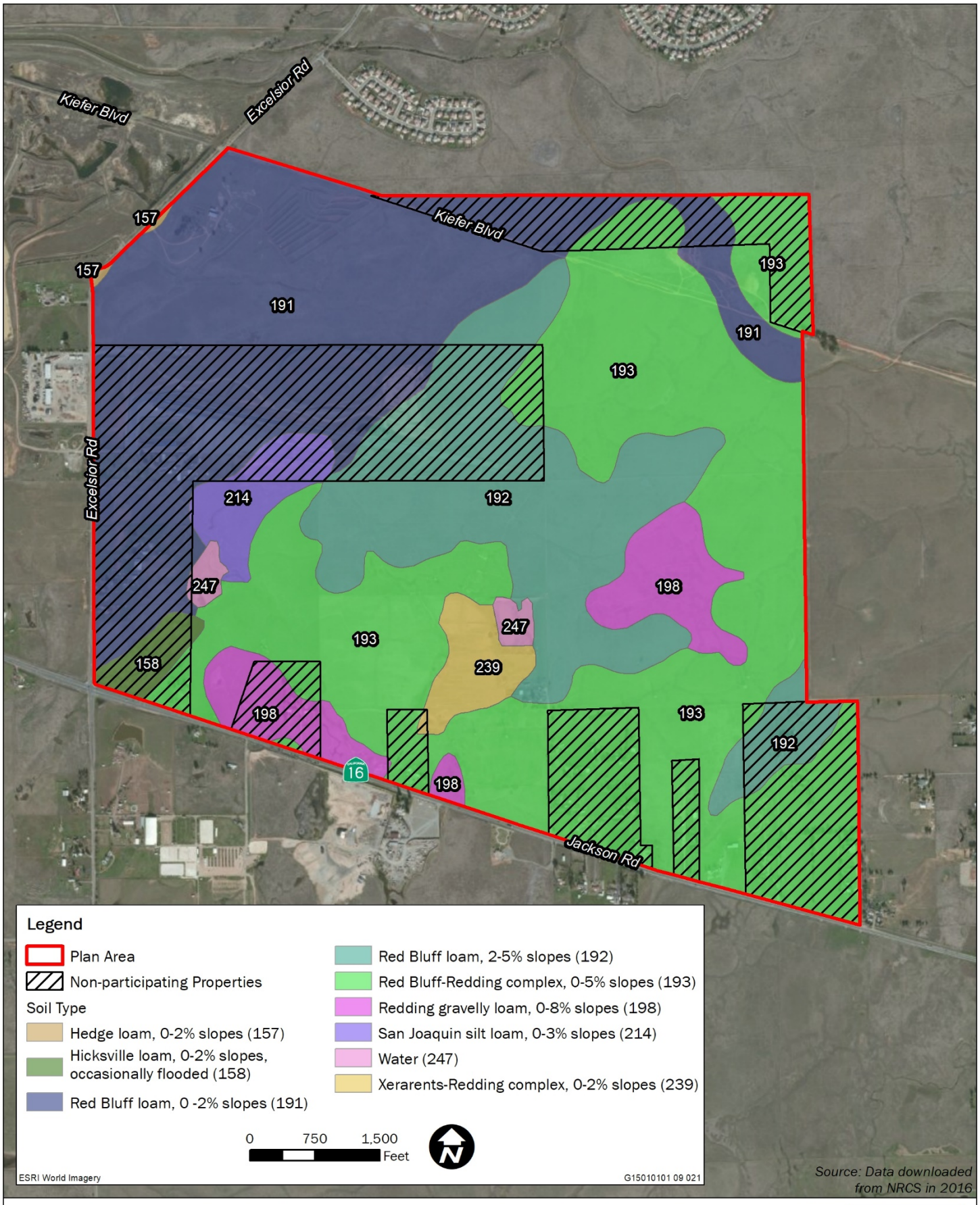


Plate GS-2: Soils in the Plan Area

ASCENT ENVIRONMENTAL

Table GS-1: Plan Area Soil Types

Map Unit Symbol	Map Unit Name	Acres in Plan Area	Percent of Plan Area
157	Hedge loam, 0 to 2 percent slopes	1.9	0.1%
158	Hicksville loam, 0 to 2 percent slopes, occasionally flooded	14.7	1.1%
191	Red Bluff loam, 0 to 2 percent slopes	394.7	29.3%
192	Red Bluff loam, 2 to 5 percent slopes	244.6	18.1%
193	Red Bluff-Redding complex, 0 to 5 percent slopes	552.1	40.9%
198	Redding gravelly loam, 0 to 8 percent slopes	73.6	5.5%
214	San Joaquin silt loam, 0 to 3 percent slopes	30.3	2.2%
239	Xerarents-Redding complex, 0 to 2 percent slopes	26.6	2.0%
247	Water	10.3	0.8%
Totals for Plan Area		**1,348.8**	**100.00%**

Source: Natural Resources Conservation Service, Web Soil Survey, National Cooperative Soil Survey. April 28, 2016.

158: Hicksville Loam, 0 to 2 Percent Slopes

This soil unit consists of very deep, moderately well drained soils on low stream terraces, and alluvial flats along drainageways on high terraces and hills. Permeability is moderately slow and the available water capacity is very high. Runoff is slow and the hazard of water erosion is slight. This unit has a low to moderate shrink-swell potential. A small area of this soil type is located along Elder Creek in the southwest corner of the Plan Area.

191: Red Bluff Loam, 0 to 2 Percent Slopes

This unit is very deep and well drained and is located on intermediate terraces. Permeability is moderately slow and available water capacity is high. Runoff is slow and the hazard of water erosion is slight. This unit has a low to moderate shrink-swell potential. This soil type is generally located in the northwest portion of the Plan Area, as well as along the segment of Morrison Creek that flows through the northeast corner of the Plan Area. It should be noted that although this soil type is located in the northwest corner of the Plan Area, this area contains a large hill with some slopes that may exceed a 5 percent grade.

192: Red Bluff Loam, 2 to 5 Percent Slopes

This unit is very deep and well drained and is located on high terraces. Permeability is moderately slow and the available water capacity is high. Runoff is slow or medium and the hazard of water erosion is slight or moderate. This unit has a low to moderate shrink-swell potential. This soil type is present primarily in the center of the Plan Area.

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. Red Bluff soil is very deep and well drained, with moderately slow permeability and high available water capacity. Redding soil is moderately deep and moderately well drained. Permeability is very slow and available water capacity is low in this soil. Runoff is very slow or slow and the hazard of water erosion is slight. This unit complex has a low to high shrink-swell potential. This soil type is present primarily in the southwest portion of the Plan Area, although another area exists within the northeast corner of the Plan Area as well.

198: Redding Gravelly Loam, 0 to 8 Percent Slopes

This unit is moderately deep and moderately well drained and located on high terraces and terrace remnants. Permeability is very slow, so water can remain perched above the claypan for short periods following heavy rainfall. Available water capacity is low. Runoff is very slow or medium and the hazard of water erosion is slight or moderate. This unit has a low to high shrink-swell potential. This soil type is located in a few areas in the southern and eastern portions of the Plan Area.

214: San Joaquin Silt Loam, 0 to 3 Percent Slopes

This unit is moderately deep and moderately well drained and is found on low terraces. Permeability is very slow, so water can perch above the claypan for short periods after rainfall. The available water capacity is low. Runoff is slow and the hazard of water erosion is slight. This unit has a low to high shrink-swell potential. This soil type is present in the western portion of the Plan Area.

239: Xerarents-Redding Complex, 0 to 2 Percent Slopes

This unit is approximately 45 percent Xerarents soil and 40 percent Redding soil. It is located on high terraces. The Xerarents soils are moderately deep to very deep, well drained, and altered. Permeability is moderate to very slow in Xerarents soils and available water capacity is moderate or high. Runoff is very slow and the hazard of water erosion is slight. The Redding soils are moderately deep and moderately well drained. Permeability is very slow in Redding soils, so water can perch above the claypan for short periods following heavy rainfall. Runoff is slow, the hazard of water erosion is slight, and the shrink-swell potential is high. This soil type is in the south-central portion of the Plan Area.

Soil Hazards

Different types of soil have different characteristics, and some may be more suitable for development than others. Based on these characteristics, some soil types may be more prone to certain soil hazards, such as 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: 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.

EXPANSIVE SOILS

Expansive soils represent approximately one third of all soil types in Sacramento County. These soils are largely composed of clays, which greatly increase in volume when water is absorbed and shrink when dried. 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.

The southern and western portions of the Plan Area are generally characterized by soils with the capacity for high shrink-swell potential, which indicates expansive properties (soil units 193, 198, 214, and 239 depicted on Plate GS-2).

LANDSLIDES

Landslide is a general term used for a falling mass of soil and rock. The topography of the Plan Area and vicinity is relatively flat, and there are no major slopes, so the potential for landslide risk would be very low.

SOIL 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. While natural erosion of undisturbed areas occurs in Sacramento County, it does not appear to pose a significant hazard to property. The principal area of erosion in the county is along portions of the American River bluffs. Most of the soil types within the 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 can cause serious health problems including lung disease and cancer if inhaled into the lungs.

Because it occurs naturally, asbestos may be released to the atmosphere due to 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 (SMAQMD)

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. Asbestos is not anticipated within, or in the vicinity of, the Plan Area.

Mineral Resources

Mineral resources in Sacramento County include sand, gravel, clay, gold, silver, peat, topsoil, lignite, natural gas, and petroleum. The principal resources 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.

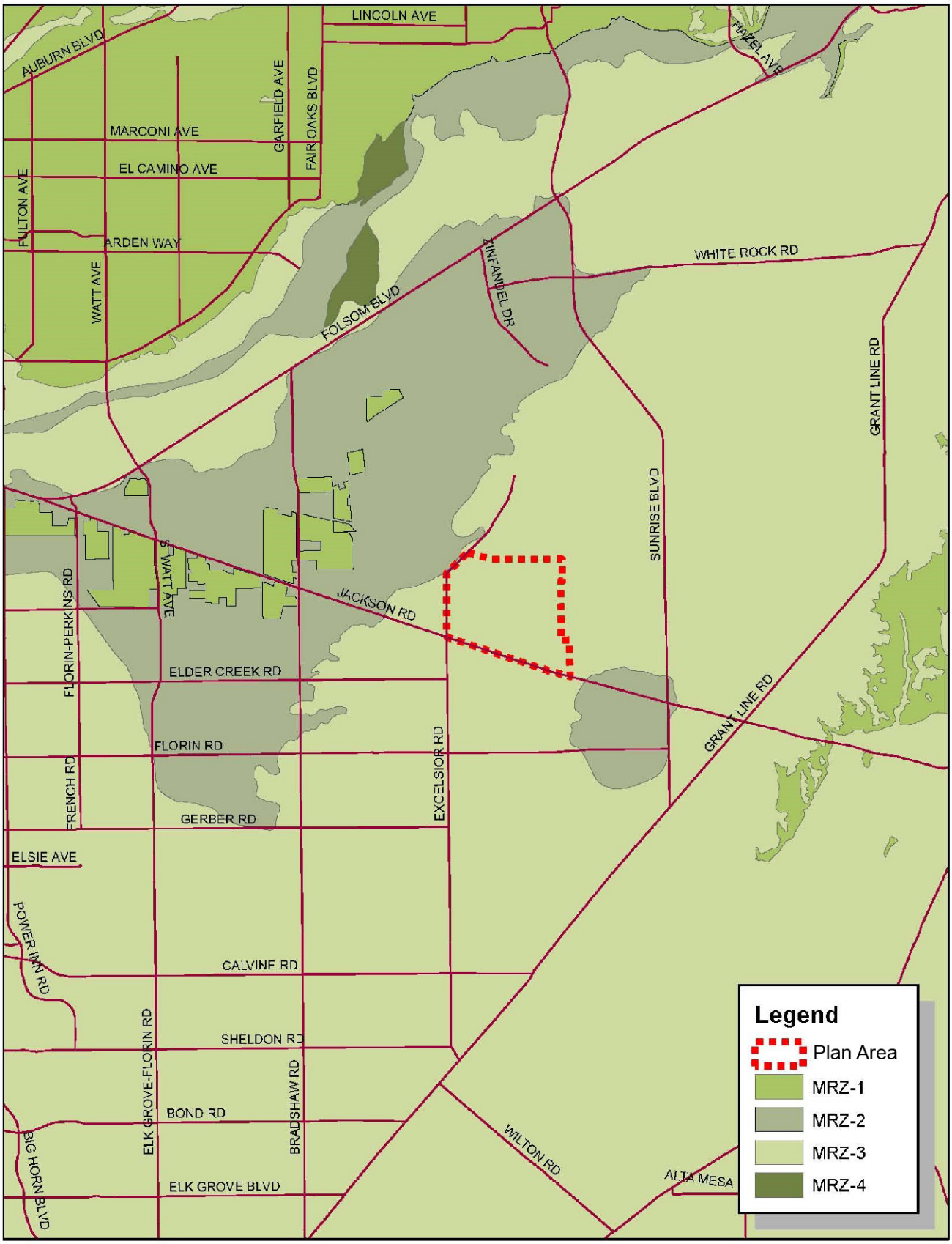
The Surface Mining and Reclamation Act of 1975 requires the State Geologist to classify land into Mineral Resource Zones (MRZ) based on the known or inferred mineral resource potential of that land. MRZs are divided into six categories. As shown in Plate GS-3, the Plan Area is located within MRZ-3 zone, which is defined as follows:

MRZ-3a: Areas containing known mineral occurrences of undetermined mineral resource significance. Further exploration work within these areas could result in the reclassification of specific localities into MRZ-2a or MRZ-2b categories. MRZ-3 is divided on the basis of knowledge of economic characteristics of the resource.

MRZ-3b: Areas containing inferred mineral occurrences of undetermined mineral resource significance. Land classified MRZ-3b represents areas in geologic settings that appear to be favorable environments for the occurrence of specific mineral deposits. Further exploration work could result in the reclassification of all or part of these areas into the MRZ-2a or MRZ-2b categories.

In addition to MRZ classifications, the State also designates Aggregate Resource Areas (ARA) for the County to utilize for land use planning and conservation (see Plate GS-4). As shown, the Plan Area is not located within one of these ARAs, but it is located adjacent to ARA-18.

The Plan Area is not located within an area classified as containing mineral resources or within an ARA. However, active aggregate mining activities are located within the vicinity of the Plan Area, including the area just west of Excelsior Road, directly adjacent to the Plan Area.

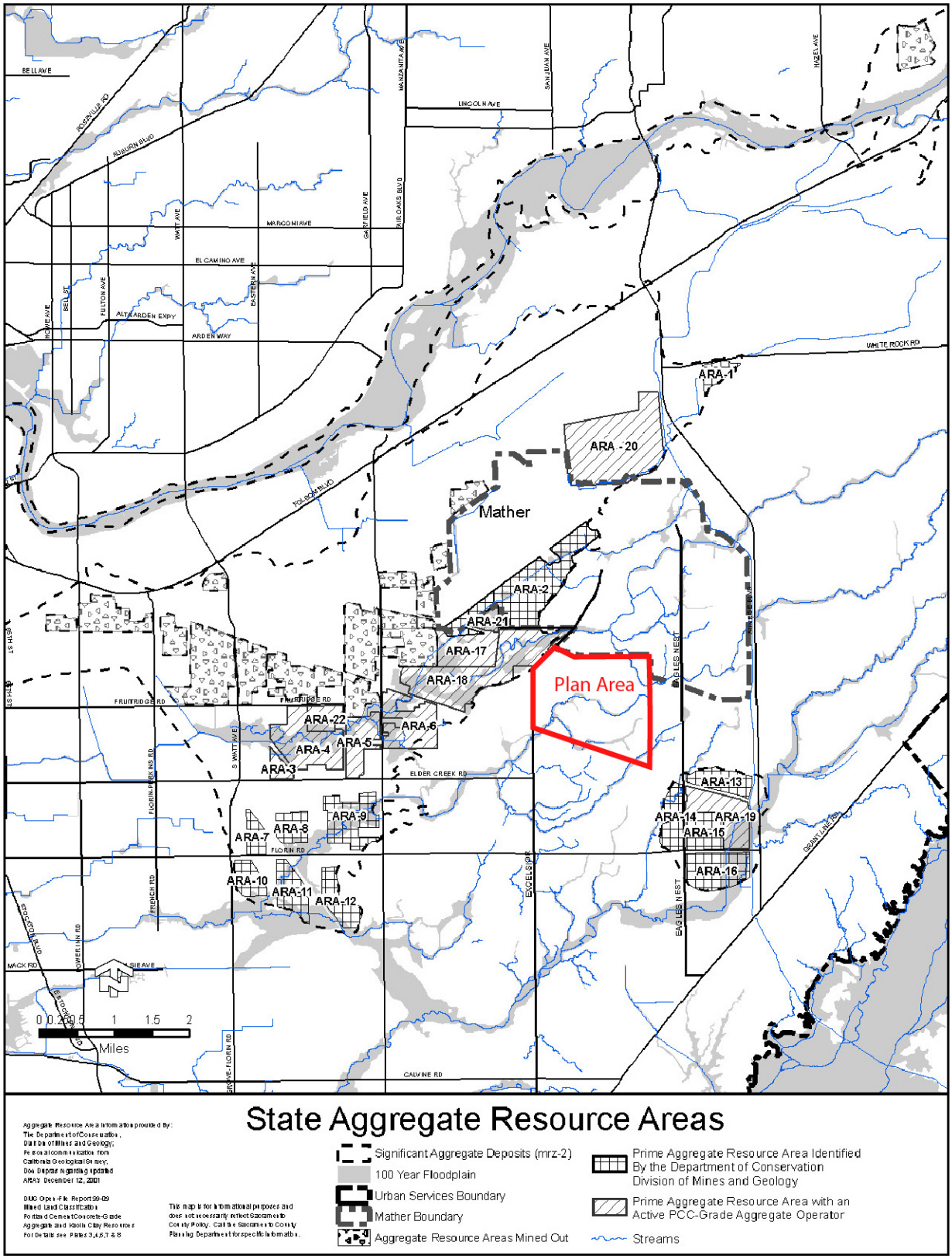


Source: Prepared by Sacramento County in 2018

X15010101_09_011

Plate GS-3: Plan Area and Sacramento County MRZ Zones

ASCENT ENVIRONMENTAL



Source: Figure 2, Conservation Element, Sacramento County General Plan of 2005-2030.

X15010101_09_012

Plate GS-4: Aggregate Resource Areas Map

Paleontological Resources Background

Paleontological resources are the remains 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 Plan Area is in an area mapped as Arroyo Seco Formation, which is a late Pliocene or early Pleistocene formation consisting of predominately metamorphic gravels and granite sand matrix (Shlemon 1967). This is a Pleistocene Riverbank-age channel of the lower American River. The Riverbank channels are an estimated 150,000 to 250,000 years old. The Riverbank-age channels have been a source of both gold and gravel. In the past, the gravel quarries in the area have exposed both vertebrate fossils and fossil redwood, sycamore, and willow logs (Shlemon 1995).

Regulatory Setting

Federal

Uniform Building Code

Development within the State of California is required to at least adhere to the provisions of the Uniform Building Code (UBC). The UBC sets forth minimum standards related to development, seismic design, building siting and grading. Local jurisdictions typically adopt standards that are as stringent, if not more stringent than those of the UBC. California has adopted the UBC but has amended it to better meet the need of the specific conditions of California.

National Pollutant Discharge Elimination System Permit and Waste Discharge Requirements for Construction

The National Pollutant Discharge Elimination System (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 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 post-construction permanent BMPs that would 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

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 (California Geological Survey 2019).

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 stricter. The code adopts all the standards associated with seismic engineering detailed in the Uniform Building Code of 1997. 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.

Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations

The California Air Resources Board has adopted an Asbestos Airborne Toxic Control Measure (ATCM) for Construction, Grading, Quarrying, and Surface Mining Operations (17 CCR 93105). SMAQMD has mapped areas of serpentine and ultramafic rock in eastern Sacramento County and determined that these areas are subject to the ATCM (SMAQMD 2006). The Plan Area is not in the portion of the County subject to the ATCM.

Local

Land Grading and Erosion Control

The Sacramento County Land Grading and Erosion Control Ordinance (Sacramento County Code Ch. 16.44) 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 2030 General Plan

The following 2030 General Plan policies pertaining to geology and soils are applicable to the Project.

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-162. Projects located within areas known to be sensitive for paleontological resources, should be monitored to ensure proper treatment of resources and to ensure crews follow proper reporting, safeguards and procedures.

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. I've also attached that letter.

Community Plans

Cordova Community Plan

The Cordova Community Plan does not include policies or implementation actions that pertain to the analysis of geology, soils, or mineral resources.

VINEYARD COMMUNITY PLAN

The Vineyard Community Plan, which was developed in 1985, provides guidance for growth and development in the community planning area.

NER 7. Continue to utilize the Surface Mining Combining Zone for the preservation of aggregate resources and for the protection of area residents through mitigation provisions contained within that zone.

IMPACTS AND ANALYSIS

SIGNIFICANCE CRITERIA

Based on the CEQA Guidelines, impacts to geology, soils, and seismic areas of concern would be significant if a Project would:

1. Directly or indirectly cause potentially substantial adverse effects, including the risk of loss, injury, or death involving:
    - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist of the area or based on other substantial evidence of a known fault
    - Strong seismic ground shaking
    - Seismic-related ground failure, including liquefaction
    - Landslides
    - 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. Be located on expansive soil as defined in Table 18-1-B of the Uniform Building Code, creating substantial direct or indirect risks to life or property.
5. Result in the loss of availability of, including obstruction of access to or removal of, mineral resources. In particular for aggregate resources, removal or disruption of mineral resources delineated on a local general plan, specific plan, or other land use plan.
6. Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water.
7. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

Issues Not Discussed Further

There are no known earthquake faults located within the Plan Area, or in the vicinity, so there would be no risk of fault rupture. In addition, Sacramento County is in one of the areas least prone to earthquake shaking potential, as depicted in Plate GS-1. Further, compliance with the Uniform Building Code would ensure that buildings are built to withstand minor groundshaking. Though there is topographical variation on the site, there are no major bluffs or other features that would make the Project susceptible to damage related to landslides. Based on the existing regulatory framework that governs new development within Sacramento County, which addresses safety issues and requires that development adhere to the CBC and other relevant policies, regulations, and design standards related to seismic activity, seismically induced groundshaking effects are not expected to be substantial hazards.

The Plan Area is not located in or near an area with naturally occurring asbestos. The Proposed Project would not exacerbate any risk of exposure by people or structures to adverse effects related to fault rupture, strong seismic ground-shaking, landslides, or naturally occurring asbestos.

None of the soils present on the site, as described in *The Soil Survey of Sacramento County, California,* are listed as unstable, so no impacts related to unstable soils (e.g., landslide, lateral spreading, subsidence, liquefaction, or collapse) would occur.

The Project would connect to a public sewer system, so there would be no impact involving septic systems. Additionally, the Project would not result in a reduction in the availability of (i.e., access to or removal of) any mineral resource, because none exist within the proposed Plan Area. Implementation of the Project would not obstruct access to adjacent mineral resources because the nearest mineral (aggregate) resource to the Plan Area is on the opposite side of Excelsior Road.

None of the above issues will be discussed further in this section.

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 proposed Project. The Project was analyzed in terms of its potential to exacerbate geologic or soils-related hazards to people and property in the Plan Area.

Impact: Soil Erosion, Siltation, or Loss of Topsoil

Proposed Project

Erosion is a natural process that occurs when wind and water reshape or wear down landforms and the eroded materials are deposited in another location. The erosion of soil can be accelerated when existing groundcover is removed from the surface of the ground such as during grading or clearing activities that expose underlying soil to erosional forces. The most likely potential for erosion to occur is as a result of construction activity where soils may be exposed. All but two of the soil types located within the Plan Area have a slight potential for erosion. The Red Bluff loam, 2 to 5

percent slopes and Redding gravelly loam, 0 to 8 percent slopes soil types both have a slight to moderate potential for erosion.

The Project would 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.

The Project would also comply with the NPDES General Construction Permit, which requires that any construction activity affecting 1 acre or more implement a SWPPP, which identifies BMPs to reduce construction effects on receiving water quality. The BMPs include sediment and erosion control measures and other measures to control potential chemical contaminants. Also refer to Chapter 16, “Hydrology and Water Quality.”

In compliance with these regulations, any development related to the Project would be subject to erosion and sediment control measures. As such, the Project would not result in substantial soil erosion or the loss of topsoil. Impacts to soil resources would be **less than significant**.

Alternative 2

Alternative 2 would result is slightly less potential for erosion because there would be less ground disturbance due to an increase in the area set aside as wetland preserve. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact: Exacerbation of Exposure to Hazards Associated with Expansive Soils

Proposed Project

All soil types present within the Plan Area have some potential for expansion. The Red Bluff-Redding complex, 0 to 5 percent slopes; Redding gravelly loam, 0 to 8 percent slopes; and San Joaquin silt loam, 0 to 3 percent slopes soil types all have a low to high shrink-swell potential. The Xerarents-Redding complex, 0 to 2 percent slopes soil type has a high shrink-swell potential.

Development related to the Project may result in the addition of new structures and roadways located in areas containing expansive soils that could cause structural damage to both foundations and roads. To address this, the construction permitting process within Sacramento County requires completed geotechnical reports for development 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 measures to eliminate the hazardous soil

conditions. Measures related to eliminating potential hazards of expansive soils can include the excavation of silts and clays to a suitable depth, 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. Implementation of these measures effectively removes expansive soils from an area or ensures that any expansion and contraction under the foundation is evenly distributed. In addition, structural design of any development in the Plan Area must conform to the criteria detailed in the UBC and CBC (Chapters 16, 18, 33 and the Appendix to Chapter 33).

Any Project-related development would need to adhere to the existing UBC and CBC, which would ensure the maximum necessary protection available for development within areas known to contain expansive soils. Therefore, implementation of the Project would not exacerbate any risk to life or property form impacts related to expansive soils; this impact would be **less than significant**.

Alternative 2

The wetland preserve would be expanded under Alternative 2, and there would be slightly less development. As discussed above, any development would need to adhere to the existing UBC and CBC, which would ensure the maximum necessary protection available for development within areas known to contain expansive soils. Impacts associated with expansive soils would remain **less than significant**.

Mitigation Measures

No mitigation is required.

Impact: Potential Destruction of Buried Paleontological Resources

Proposed Project

Construction of the 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 Riverbank Formation, which underlies the Plan Area, is considered to have paleontological sensitivity, 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, impacts would be reduced to **less than significant with mitigation** because construction workers and operational personnel would be alerted to the possibility of encountering paleontological resources and professionally accepted and legally compliant procedures for the discovery of paleontological resources would be implemented in the event of a find.

ALTERNATIVE 2

Although the wetland preserve would be expanded under Alternative 2, and there would be slightly less development and associated ground disturbance, this alternative includes substantial areas of excavation and development. With Implementation of Alternative 2, impacts would be **potentially significant**. With the implementation of the Mitigation Measure GS-1, impacts would be reduced to **less than significant with mitigation** because construction workers and operational personnel would be alerted to the possibility of encountering paleontological resources and professionally accepted and legally compliant procedures for the discovery of paleontological resources would be implemented in the event of a find.

MITIGATION MEASURES

GS-1. The Project Applicant shall retain a qualified paleontologist to conduct an on-site training that will alert all construction personnel and operational staff about the possibility of encountering fossils. The appearance and types of fossils likely to be seen during construction will be described. Construction personnel shall be trained about the proper notification procedures should fossils be encountered.

If paleontological resources are discovered during earthmoving activities, the Project Applicant shall immediately halt operations within 100 feet of the find and notify the Environmental Coordinator. The Project Applicant shall retain a qualified paleontologist for identification and salvage of fossils so that construction delays can be minimized. If large specimens are discovered, the paleontologist shall have the authority to halt or divert grading and construction equipment while the finds are removed. The paleontologist shall be responsible for implementing all tasks summarized below:

- In the event of discovery, salvage of unearthed fossil remains, typically involving simple excavation of the exposed specimen but possibly also plaster-jacketing of large and/or fragile specimens, or more elaborate quarry excavations of richly fossiliferous deposits.
- Recovery of stratigraphic and geologic data to provide a context for the recovered fossil remains, typically including description of lithologies of fossil-bearing strata, measurement and description of the overall stratigraphic section, and photographic documentation of the geologic setting.
- Laboratory preparation (cleaning and repair) of collected fossil remains to a point of curation, generally involving removal of enclosing rock material, stabilization of fragile specimens (using glues and other hardeners), and repair of broken specimens.
- Cataloging and identification of prepared fossil remains, typically involving scientific identification of specimens, inventory of specimens, assignment of catalog numbers, and entry of data into an inventory database.
- Preparation of a final report summarizing the field and laboratory methods used, the stratigraphic units inspected, the types of fossils recovered, and the significance of the curated collection.

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13 HAZARDOUS MATERIALS

INTRODUCTION

This chapter describes the potential for existing hazards in the Plan Area and provides an evaluation of the Project's and Alternative 2's potential to create a significant hazard for the public or the environment, conflict with emergency response plans, or expose people to wildland fires. The analysis addresses the effects that development of the Project or Alternative 2 would have related to hazardous substances and conditions in proximity to the Plan Area. The term "hazardous substances," as used herein, refers to both hazardous materials and hazardous wastes. Sacramento County uses the definition of "hazardous materials" from the California Health and Safety Code, Division 20, Chapter 6.95, Section 25501, which states:

> "Hazardous material" means a 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 wastes, and any material that a handler or the unified program agency (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."

This definition is not limited to just those chemicals with long-term detrimental effects. It also includes materials that present a hazard because of their physical nature (i.e., those that are explosive, corrosive, or flammable).

The County received one response to the Notice of Preparation that expressed concern about the potential for existing soil contamination at the Sacramento Raceway. This facility is discussed further below.

ENVIRONMENTAL SETTING

The Plan Area is mostly vacant, undeveloped land; however, there are some single-family agricultural residences, located mainly along Excelsior Road, Jackson Road (also referred to as Jackson Highway), and Tree View Lane (to be renamed Grenville Road); the Sacramento Raceway, on the west side of the Plan Area; and an abandoned koi farm, in the northwestern portion of the Plan Area. Portions of the Plan Area are currently in agricultural production, including irrigated pasture land and grazing, and farming of strawberries and other crops.

The land uses surrounding the Plan Area consist primarily of agricultural and agricultural-residential uses. Mather Airport is located northwest of the Plan Area, and the area just north of the Plan Area was formerly part of the former Mather Air Force Base. Other surrounding areas include land uses similar to those found within the Plan Area itself, including farming, grazing, agricultural residential, and wetland preserves.

East of the Plan Area are also a cemetery and a pet cemetery; to the south, there is an equestrian center and aggregate quarries; and to the west, there is a commercial rock and garden center and more aggregate quarries. Groundwater in the Plan Area generally flows from the northeast to the southwest.

Plan Area Hazards

The following descriptions of known and potential hazards within, and in proximity to, the Plan Area are informed by a Phase I Environmental Site Assessment (ESA) prepared in 2013 by BSK Associates. The American Society for Testing and Materials developed the widely accepted practice standards for Phase I ESAs (E-1527-05), which address the potential for documented and undocumented hazards on a site. Phase I ESAs include an on-site visit to determine current conditions; an evaluation of possible risks posed by neighboring properties; interviews with persons knowledgeable about the site's history; an examination of local planning files to check prior land uses and permits granted; file searches with appropriate agencies having oversight authority relative to water quality and/or soil contamination; examination of historic aerial photography of the site and adjacent properties; a review of current topographic maps to determine drainage patterns; and an examination of chain-of-title for environmental lines and/or activity and land use limitations. Phase I ESAs can also be used to identify the potential for presence of hazardous building materials in situations where older structures intended for demolition could contain lead-based paint, asbestos containing materials, mercury, or polychlorinated biphenyls. If a Phase I ESA indicates the presence, or potential presence of contamination, a site-specific Phase II ESA is generally conducted to test soil and/or groundwater. Based on the outcome of a Phase II ESA, remediation of contaminated sites under federal and State regulations may be required prior to development. The Phase I ESA of the Plan Area is presented in Appendix HM-1 of this EIR and the results are summarized below.

Rural Agricultural Residential Uses

The Plan Area includes several agricultural residential properties, which can contain hazardous materials due to the presence of septic systems, groundwater wells, underground storage tanks, and the presence of chemicals used in agricultural practices. Septic systems can adversely affect soil and groundwater in an area if not properly maintained or abandoned once a property connects to public sewer. Underground storage tanks used to store diesel, fuels, or other chemicals could be hazardous if they leak into the soil or groundwater. The Sacramento County Environmental Management Department (EMD) oversees the permitting of both septic systems and underground storage tanks. However, in some cases (e.g., when the tanks pre-date EMD records and have been abandoned), they can be discovered during site disturbing activities associated with future development. There are no known hazards associated with onsite septic systems or underground storage tanks within the Plan Area (BSK 2013).

The Phase I ESA also noted the presence of debris piles on three parcels located north of Kiefer Boulevard in 2013 during site reconnaissance. Some of these piles are first apparent in aerial photographs from 1981. There is no information on the content of these features, and they may contain hazardous materials. Since it has been several years since these debris piles were observed, it is possible that they may no longer be present.

In addition, agricultural operations are known to use chemicals, including pesticides and herbicides, some of which can cause soil and groundwater contamination if used improperly. Agricultural chemicals used before the 1970s often included highly persistent compounds such as DDT. Inorganic compounds containing heavy metals such as arsenic, lead, and mercury were commonly used before the 1950s. Chemicals commonly used in the past have the potential to leave residual inorganic or organic components in shallow soils that could persist for many decades. If present in elevated concentrations, these residues could pose a potential health risk to future construction workers, residents, and other persons who may come in direct contact with surface soils. There are no known areas of soil or groundwater contamination from residual agricultural chemicals within the Plan Area, but comprehensive soil and groundwater testing has not been conducted.

Lead, Asbestos, and Other Hazardous Materials in Buildings

Lead and lead compounds have been used in many products found around our homes, for example: paint, ceramics, pipes, plumbing materials, gasoline, batteries, ammunition and cosmetics. In 1978, the Federal government banned the use of lead-based paint in housing. There are structures within the Plan Area consisting of few small ranches, few agricultural-residential homes and the Sacramento Raceway. Some of these structures were built prior to 1978 and could contain lead-based paint.

Asbestos is a naturally occurring, fibrous silicate mineral that was commonly used as an acoustic insulator and in thermal insulation (fire proofing and other building materials) prior to 1989, when it was banned by the U.S. Environmental Protection Agency (EPA) due the health issues it can cause if the fibers are inhaled. Some of the older structures within the Plan Area could contain asbestos. In addition to being used in building materials, asbestos can also be found occurring naturally in portions of eastern Sacramento County, within Folsom, south of Folsom, and Rancho Murieta. As discussed in Chapter 12, “Geology, Soils, and Mineral Resources,” asbestos does not occur naturally within the Plan Area or the vicinity.

In addition, other common items present in buildings, such as electrical transformers, fluorescent lighting, electrical switches, heating/cooling equipment, and thermostats, can contain hazardous materials that may pose a health risk if not handled and disposed of properly. Among these hazardous materials are polychlorinated biphenyls (PCBs), which were used in hundreds of industrial and commercial applications because of their non-flammability, chemical stability, high boiling point, and electrical insulating properties. Equipment in the Plan Area that might contain PCBs includes electrical equipment and thermal insulation material (e.g., fiberglass, felt, foam, or cork). Older, pole-mounted electrical transformers can also contain PCBs.

Documented Sites of Hazardous Materials Release

Sacramento Raceway

The Sacramento Raceway is an existing, unpermitted facility within the Plan Area that stores hazardous materials (see Plate HM-1). The operation has a long history of code enforcement violations, including several issues with leaking tanks and soil

contamination. Specific citations issued by Sacramento County EMD include: surface contamination caused by storage containers being turned upside down, spillage of waste oil, leaking oil containers, batteries being stored directly on the ground, improper steam cleaning of engines without containing wastewater, extensive spillage of diesel fuel, spills of oil under equipment, and no records of proper waste oil disposal for a period of 3 years. In addition, a natural gas leak was reported after a 12-inch steel line ruptured in September of 2008. Because groundwater in this area generally flows to the southwest, if groundwater contamination occurred due to past incidents at the raceway, it could have moved into other parts of the Plan Area. The Phase I ESA identified the raceway as a Recognized Environmental Condition for historic and ongoing releases of hazardous materials.

MATHER AIR FORCE BASE

Mather Air Force Base hosted military operations from 1918 until it was decommissioned in 1993. Since the base was decommissioned, most of the land formerly occupied by the base has been transferred to the ownership of Sacramento County, and the airfield now operates as a public airport. As is common with operational and decommissioned military bases, several areas of Mather Field have been contaminated with or contain hazardous materials that were used during base operations. 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; 75 of these sites have been remediated. Key contaminants include solvents, petroleum products, and various solid wastes. In addition, pesticides, herbicides, asbestos, PCBs, radon, ordnance, metals (including lead), low-level radioactive waste, landfill gases, and medical waste that were used, stored, or generated as part of base operations have been identified as potential sources of contamination.

Because Mather Field was operated as a federal military installation, EPA, U.S. Department of Defense, U.S. Air Force, California EPA (Cal/EPA), and California Department of Toxic Substance Control (DTSC) oversee hazardous substances investigations and remediation. Remediation is currently underway at several locations at Mather. Existing soil contamination is undergoing remediation using in situ treatment (soil vapor extraction [SVE] and/or bioventing) and excavation and transport of contaminated soils to an on-site ex situ bioremediation facility. There are currently nine sites with active SVE/biovent remediation. Three on-site landfills have been capped and closed, and a minimum of 30 years of post-closure monitoring and maintenance is being conducted. Soil sampling is also occurring at the location of two above-ground storage tanks.

The Plan Area is located approximately 1 mile southeast of the former base. One of the cleanup cases associated with former operations of Mather Air Force Base was located near the Plan Area, in the area north of Kiefer Road. The site was a landfill (Landfill 6), which was excavated and all materials were transported to another landfill (Landfill 4) in 1996 (see Plate HM-1). Remediation of the site is complete and the case has been closed by SWRCB.

Transport of Hazardous Materials

Hazardous materials, hazardous wastes, and petroleum products are a subset of the goods routinely shipped along the transportation corridors adjacent to the Plan Area. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by the DTSC. Three agencies maintain searchable databases that track hazardous material releases in reportable quantities: EPA maintains the Hazardous Materials Incident Report System that contains data on hazardous material spill incidents reported to the U.S. Department of Transportation (US DOT); the California Office of Emergency Services (OES) maintains the California Hazardous Materials Incident Report System that contains information on reported hazardous material accidental releases or spills; and the State Water Resource Control Board (SWRCB) Site Cleanup Program maintains information on reported hazardous material accidental releases or spills. US DOT also provides grants to local agencies for preparation and training for hazardous materials incidents through its Hazardous Materials Emergency Preparedness Program administered by OES.

Schools

Children are particularly susceptible to long-term effects from emissions of hazardous materials. Therefore, locations where children spend extended periods of time, such as schools, are particularly sensitive to hazardous air emissions and accidental release associated with the handling of extremely hazardous materials, substances, or wastes.

The closest school to the Plan Area is Mather Heights Elementary School, which is roughly 0.75 mile north of the Plan Area and is part of the Folsom Cordova School District. Other nearby schools include Robert J. McGarvey Elementary School and Sunrise Elementary School in the Elk Grove School District, which are located roughly 1.75 miles and 2 miles northeast of the Plan Area, respectively. The Plan Area would be served by the Elk Grove Unified School District.

Wildland Fire Hazards

While all of California is subject to some degree of wildfire hazard, there are specific features that make certain areas more hazardous. The California Department of Forestry and Fire Protection (CAL FIRE) is required by law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors (Public Resources Code [PRC] 4201-4204 and Government Code 51175-89). When development spreads into less densely populated, often hilly areas, it increases the number of people living in areas that are prone to wildfire.

The Plan Area is within a local responsibility area that CAL FIRE has identified as a non–very high fire hazard severity zone (CAL FIRE 2008). The Sacramento Metropolitan Fire District is responsible for providing fire protection services to the Plan Area.

REGULATORY SETTING

FEDERAL

EPA has primary responsibility for enforcing and implementing federal laws and regulations pertaining to hazardous materials. Applicable regulations are contained mainly in Titles 29, 40, and 49 of the Code of Federal Regulations (CFR). Hazardous materials, as defined in the CFR, are listed in 49 CFR 172.101. Management of hazardous materials is governed by the laws summarized below. These laws and associated regulations include specific requirements for facilities that generate, use, store, treat, and/or dispose of hazardous materials.

RESOURCE CONSERVATION AND RECOVERY ACT

The Resource Conservation and Recovery Act (RCRA) is the principal federal legislation regulating hazardous waste. Under the RCRA, EPA regulates the generation, transportation, treatment, storage, and disposal of hazardous substances. RCRA imposes reporting, permitting, and operational control requirements on businesses or individuals that generate, treat, store, or dispose of hazardous materials or hazardous waste. RCRA is implemented by Title 40 of the Code of Federal Regulations. The 1984 amendments to RCRA involve stringent monitoring of landfills and underground storage tanks for hazardous substances. EPA has delegated authority for many RCRA requirements to DTSC.

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT

In response to the need to clean up hazardous waste sites created before implementation of RCRA, Congress enacted Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) in 1980. CERCLA, also called the Superfund Act, provided broad federal authority and created a trust fund for addressing releases and threatened releases of hazardous substances that could endanger public health or the environment.

EPA is responsible for compiling the National Priorities List for known or threatened release sites of hazardous substances, pollutants, or contaminants and provides oversight of Superfund investigation/remediation projects, evaluates remediation technologies, and develops hazardous materials disposal restrictions and treatment standards. The former Mather Air Force Base is listed as a national Superfund site with ongoing remediation activities at several sites on the former base property.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT

The risk of exposure to hazardous waste as a result of RCRA and CERCLA was addressed in the Superfund Amendments and Reauthorization Act (SARA) of 1986. As a result of SARA, the federal Occupational Safety and Health Administration (OSHA) published hazardous waste cleanup regulations in 29 CFR 1910.120.

Toxic Substances Control Act

The Toxic Substances Control Act provides EPA with authority to require reporting, recordkeeping and testing, and restrictions related to chemical substances and/or mixtures. The Toxic Substances Control Act addresses the production, import, use, and disposal of specific chemicals including PCBs, asbestos, radon, and lead-based paint.

Clean Air Act

Regulations under the Clean Air Act (42 USC 7401 et seq., as amended) are designed to prevent accidental releases of hazardous materials. The regulations require facilities that store more than a threshold quantity of regulated substances to develop a risk management plan that includes hazard assessments and response programs to prevent accidental releases of listed chemicals.

Occupational Safety and Health Administration Worker Safety Requirements

OSHA is responsible for ensuring worker safety. OSHA sets federal standards for implementation of workplace training, exposure limits, and safety procedures for handling hazardous substances and addressing other potential industrial hazards. OSHA also establishes criteria by which each state can implement its own health and safety program. The Hazard Communication Standard (CFR Title 29, Part 1910) requires that workers be informed of the hazards associated with the materials they handle. Workers must be trained in safe handling of hazardous materials, use of emergency response equipment, and building emergency response plans and procedures. Containers must be labeled appropriately, and material safety data sheets must be available in the workplace.

Hazardous Materials Transportation Act

US DOT has developed regulations in Titles 10 and 49 of the CFR pertaining to the transport of hazardous substances and hazardous wastes. The Hazardous Materials Transportation Act is administered by the Research and Special Programs Administration of US DOT. The act provides US DOT with a broad mandate to regulate the transport of hazardous materials, with the purpose of adequately protecting the nation against the risk to life and property that is inherent in the commercial transportation of hazardous materials. US DOT regulations that govern the transportation of hazardous materials are applicable to any person who transports, ships, causes to be transported or shipped, or who is involved in any way with the manufacture or testing of hazardous materials packaging or containers.

Federal Insecticide, Fungicide, and Rodenticide Act

Pesticides are regulated under the Federal Insecticide, Fungicide and Rodenticide Act by EPA. This includes labeling and registration of pesticides as to how they may be used. EPA delegates pesticide enforcement activities in California to the California Department of Pesticide Regulation, under Title 3 of the California Code of Regulations and the California Food and Agriculture Code. The California Department of Pesticide

Regulation registers pesticides for use in California, and licenses pesticide applicators and pilots, advisors, dealers, brokers, and businesses.

STATE

CALIFORNIA HAZARDOUS MATERIALS RELEASE RESPONSE PLANS AND INVENTORY LAW

This law requires preparation of hazardous materials business plans and disclosure of hazardous materials inventories. Such plans must include an inventory of hazardous materials handled, as well as facility floor plans showing where hazardous materials are stored, an emergency response plan, and emergency response procedures that provide for employee training (California Health and Safety Code, Division 20, Chapter 6.95, Article 1). The business plan program is administered by the California Emergency Management Agency.

CAL/OSHA WORKER SAFETY REQUIREMENTS

California OSHA (Cal/OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations in California. Cal/OSHA regulations for the use of hazardous materials in the workplace (CCR Title 8) require safety training, available safety equipment, accident and illness prevention programs, hazardous-substance exposure warnings, and preparation of emergency action and fire prevention plans. Cal/OSHA enforces regulations on hazard communication programs and mandates specific training and information requirements. These requirements include procedures for identifying and labeling hazardous substances, providing hazard information about hazardous substances and their handling, and preparing health and safety plans to protect workers and employees at hazardous-waste sites. Employers must make material safety data sheets available to employees and document employee information and training programs.

CALIFORNIA ACCIDENTAL RELEASE PREVENTION PROGRAM

The goal of the California Accidental Release Prevention Program (CCR Title 19, Division 2, Chapter 4.5) is to reduce the likelihood and severity of consequences of any releases of extremely hazardous materials. Any business that handles regulated substances (chemicals that pose a major threat to public health and safety or the environment because they are highly toxic, flammable, or explosive, including ammonia, chlorine gas, hydrogen, nitric acid, and propane) must prepare a risk management plan. The risk management plan is a detailed engineering analysis of the potential accident factors present at a business and the measures that can be implemented to reduce this accident potential. The plan must provide safety information, hazard data, operating procedures, and training and maintenance requirements. The list of regulated substances is found in Article 8, Section 2770.5 of the program regulations.

EMERGENCY RESPONSE TO HAZARDOUS MATERIALS INCIDENTS

California has developed an emergency response plan to coordinate emergency services provided by federal, State, and local governments and private agencies. Response to

hazardous material incidents is one part of this plan. The plan is managed by the California Emergency Management Agency, which coordinates the responses of other agencies, including Cal/EPA, the California Highway Patrol, the California Department of Fish and Wildlife, and Regional Water Quality Control Boards (RWQCBs).

California Government Code Section 65962.5 (Cortese List)

The provisions of California Government Code Section 65962.5 are commonly referred to as the "Cortese List" (after the legislator who authored the law). The Cortese List is a planning document used by State and local agencies to comply with CEQA requirements in providing information about the location of hazardous materials release sites. Section 65962.5 requires Cal/EPA to develop an updated Cortese List at least annually. DTSC is responsible for a portion of the information contained in the Cortese List. Other State and local government agencies in California, such as the State Water Resources Control Board, must provide additional information. There are no sites on the Cortese list in the Plan Area.

Asbestos Abatement

Asbestos abatement efforts must be completed in compliance with 7 CCR Section 5208, 8 CCR Section 1529, and 8 CCR Sections 341.6 through 341.14. The regulations in 7 CCR Section 5208 implement worker exposure limits, require exposure monitoring, implement compliance programs, require employee protection and hazard communication, and require employee medical surveillance and reporting. Asbestos exposure for construction work is regulated by 8 CCR Section 1529, which includes exposure limits and procedures for handling and removal. Requirements for transport and disposal are included in 8 CCR Sections 341.6 through 341.14.

Section 19827.5 of the California Health and Safety Code, adopted January 1, 1991, prohibits local agencies from issuing demolition or alteration permits until the applicant has demonstrated compliance with applicable regulations. If there is 100 square feet or more of asbestos-containing material, renovation or demolition of buildings containing asbestos must be conducted by a licensed contractor and the work must comply with requirements included in 8 CCR Sections 1529 and 341.6 through 341.14. Cal/OSHA must be notified 10 days before the start of construction and demolition activities. Asbestos encountered during demolition of an existing building must be transported and disposed of at an appropriate facility. The contractor and hauler of the material must file a hazardous-waste manifest that provides disposal details.

Lead and Lead-Based Paint Abatement

Regulation of lead and lead-based paint is described in 29 CFR 1926.62 and 8 CCR Section 1532.1. These regulations cover the demolition, removal, cleanup, transportation, storage, and disposal of lead-containing material. The regulations outline the permissible exposure limit, protective measures, and monitoring. Cal/OSHA's Lead in Construction Standard requires notification and a lead compliance plan with safe work practices.

California Education Code

Sections 17071.13, 17072.13, 17210, 17210.1, 17213.1-3, and 17268 of the California Education Code became effective January 1, 2000. Together, they establish requirements for assessments and approvals regarding toxic and hazardous materials that school districts must follow before receiving final site approval from the Department of Education and funds under the School Facilities Program. For example, the site approval package must include written determinations regarding the presence of hazardous wastes or pipelines carrying hazardous substances on the site (the adopted CEQA document is often used for these purposes). In addition, Section 17213(b) requires the local education agency to consult with the applicable air district to identify facilities within 0.25 mile of the proposed site that might reasonably be anticipated to emit hazardous air emissions or handle hazardous materials, substances, or wastes and prepare written findings that either there are not such facilities, the facilities do not pose a health risk, or corrective measures will be taken (consistent PRC Section 21151.8). The code also requires that a Phase I ESA is conducted according to the American Society of Testing and Materials standards (ASTM E-1527-2000) and transmitted to DTSC. If the Phase I ESA concludes that further investigation is needed or DTSC requires it, a preliminary endangerment assessment (PEA) must be completed 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.

California Fire Code

The California Fire Code (CFC) is Chapter 9 of CCR Title 24. It is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The CFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The CFC and the California Building Code use a hazard classification system to determine what protective measures are required to protect fire and life safety. These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the CFC employs a permit system based on hazard classification. The CFC is updated every 3 years.

California Code of Regulations, Title 14

Title 14 of the CCR sets forth the minimum development standards for emergency access, fuel modification, setback, signage, and water supply, which help prevent damage to structures or people by reducing wildfire hazards.

Local

Sacramento County Emergency Management Department

The Hazardous Materials Division of Sacramento County EMD is the designated Certified Unified Program Agency (CUPA) for Sacramento County. The Sacramento County EMD has a 24-hour hazardous materials incident response team and responds

to incidents involving chemical releases, as well as any other hazardous materials situations. As the CUPA, the Hazardous Materials Division is responsible for implementing six statewide environmental programs for Sacramento County:

- Underground storage of hazardous substances (underground storage tanks),
- Hazardous materials business plan requirements,
- Hazardous waste generator requirements,
- California Accidental Release Prevention Program,
- Uniform Fire Code hazardous materials management plan, and
- Aboveground storage tanks (spill prevention control and countermeasures plan).

SACRAMENTO COUNTY OFFICE OF EMERGENCY SERVICES

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.

SACRAMENTO METROPOLITAN AIR QUALITY MANAGEMENT DISTRICT ASBESTOS PROGRAM

The Sacramento Metropolitan Air Quality Management District regulates asbestos in building materials. The program applies to renovations or demolitions of jurisdictional structures in Sacramento County that include asbestos. This program requires and asbestos survey to identify all asbestos in building materials and abatement by a licensed asbestos contractor.

SACRAMENTO COUNTY LOCAL HAZARD MITIGATION PLAN

The *Sacramento County Local Hazard Mitigation Plan*, as amended, includes a risk assessment of existing hazards such as severe weather, dam failure, flooding, earthquakes, wildfire, drought, health hazards, landslides, and volcanoes, and a mitigation strategy. The plan includes countywide recommended action items to reduce the economic effects and the loss of life and property.

SACRAMENTO COUNTY EVACUATION PLAN

The Sacramento County Evacuation Plan is developed as an Annex to the Sacramento County 2008 All-Hazards Emergency Operations Plan. The purpose of this evacuation plan is to document the agreed upon strategy for the County's response to emergencies that involve the evacuation of persons from an impacted area to a safe area. This involves coordination and support for the safe and effective evacuation of the general population, and for those who need additional support to evacuate. Focus areas within this evacuation plan include public alert and warning, transportation, and care and shelter.

Primary evacuation routes are established for each of the seven County Sheriff Districts. These include major interstates, highways and prime arterials within Sacramento County. Local jurisdictions work with the county, and especially the Operation's Section, Law Enforcement Branch and the Evacuation Movement Unit to identify and update evacuation routes and evacuation transfer points. The primary evacuation routes will usually be major interstates and other highways, and major roadways within and out of the county - unless otherwise determined by the County DOT. During an evacuation, County DOT traffic engineers calculate traffic flow capacity and decide which of the available traffic routes should be used to move people in the correct directions.

Sacramento County 2030 General Plan Policies

The following 2030 General Plan policy pertaining to hazardous materials is applicable to the Project:

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.

Community Plans

Cordova Community Plan

The Cordova Community Plan does not contain objectives related to hazardous materials that are applicable to the Project.

Vineyard Community Plan

The Vineyard Community Plan does not contain policies related to hazardous materials that would apply to the Project.

Impacts and Analysis

Significance Criteria

Based on the CEQA Guidelines, a hazard or hazardous materials impact is significant if implementation of the 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 0.25 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; or
6. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires.

Issues not Discussed Further

All issues identified in the significance criteria are evaluated below.

Methodology

This analysis is based primarily on the information and recommendations in the Phase I ESA prepared by BSK Associates. As part of the Phase I ESA, a site reconnaissance was completed for Applicant-owned properties within the Plan Area in June of 2013. A windshield survey was completed for non-participating properties, as well as nearby offsite properties. The site reconnaissance provided on-the-ground observations of potential hazards and hazardous conditions within the properties that were accessible on the days of the survey. County staff also reviewed DTSC's Envirostor database and SWRCB's Geotracker database in December of 2015.

Impact: Accidental Release Due to Transport, Use, or Disposal of Hazardous Materials During Construction

Proposed Project

Construction activities associated with future development would temporarily increase the regional transport, use, storage, and disposal of hazardous materials and petroleum products (such as diesel fuel, lubricants, paints and solvents, and cement products containing strong basic or acidic chemicals) that are commonly used at construction sites. Hazardous waste generated during construction may consist of welding materials, fuel and lubricant containers, paint and solvent containers, and cement products containing strong basic or acidic chemicals.

Hazardous materials transported by truck use many of the same freeways, arterials, and local streets as other traffic. This creates a risk of accidents and associated release of hazardous materials for other drivers and for people along these routes. Although the transport of hazardous materials could result in accidental spills, leaks, toxic releases, fire, or explosion, the US DOT Office of Hazardous Materials Safety prescribes strict regulations for the safe transportation of hazardous materials, as described in Title 49 of the CFR. These standard accident and hazardous materials recovery training and procedures are enforced by the State and followed by private State-licensed, certified, and bonded transportation companies and contractors.

Further, pursuant to 40 CFR 112, the Project would be required to prepare a spill prevention and treatment plan for rapidly, effectively, and safely cleaning up and disposing of any spills or releases that may occur during construction. As required under state and

federal law, notification and evacuation procedures for site workers and local residents would be included as part of the plan in the event of a hazardous materials release during on-site construction. In addition to 40 CFR 112, SWRCB Construction General Permit (2009-0009 DWQ) requires spill prevention and containment plans to avoid spills and releases of hazardous materials and wastes into the environment. Inspections would be conducted to verify consistent implementation of general construction permit conditions and best management practices (BMPs) to avoid and minimize the potential for spills and releases, and of the immediate cleanup and response thereto. BMPs include, for example, the designation of special storage areas and labeling, containment berms, coverage from rain, and concrete washout areas. In addition, workplace rules administered by the California Occupational Safety and Health Administration (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 through container labeling and other warnings, Material Safety Data Sheets, and employee training. Compliance with the aforementioned regulations would minimize the potential risk of a spill or accidental release of hazardous materials during construction. This impact would be **less than significant**.

Alternative 2

Except for the wetland preserve area, which would be larger than proposed for the Project, Alternative 2 would result in construction activities throughout the Plan Area. This alternative would be subject to the same strict regulations that control the transport, use, and disposal of hazardous materials as the Project, and would not result in the development of land uses that would be subject to greater risk from accidental release than the Project. Therefore, like the Project, Alternative 2 would have a **less-than-significant** impact associated with accidental release of hazardous materials during construction.

Mitigations Measures

No mitigation is required.

Impact: Accidental Release of Hazardous Materials During Operation

Proposed Project

Development of the Project would increase the commercial and household use of potentially hazardous materials within the Plan Area. Specific uses, such as dry cleaners and gas stations, would involve routine transport, use, and disposal of hazardous materials. Exposure to hazardous materials could cause various short-term and/or long-term health effects. Possible health effects could be acute (immediate, or of short-term severity), chronic (long-term, recurring, or resulting from repeated exposure), or both. Acute effects, often resulting from a single exposure, could result in nausea, vomiting, headache, dizziness, or burns. Chronic exposure could result in systemic damage or damage to organs, such as the lungs, liver, or kidneys. Health effects would be specific to each hazardous material.

The operation of businesses that use, create, or dispose of hazardous materials is regulated and monitored by federal, State, and local regulations that provide protection to the public and the environment from the hazardous materials manufactured within, transported to, and disposed within the region. RCRA, Title 22 of the CCR, and the Hazardous Waste Control Law regulate the generation, transportation, treatment, storage, and disposal of hazardous waste. These laws impose regulatory systems for handling hazardous waste in a manner that protects human health and the environment.

Facilities that would use hazardous materials on-site would be required to obtain permits and comply with appropriate regulatory agency standards designed to avoid hazardous waste releases and protect the public health. Regulated activities would be managed by the Sacramento County EMD, the designated CUPA, and would be required to comply with CCR Title 8, “Industrial Relations,” for workplace regulations addressing hazardous materials, as well as Title 26, “Toxics.” Title 26, Division 6 contains requirements for CHP enforcement of hazardous materials storage and rapid-response cleanup in the event of a leak or spill. Compliance with these regulations would reduce the potential for accidental release of hazardous materials during future construction and operation and minimize both the frequency and the magnitude if such a release occurs.

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. For more information about solid waste collection, refer to Chapter 20, “Wastewater and Solid Waste Utilities.”

Because construction and operation of the 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, Department of Toxic Substances Control, California Highway Patrol, California Department of Transportation) and/or local jurisdictions (e.g., Sacramento Metropolitan Fire District and Sacramento County Environmental Management Department), impacts related to creation of significant hazards for employees and the general public through routine transport, use, and disposal of hazardous materials would be unlikely; this impact would be **less than significant**.

Alternative 2

Alternative 2 would comply with regulations that govern the transport, use, and disposal of hazardous materials. Impacts associated with accidental release of hazardous materials during operation would be **less than significant**.

Mitigations Measures

No mitigation is required.

IMPACT: POTENTIAL FOR RELEASE OF HAZARDOUS MATERIALS FROM UNDOCUMENTED OR DOCUMENTED SITES OF CONTAMINATION

PROPOSED PROJECT

The Plan Area consists mostly of vacant, undeveloped land; however, there are some single-family agricultural residences, located mainly along Excelsior and Jackson roads and Tree View Lane/Grenville Road; the Sacramento Raceway, on the west side of the Plan Area; and an abandoned koi farm, in the northwestern portion of the Plan Area. Construction would involve site grading, excavation, trenching, and demolition and construction of buildings. Future construction and ground work activities within the Plan Area could result in the exposure of construction workers and the public to hazardous materials if they are present within the soil and/or groundwater within the site. Such exposure could pose health risks to those who make contact with contaminated soil and groundwater.

The Phase I ESA identified debris piles along Kiefer Road with the potential to contain hazardous materials. In addition, although no visual evidence of underground fuel tanks was observed during site reconnaissance, the Phase I ESA indicates that they may be present in the Plan Area.

UNDOCUMENTED ON-SITE HAZARDOUS MATERIALS

Construction activities that disturb subsurface materials could encounter previously unidentified contamination from past practices or placement of undocumented fill or even unauthorized disposal of hazardous wastes. Encountering these hazardous materials could expose workers, the public or the environment to adverse effects depending on the volume, materials involved, and concentrations.

Due to historical use for agricultural purposes, it is anticipated that residue from pesticides, fertilizers, and other agricultural chemicals may be present on the site. Although current agricultural practices do not generally employ toxic chemicals with long-persistence, chemicals formerly used in agriculture included heavy metals and organic compounds, such as DDT, which may persist in soil for decades. These residues could potentially pose a health risk to persons who come in contact with those chemicals.

If contaminated soils and/or groundwater (i.e., identifiable by soil staining or odors) are encountered during construction activities, work would cease until appropriate worker health and safety precautions, as specified by CCR Title (Section 5194) promulgated by Cal/OSHA, are implemented. A qualified hazardous materials specialist would be notified for an evaluation and the appropriate regulatory agency would be contacted. If deemed necessary by the appropriate agency, remediation would be undertaken in accordance with existing federal, State, and local regulations/requirements and guideline established for the treatment of hazardous substances. Work would cease in the contaminated area until the nature and extent of contamination have been established, and proper disposal or remediation has occurred. Any contaminated soils and/or groundwater encountered during construction would require proper disposal. This would likely require removal from the site and transportation to an EPA-approved

disposal facility by a US DOT-certified hazardous waste transporter. The designation of encountered contamination would be based on the chemicals present and chemical concentrations detected through laboratory analysis. Based on the analytical results, appropriate disposal of the material in accordance with EPA, DTSC, and RWQCB guidelines would be implemented.

LEAD, ASBESTOS, AND OTHER HAZARDOUS BUILDING MATERIALS

Existing structures are believed to contain hazardous materials, including asbestos, lead, and heavy metals – primarily because many of the existing structures were constructed when the use of these materials was not heavily restricted. Demolition of structures could result in inadvertent release or improper disposal of debris containing potentially hazardous materials; however, federal, state, and local regulations have been developed to address potential impacts related to the handling and disposal of hazardous materials during demolition. Potential impacts would be minimized through adherence to regulatory standards that prescribe specific methods of material characterization and handling.

Federal and state regulations govern the demolition of structures where materials containing lead and asbestos are present. Asbestos and lead abatement must be performed and monitored by contractors with appropriate certifications from the State Department of Health Services. In addition, Cal/OSHA has regulations concerning the use of hazardous materials, including requirements for safety training, availability of safety equipment, hazardous materials exposure warnings, and emergency action and fire prevention plan preparation. Cal/OSHA enforces the hazard communication program regulations, which include provisions for identifying and labeling hazardous materials, describing the hazards of chemicals, and documenting employee-training programs. All demolition that could result in the release of lead and/or asbestos must be conducted according to Cal/OSHA standards. Specific actions required by law include the following:

- **Asbestos**. 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 (Sacramento Metropolitan Air Quality Management District). 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. Any asbestos would be removed and disposed of by an accredited contractor in compliance with federal, state, and local regulations (including the Toxic Substances Control Act and the National Emission Standard for Hazardous Air Pollutants). Compliance with these regulations would result in the safe disposal of asbestos-containing materials.
- **Lead-based paint or other coatings.** Exposure to, and containment of, lead is regulated by DTSC and the California Code of Regulations Title 8 and Title 22. A survey for indicators of lead-based coatings would be conducted before demolition to further characterize the presence of lead. For the purposes of compliance with Cal/OSHA regulations, all coated surfaces would be assumed to potentially contain lead. There is also a potential for soil contamination because

of deposition of deteriorated (i.e., flaked, peeled, chipped) lead-based paint adjacent to structures where lead-based exterior paints were used. Loose or peeling paint may be classified as a hazardous waste if concentrations exceed total threshold limits. Cal/OSHA regulations require air monitoring, special work practices, and respiratory protection during demolition where even small amounts of lead have been detected.

- **Heavy metals and PCBs.** Spent florescent light bulbs and ballasts, thermostats, and other electrical equipment may contain heavy metals, such as mercury, or PCBs. If concentrations of these materials exceed regulatory standards, they would be handled as hazardous waste in accordance with hazardous waste regulations.

DOCUMENTED SITES OF HAZARDOUS MATERIALS RELEASE

The Plan Area includes the Sacramento Raceway, which is known to contain hazardous materials and conditions and has experienced violations with improper handling of hazardous materials on numerous occasions. The Phase I ESA documented several past known occurrences of soil contamination, which could have resulted in groundwater contamination. The Sacramento Raceway is not a participating property within the Plan Area, so no testing has occurred to confirm or deny the presence of contamination.

The Project would also result in the construction adjacent to land that was previously used in conjunction with Mather Air Force Base, which is a Superfund site with ongoing cleanup activities. Although the areas located near the Plan Area have been remediated (see Plate HM-1, above) excavation and construction activities at or near these areas could potentially expose construction workers and the general public to previously unidentified soil contamination. It is unknown if groundwater contamination from past base activities has affected any of the properties located within the Plan Area.

CONCLUSION

Existing contamination may be associated with the Sacramento Raceway and debris piles documented along Kiefer Road. In addition, while all properties within the Plan Area were included in the Phase I ESA, only properties owned by the Project Applicant were accessed during the site reconnaissance, so it is possible that hazardous conditions may be present on other properties that were not observed during the study. Build-up of agricultural chemicals and potential for fuel tanks may also constitute a risk during ground disturbance. These portions of the Plan Area require further investigation.

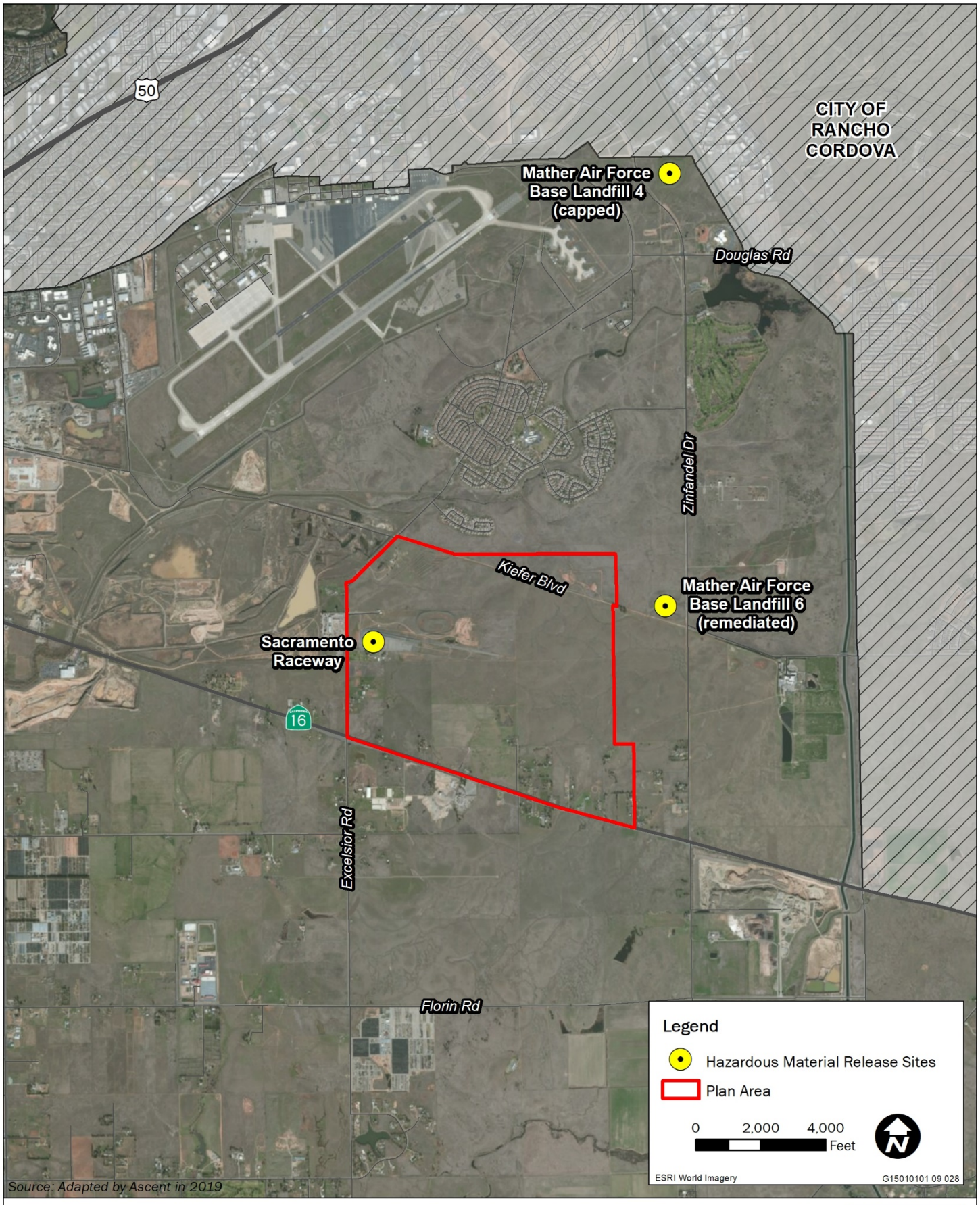

Plate HAZ-1: Documented Sites of Hazardous Material Release

ASCENT ENVIRONMENTAL

Further, with the proximity of land uses that may contaminate groundwater and because groundwater in the area flows from the northeast to the southwest of the Plan Area, it is possible that groundwater contamination from the Sacramento Raceway and/or former Mather Air Force Base could result in groundwater contamination beneath other portions of the Plan Area. This includes some of the participating properties that would likely be among the first to be developed in the Plan Area. The potential for groundwater contamination is unknown but assumed in this EIR to be likely. The Phase I ESA did not include testing for soil or groundwater contamination, and recommended the preparation of a limited Phase II ESA; which has yet been completed. It is common practice for lending institutions to require a Phase I ESA to be prepared to research and disclose the prior uses of the site and the likelihood that residual hazardous materials and/or waste might be present in underlying soil and/or groundwater when properties change hands. However, there are no general regulatory requirements to conduct a Phase I ESA, or subsequent investigation of potential contamination. Public exposure to this contamination would constitute a **potentially significant** impact.

With enforcement of the mitigation measures identified below and adherence to existing hazardous materials regulations, impacts from any existing hazardous materials would be minimized. Mitigation Measure HM-1 would require preparation of Phase I ESAs for all non-participating properties and the full implementation of all recommendations. Mitigation Measure HM-2 requires the preparation of Phase II ESAs with soil and groundwater sampling for all properties, including Applicant-owned properties, based on the findings and recommendation of the Phase I ESA, which determined that soil and groundwater contamination may be present within the Plan Area. Mitigation Measure HM-3 would establish a hazardous materials contingency plan to address potential soil and groundwater contamination, if discovered during construction activities. This impact would be reduced **less than significant with mitigation**.

Alternative 2

With the 45.5-acre increase in area designated Wetland Preserve, Alternative 2 would result in slightly less potential for ground disturbance than the Project. However, the remainder of the Plan Area would remain subject to the potential for discovery of and exposure to contaminated soils and/or groundwater. The potential for release of hazardous materials from site of contamination would be **potentially significant**. Implementation of Mitigation Measures HM-1 through HM-3 would require further evaluation and characterization of the Plan Area. Impacts associated with Alternative 2 would be **less than significant with mitigation**.

Mitigation Measures

HM-1: The future project applicant(s) for all non-participating properties shall have a Phase I ESA prepared by a qualified professional in accordance with the American Society for Testing and Materials' E-1527-05 standard before or at the time of application. All applications for future development of such properties shall not be deemed complete until a Phase I ESA that includes analysis of potential for soil and groundwater contamination has been completed and submitted to the Sacramento County Office of Planning and Environmental Review.

Once a Phase I ESA that meets the satisfaction of the Environmental Coordinator has been submitted to the Office of Planning and Environmental Review, all applicable recommendations from the Phase I ESA shall be incorporated into the future project as required conditions of approval. If a Phase I ESA indicates the presence or likely presence of contamination, the County shall require a Phase II ESA, and recommendations of the Phase II ESA shall be fully implemented prior to ground disturbance.

For work requiring any demolition, the Phase I ESA shall make recommendations for any hazardous building materials survey work that shall be completed.

If the Phase I ESA indicates the potential for the presence of hazardous materials within the property or possible groundwater contamination, a focused CEQA analysis addressing hazardous materials shall be prepared for the future project. Any hazardous materials identified through this process shall be remediated consistent with applicable regulations.

HM-2: A Phase II ESA that includes soil and groundwater contamination sampling and analysis shall be submitted with all future applications for development within the Plan Area, including Applicant-owned properties, based on the recommendations within the Phase I ESA. Applications will not be considered complete until a Phase II ESA covering the entire property proposed for development is provided as required by the Phase I ESA.

Once a Phase II ESA with analyses of soil and groundwater contamination has been submitted to the satisfaction of the Environmental Coordinator, all recommendations for remediation activities and additional studies from the Phase II ESA shall be incorporated into the future project as required conditions of approval.

HM-3: At the time of any application to develop properties within the Plan Area, the County shall require that the Project Applicant or subsequent developer(s) provide a hazardous materials contingency plan to Sacramento County EMD. The plan will describe the necessary actions that would be taken if evidence of contaminated soil or groundwater is encountered during construction. The contingency plan shall identify conditions that could indicate potential hazardous materials contamination, including soil discoloration, petroleum or chemical odors, and presence of underground storage tanks or buried building material.

The plan shall include the provision that, if at any time during the course of constructing the Project, evidence of soil and/or groundwater contamination with hazardous material is encountered, the Project Applicant shall immediately halt construction and contact Sacramento County EMD. Work shall not recommence until the discovery has been assessed/treated appropriately (through such mechanisms as soil or groundwater sampling and remediation if potentially hazardous materials are detected above threshold levels) to the satisfaction of Sacramento County EMD, RWQCB, and DTSC (as applicable). The plan, and obligations to abide by and implement the plan, shall be incorporated into the construction and contract specifications of the Project.

Impact: Result in hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile within an existing or proposed school

Proposed Project

There are no existing schools within 0.25 mile of the Plan Area. However, four new schools are proposed as part of the Project: a joint high school and middle school campus near the northeast corner of the Plan Area and three elementary schools throughout the Plan Area, one of which would be located on the Sacramento Raceway property. The school sites would generally be surrounded by commercial, mixed-use, and residential development; no industrial land use is proposed in the Plan Area.

For new schools, the California Education Code, including *Education Code* Section 17213(b), establishes requirements for assessments and approvals that address the potential for existing contamination on the site, and whether nearby land uses might reasonably be anticipated to emit hazardous air emissions or handle hazardous materials. Assessment of existing contamination is conducted in coordination with DTSC's School Property Evaluation and Cleanup Division, which is responsible for assessing, investigating, and cleaning up proposed school sites. This Division ensures that selected properties are free of contamination or, if the properties were previously contaminated, that they have been cleaned up to a level that protects the students and staff who will occupy a new school. All proposed school sites that would receive State funding for acquisition or construction are required to go through a rigorous environmental review and cleanup process under DTSC's oversight.

Further, because the Plan Area would be developed in phases, there is a potential that schools proposed as part of the Plan would be in operation during both construction and operation of adjacent land uses. During construction, demolition, and excavation activities, future projects could potentially produce hazardous air emissions or involve the handling of extremely hazardous wastes. During operation, future projects could use and produce hazardous materials that may be transported on roadways in the Plan Area. As discussed above, all future projects would comply with federal and state regulations that are designed to reduce the potential for the release of large quantities of hazardous materials and wastes into the environment to an acceptable level. As indicated above, the routine transport, use, and disposal of hazardous materials during construction and operation of the Project are not anticipated to generate a substantial hazard. This impact would be **less than significant**.

Alternative 2

Alternative 2 would have similar potential for conflict with schools as discussed above for the Project. This alternative proposes the same mix of school facilities as the Project, including an elementary school on the Sacramento Raceway property. The school sites would be generally surrounded by commercial, mixed-use, and residential development; no industrial land use is proposed. As disclosed above for the Project, the California Education Code includes requirements for evaluation and remediation of new school sites. Impacts to schools associated with handling hazardous materials would be **less**

than significant under Alternative 2 because the routine transport, use, and disposal of hazardous materials in compliance with applicable regulations is not anticipated to generate a substantial hazard.

Mitigation Measures

No mitigation is required.

Impact: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan

Proposed Project

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. In the event of an emergency that would require citizens to evacuate, Sacramento County would implement its emergency operations plan, evacuation plan, and mass care and shelter plan.

Construction activities could result in temporary lane closures, increased truck traffic, and other roadway effects that could slow or stop emergency vehicles, temporarily increasing response times and impeding existing services. Construction activities in the Plan Area do not, however, have the potential to substantially hinder emergency response activities or physically interfere with established evacuation routes. Projects requiring encroachment permits for temporary construction activities in public roadways that could be used for emergency response or evacuation are required to prepare traffic mitigation plans that address traffic control during the period the project is occurring within public right of way. To address any temporary road closures that would be required during construction, standard construction mitigation includes notification of emergency responders.

The Project does not contain any uses or features that would create interference with emergency response once the Plan Area is built out. See Chapter 17, “Public Services,” for additional analysis on the potential for interference with response by emergency service providers. The proposed roadway network would be a connected grid pattern, consistent with County Department of Transportation (County DOT) standards, which would provide for easy navigation of streets throughout the Plan Area. Traffic signals would be placed at several intersections along Jackson Road, Excelsior Road, Kiefer Boulevard, and Grenville Drive, at locations deemed appropriate by County DOT. In addition, the Project includes a site for a new fire station within the Plan Area that would provide emergency response to the entire Plan Area and beyond in less than 4 minutes (refer to Chapter 17, “Public Services,” for additional discussion).

Although the Project would result a new population of residents and employees in an area of the county that does not currently support these types of dense land patterns, the Project is not anticipated to impair the implementation of existing emergency response or evacuation plans. This is because the buildout of the Project would be

gradual, over a roughly 20-year period, and the County's emergency plans are adaptive. Further, it is anticipated that these plans would be updated to reflect changes in land use patterns. The potential for construction activities or development to impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan would be **less than significant**.

Alternative 2

Alternative 2 would result in a **less-than-significant impact** on emergency response and evacuation plans because the basic roadway network would be substantially similar to the Project and implementation would be phased so that the County's emergency planning could incorporate the growth in the Plan Area gradually.

Mitigations Measures

No mitigation is required.

Impact: Expose people or structures to wildland fires

Proposed Project

The Plan Area is within a Local Response Area where fire protection is provided by Metro Fire. In the event of a grass fire within or adjacent to the Plan Area, Metro Fire would respond (see Chapter 17, "Public Services," for further discussion of Metro Fire Department's facilities and response times). CAL FIRE has designated the areas as a non–very high fire hazard severity zone (CAL FIRE 2008), which is defined as an area not prone to intense, damaging wildfires.

However, the Project includes siting relatively dense residential land use within proximity to a large open space area. To address potential hazards, the Project includes provisions for a fire station that would be equipped with specialized equipment for fighting fires in grasslands in the Plan Area and nearby development adjacent to open space areas. Further, new construction is subject to the CFC and Title 14 of the CCR, which includes safety measures to minimize the threat of fire. As required by Policy SA-23 in the 2030 General Plan, plans for specific facilities 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. Therefore, future development within the Plan Area would not be exposed to significant risks of wildfire. This impact would be **less than significant**.

Alternative 2

Alternative 2 would increase the proportion of the Plan Area that is set aside as open space, which would translate to an increased potential for wildland fire in the Plan Area. However, these alternatives would include a new fire station with equipment designed to fight grass fires, and all development would be subject to regulations that require safety measures to minimize the threat of fire. Therefore, the impact associated with Alternative 2 would be **less than significant**.

MITIGATION MEASURES

No mitigation is required.

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14 HYDROLOGY, DRAINAGE, AND WATER QUALITY

INTRODUCTION

This chapter describes the regulatory and environmental setting for hydrology, drainage, and water quality in the Plan Area, and identifies and analyzes impacts related to these resources from implementation of the Project. This chapter also includes an evaluation of the potential for flooding due to climate change. For additional discussion of climate change and greenhouse gas emissions, refer to Chapter 9, "Climate Change." Groundwater is discussed in Chapter 18, "Water Supply," of this EIR.

During the NOP scoping process, one comment raised concerns related to the proposed reconstruction and management of Elder Creek. These concerns are addressed in this chapter, as appropriate. A copy of the NOP and comment letters received in response to the NOP are included in Appendix INT-1 of this Draft EIR.

ENVIRONMENTAL SETTING

EXISTING CONDITIONS

CLIMATE

The climate of the Sacramento area is Mediterranean, with cool wet winters and hot, dry summers. Precipitation within the Sacramento River watershed falls as both rain and snow, with precipitation in the winter falling primarily as snow in the higher elevations. Annual, monthly, and daily precipitation varies widely within the watershed, with the highest precipitation totals generally falling in winter in the Sierra Nevada, and in the northern part of the watershed. The high variability in precipitation, snowfall, and snowmelt results in highly variable runoff patterns each year and month during late fall, winter, and spring. Rainfall occurs primarily from November through April and ranges from about 7 to 37 inches per year, with an average annual rainfall of approximately 18 inches (SCGA 2014).

HYDROLOGY

The Project sits at the upstream limits of the watershed break between Morrison Creek and Elder Creek (see Plate HYD-1). The southwestern portion of the Plan Area (roughly 930 acres) is within the headwaters of Elder Creek. A small bend in Morrison Creek runs through the northeastern corner of the Plan Area, and the remainder of the Plan Area (approximately 450 acres) drains north or west into Morrison Creek. Morrison Creek and Elder Creek are both components of the Morrison Creek Stream Group.

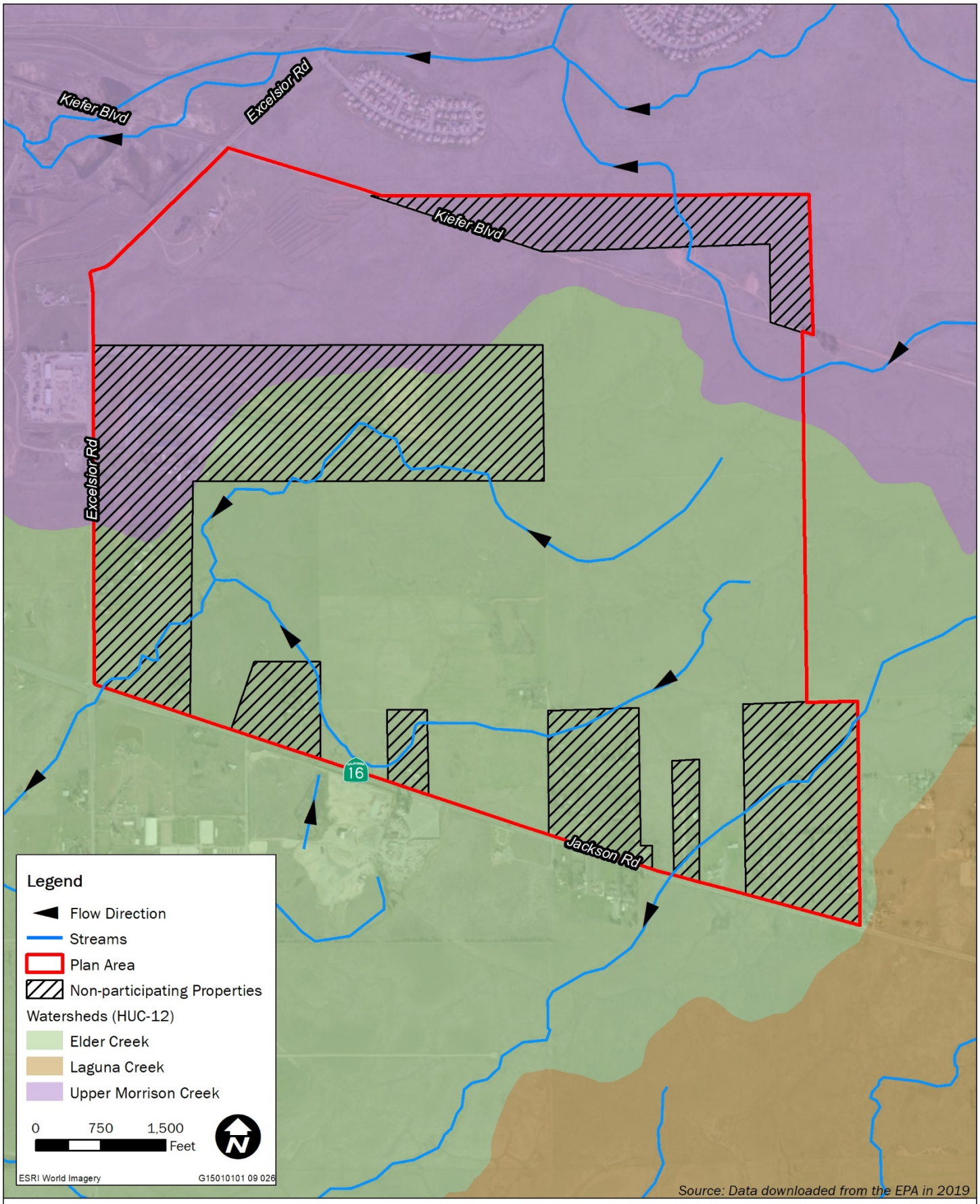


Plate HYD-1: Existing Plan Area Hydrology

ASCENT ENVIRONMENTAL

ELDER CREEK

The areas tributary to Elder Creek drain through natural swales in a generally southwesterly direction towards Jackson Road (Plummer, pers. comm., 2018). There are seven locations where flows in the Elder Creek watershed portion of the Plan Area cross Jackson Road. The primary discharge is through a double box culvert located at the intersection of Jackson and Excelsior Roads.

MORRISON CREEK

The portion of the Morrison Creek watershed in the northeast corner of the Plan Area drains to a tributary of Morrison Creek (see Plate HYD-1). The portion of the Morrison Creek watershed located in the northwest quadrant of the Plan Area does not flow directly into Morrison Creek. This area generally flows west through a system of constructed ditches and some natural swales and exits the Plan Area at six locations: four that cross Excelsior Road, one that crosses Kiefer Road, and one that leaves at the northwest corner of the Plan Area near the intersection of Excelsior Road and Kiefer Boulevard. These small swales and ditches are not mapped by The U.S. Environmental Protection Agency (EPA) and are not depicted on Plate HYD-1. Most of the drainage flows to a low-lying pond created from surface aggregate mining on properties west of Excelsior Road. Sheet flows overtop the banks of this pond, and the flood waters flow down the banks in an erosive manner (CES 2017).

FLOODING POTENTIAL

ONSITE FLOODPLAINS

The Federal Emergency Management Agency (FEMA) has mapped floodplains in the northeast and southwest of the Plan Area. As described above, the existing tributaries of Morrison and Elder Creeks are not well-defined streams within the Plan Area; they occur as natural or quasi-natural swales that swell in response to seasonal rainfall. Plate HYD-2 depicts the 100-year floodplains established by FEMA and maps the onsite drainages that are estimated to have flooding more than a couple feet deep associated with a 100-year rainfall event, as modeled for the existing condition in the Jackson Township Master Plan Drainage Report (CES 2017, Appendix HYD-1) (herein after referred to as the Drainage Master Plan). These modeled floodplains currently experience flooding but are not mapped by FEMA. They were identified by developing hydrographs of the Plan Area using topographic data and identifying representative cross sections of stream channels. Hydraulic model cross sections were developed from the 3-dimensional terrain model and friction parameters were assumed based on existing conditions.

OFFSITE FLOODING

The adjacent properties are generally undeveloped and have hydrologic conditions that are like the Plan Area. The natural or quasi-natural drainages, swales, and ponds respond to rainfall by increasing in size, but can generally accommodate flows. An exception is the property west of Excelsior Road. As indicated above, the topography of that property has been manipulated by aggregate mining and the Morrison Creek tributaries flow to this site via channelized swale, where they contribute surface water to a pit (shown within the FEMA floodplain in the northwest corner of Plate HYD-2).

The Morrison Creek Stream Group ultimately drains to the Beach Stone Lakes (BSL) area, which has a history of flooding because of upstream runoff, direct precipitation in the area, and backwater from the Cosumnes and Mokelumne Rivers during periods of flooding and high river stages. Sacramento County has elected not to undertake structural flood protection in this area considering various environmental and institutional factors.

LAKES AND LEVEES IN THE REGION

There are no dams or levees located on or adjacent to the Plan Area. The nearest dam is located at Mather Lake, approximately 2 miles to the northeast, which was created near the eastern boundary of Mather Air Force Base in the 1950s by damming Morrison Creek with earthen embankments. Sacramento County repaired the dam and constructed a new spillway in 2017, bringing the dam into compliance with State standards.

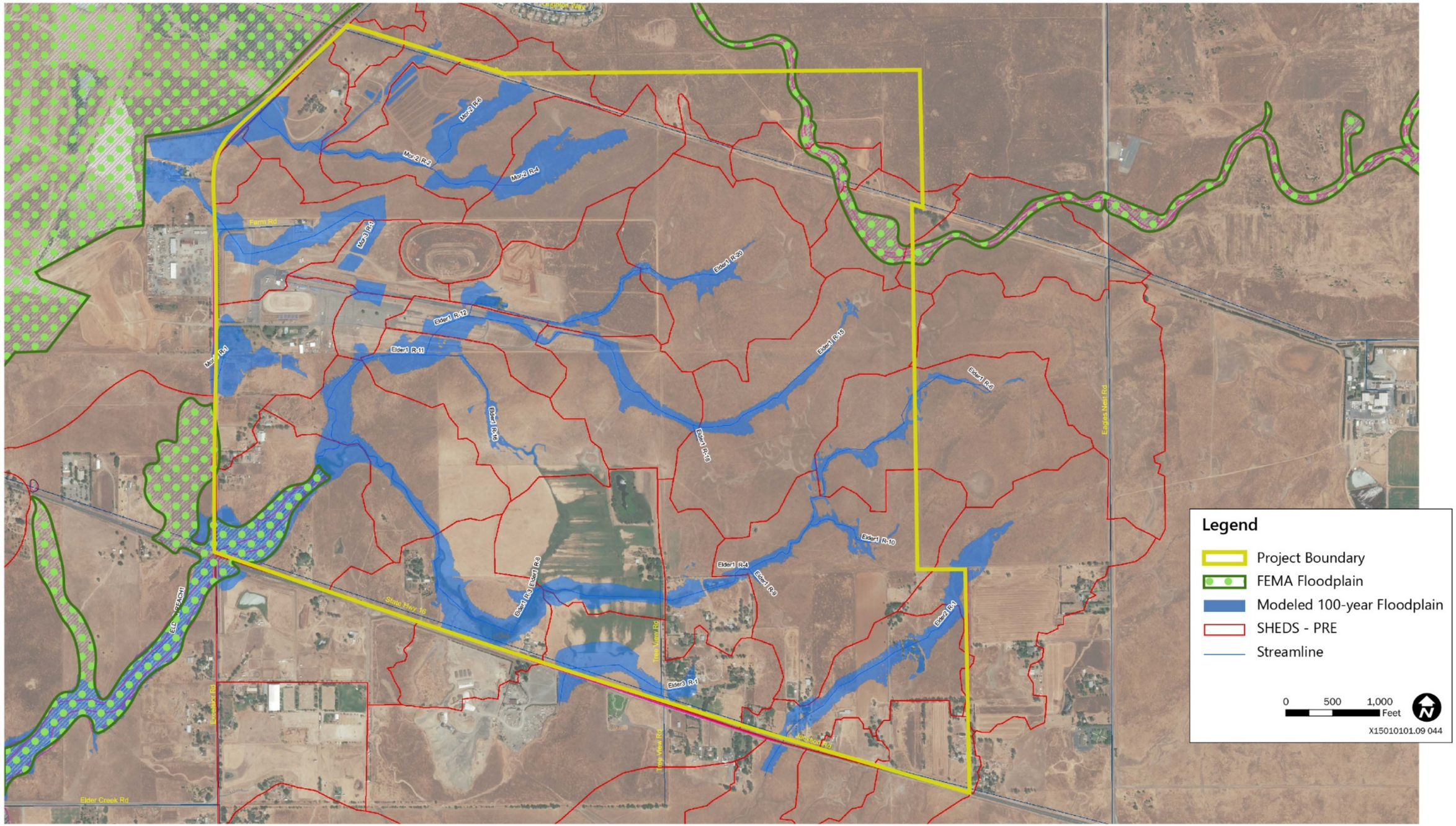
Folsom Dam is approximately 12 miles north of the site and releases water to the American River, which flows east to west north of the Plan Area. Failure of either the Cordova Meadows Levee or the Sunriver Levee along the American River could also potentially result in the inundation of properties north of the Plan Area (Rancho Cordova 2006). However, the Project is outside of both dam and levee inundation areas. Further, projects that improve dam safety and flood damage reduction downstream of Folsom Dam are ongoing through the Folsom Dam Safety and Flood Damage Reduction Project.

CLIMATE CHANGE

As discussed in Chapter 9, “Climate Change,” global average temperatures are anticipated to increase by nearly 3 degrees Fahrenheit by 2040. As temperatures increase, the amount of precipitation falling as rain rather than snow also increases, which could lead to increased flooding because water that would normally be held in the snowpack of the Sierra Nevada and Cascade Range until spring would flow into the Central Valley during winter rainstorm events. This scenario would place more pressure on California’s levee/flood control system (CNRA 2018:190–192).

WATER QUALITY

Surface water quality conditions of the rivers and streams within Sacramento County are affected by natural watershed conditions such as: seasonal weather and temperature patterns; seasonal surface hydrologic runoff and groundwater exchange characteristics of the watershed; runoff or atmospheric deposition of natural chemical or biological matter associated with soil, vegetation, and animal wastes; and long-term climatic patterns (e.g., droughts). The primary sources of potential contaminant discharges associated with human-related activities in the county include urban stormwater runoff, agricultural runoff, and municipal wastewater treatment plant discharges.



Source: Image provided by Au Clair Consulting Inc in 2019. Adapted by Ascent Environmental.

Plate HYD-2: Plan Area FEMA Floodplains

The EPA has identified existing water quality impairment in both Morrison Creek and Elder Creek downstream of the Plan Area. The impaired reach of Morrison Creek runs through the Independence at Mather development roughly 0.3 mile north of the Plan Area. The 2016 Waterbody Report for Morrison Creek identifies the creek as warm freshwater habitat that is impaired by pesticides (diazinon from urban-related runoff and stormwater, and pyrethroids from unknown sources), as well as pentachlorophenol. The State has developed a Total Maximum Daily Load (TMDL) for diazinon. No TMDL data have been recorded by EPA for this waterbody.

The nearest reach of Elder Creek that is listed as impaired under the Clean Water Act (CWA) is approximately 0.7 mile southwest of the intersection of Jackson and Excelsior Roads. The 2016 Waterbody Report for Elder Creek identifies the creek as warm freshwater habitat that is impaired by pesticides (chlorpyrifos and diazinon from urban-related runoff and stormwater and pyrethroids from unknown sources). State TMDLs have been developed for chlorpyrifos and diazinon. No TMDL data have been recorded by EPA for this waterbody.

Regulatory Setting

Federal

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. 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 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.

National Pollutant Discharge Elimination System Permits and Waste Discharge Requirements

Section 402 of the CWA established the National Pollutant Discharge Elimination System (NPDES) permit program to prohibit the unauthorized discharge of pollutants to U.S. waters. The State Water Resources Control Board (SWRCB) has obtained a statewide General Permit (known as the Construction General Permit) for construction that applies to stormwater discharges from sites as small as 1 acre. Construction activities subject to the Construction General Permit include clearing, grading, stockpiling, and excavation. 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.

The General Permits also require permittees to develop a Construction Site Storm Water Runoff Control Program and a Post Construction Storm Water Management Program. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters and consider the use of post construction permanent BMPs that remain in service to protect water quality throughout the life of the project. All NPDES permits also have inspection, monitoring, and reporting requirements.

The County of Sacramento has obtained a Municipal Stormwater NPDES permit from the Central Valley Regional Water Quality Control Board (RWQCB) under the requirements of the CWA to reduce pollutants found in urban stormwater runoff. The program regulates stormwater discharges from municipal separate storm sewer systems (MS4s). 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 designed to reduce stormwater pollution. The CSWMP incorporates all aspects of pollution control, including public awareness and participation, source control, regulatory restrictions, water quality monitoring, and treatment control. Sacramento County must verify compliance with permit requirements by monitoring effluent, maintaining records, and filing periodic reports. This is accomplished by enforcement of the existing County Land Grading and Erosion Control Ordinance.

Federal Emergency Management Agency

In 1968, Congress created the National Flood Insurance Program (NFIP) in response to the rising cost of taxpayer-funded disaster relief for flood victims and the increasing amount of damage caused by floods. FEMA administers the NFIP to provide subsidized flood insurance to communities that comply with FEMA regulations to limit development in floodplains. FEMA also issues Flood Insurance Rate Maps (FIRMs) that identify which land areas are subject to flooding. These maps provide flood information and identify flood hazard zones in the community. FEMA has established a minimum level of flood protection for new development as the 1-in-100 Annual Exceedance Probability (i.e., 100-year flood event). Participants in the NFIP must satisfy certain mandated floodplain management criteria.

State

State Water Resources Control Board

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. 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 project 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. 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 Act

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.

Fish and Game Code Section 1603

Section 1603 of the Fish and Game Code requires applicants to notify the California Department of Fish and Wildlife (CDFW) before beginning a project if the project will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake or use materials from a streambed. Notification is generally required for any project that will take place in the vicinity of a river, stream, or lake. The recommendations of CDFW may include steps to protect water quality.

State Nondegradation Policy

In 1968, the SWRCB adopted a nondegradation policy aimed at maintaining high quality 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 Department of Water Resources (State DWR) 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 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. The Project is not located in an area subject to 200-year urban levels of flood protection (Sacramento County Department of Water Resources 2016).

California Code of Regulations, Title 23

Title 23, Division 1 of the California Code of Regulations sets forth the Central Valley Flood Protection Board's duties pursuant to Sections 8534, 8608, and 8710-8723 of the Water Code. Under these statutes, the Board is required to enforce standards for the construction, maintenance, and protection of adopted flood control plans. The Board's jurisdiction encompasses the entire Central Valley, including all tributaries and distributaries of the Sacramento and San Joaquin Rivers. Section 131 establishes the requirements for vegetation within a flood control channel. Vegetation plantings require the submission of detailed design drawings and a complete vegetative management plan for maintenance to prevent the interference with flood control.

LOCAL

SACRAMENTO COUNTY 2030 GENERAL PLAN

The Agricultural, Conservation, and Safety Elements of the 2030 General Plan contain the following policies that are 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
- 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.

COMMUNITY PLANS

CORDOVA COMMUNITY PLAN

The Cordova Community Plan, which was last updated in 2003, provides guidance for both new development and the redevelopment of existing land uses within the community planning area. Objectives identified in the plan that are applicable to the Project include:

PS-3: Provide adequate drainage and flood protection for all urbanized portions of the community.

VINEYARD COMMUNITY PLAN

The Vineyard Community Plan, which was developed in 1985, provides guidance for growth and development in the community planning area. Policies identified in the plan that are applicable to the Project include:

PF 3. Restrict urban and rural development from encroaching into the 100-year floodplain.

PF 6. All types of urban development proposals must be accompanied by a detailed public services plan and specific timing and funding programs for the implementation and maintenance of services.

SACRAMENTO COUNTY DEPARTMENT OF WATER RESOURCES

The Sacramento County Department of Water Resources (County DWR) maps local 100-year floodplains that may not be identified by FEMA. 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 determine the floodplain elevation on the property, if feasible, or require a drainage study. Floodplains, whether local or FEMA, are regulated by the provisions of the Sacramento County Floodplain Management Ordinance, Improvement Standards, and Local Floodplain Management Plan.

All new developments and drainage improvements within the county are required to follow specific guidelines in design, rehabilitation, and maintenance of drainage facilities and natural waters as set forth by County DWR. The County's 2030 General Plan and Drainage Master Plan Program require that no adverse downstream impact shall occur due to development. This is achieved by ensuring that the proposed improvements result in no water surface increases outside of the project site upstream and downstream, and no peak flow increases downstream. Other elements for consideration revolve around public health and safety issues, maintaining compliance with regulatory agencies, and providing the public with natural-appearing features. Additionally, dual use facilities including parks (active and passive) and trails are encouraged.

SACRAMENTO COUNTY FLOODPLAIN MANAGEMENT ORDINANCE

A Local Floodplain Management Plan is required for a community to participate in the NFIP 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. The Floodplain Management Ordinance specifically describes what types of development activities are allowed and how proposed development may be permitted.

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.

All proposed development activity in floodplains -- those areas designated by FEMA on the FIRMs 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 Stormwater Ordinance

The County has established a Stormwater Ordinance (Sacramento County Code 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.

Sacramento County Grading Ordinance

Sacramento County Code 16.44 (Land Grading and Erosion Control) requires private construction sites disturbing 1 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 Sacramento County Code 16.44 are subject to the Stormwater Ordinance (Sacramento County Code 15.12) described above.

Projects applying for a County grading permit must show proof that a NOI has been filed with the SWRCB 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).

Stormwater Quality Design Manual for the Sacramento Region

The Sacramento Stormwater Quality Partnership, which includes the County of Sacramento and the Cities of Citrus Heights, Elk Grove, Folsom, Galt, Rancho Cordova and Sacramento, has prepared a Stormwater Quality Design Manual for the Sacramento Region (Sacramento Stormwater Quality Design Partnership 2018). This manual is intended to satisfy the regulatory requirements of each jurisdiction's respective municipal stormwater permits. The manual outlines planning tools and requirements to reduce urban runoff pollution to the maximum extent practicable from new development and redevelopment projects.

New development is required to include treatment of urban runoff using the BMPs defined in the Stormwater Quality Design Manual for the Sacramento Region. The BMPs include a number of options for treatment, from simple grassy swales and rain gardens to more complex systems that use cisterns, pumps, and sand filters.

Sacramento Hydrograph Modification Plan

The revised draft *Sacramento County Stormwater Quality Partnerships Hydromodification Management Plan* (HMP) was released in 2013. This plan is not finalized, and acceptance and the timing for final adoption of the HMP by the Central Valley RWQCB is not known. Through the HMP, projects would be required to incorporate LID measures from a menu of improvements based on a credit system.

Significance Criteria

Based on the CEQA Guidelines, hydrology and water quality impacts may be significant if implementation of the Project would result in:

1. A violation of any water quality standard or waste discharge requirement or otherwise substantially degrade surface or groundwater quality;
2. A substantial alteration of the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or offsite (hydromodification);
3. Creation or contribution of runoff water that would provide substantial additional sources of polluted runoff. Changes in water quality would be considered substantial if the Project will would comply with the County NPDES Program, or there is a net increase in any other pollution source associated with an impaired waterway (under Section 303d of the CWA);
4. Substantial increase to the rate or amount of surface runoff in a manner that would result in flooding on- or offsite;
5. Creation or contribution of runoff water that would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or
6. In flood hazard, seiche, or tsunami zones, risk release of pollutants due to project inundation.

Methodology

The following analysis is based on the results of the 2017 Drainage Master Plan (Appendix HYD-1), and Jackson Township: Climate Change Technical Memorandum (CES 2019, Appendix HYD-2) and assumes compliance with applicable regulations and policies. The drainage studies evaluate both full buildout of the drainage improvements and a phased approach in which the drainages on participating properties are constructed initially and the portions of the drainages on non-participating properties are constructed in a later phase. The modeling also evaluated two options for design of the onsite stormwater management system: Option A includes retention ponds on the Morrison Creek drainage; Option B does not. The modeling and analyses also assume LID credit reductions to imperviousness. Sample LID improvements were applied to meet the criteria.

Issues Not Discussed Further

Because of the distance from the nearest open waterbody, the Pacific Ocean (more than 100 miles to the west), and the nearest lake, Folsom Lake (more than 12 miles to the northeast), the Project would not be affected by inundation as a result of seiche or tsunami. Therefore, these phenomena are not considered further in this analysis.

Impacts and Analysis

Impact: Substantial Erosion, Siltation, or Environmental Harm due to Alteration of the Existing Drainage Pattern

Proposed Project

Approximately 450 acres of the Plan Area drains north and/or west as part of the Morrison Creek watershed, while 929 acres drains to Elder Creek. In the post-development condition at buildout, the hydrology of the Project would result in an additional 12 acres of the Plan Area draining to the Morrison Creek watershed via a culvert under Excelsior Road (CES 2017). The Project would reconstruct the main conveyance corridors in both tributaries, through the construction of a flood control channel excavated with sufficient depth and width to contain the 100-year storm event. The channel would also have a low flow channel built within it to contain ordinary flow discharges from nuisance runoff and small storm events. In addition, the Project would protect the adjacent stream corridor by providing a setback and preserving existing riparian habitat consistent with 2030 General Plan Policies CO-114 and CO-118, and protect areas susceptible to erosion, natural water bodies, and natural drainage systems consistent with 2030 General Plan Policy CO-26. The portion of Morrison Creek in the northeast portion of the Plan Area would be within the designated open space, and no modifications to this drainage are proposed.

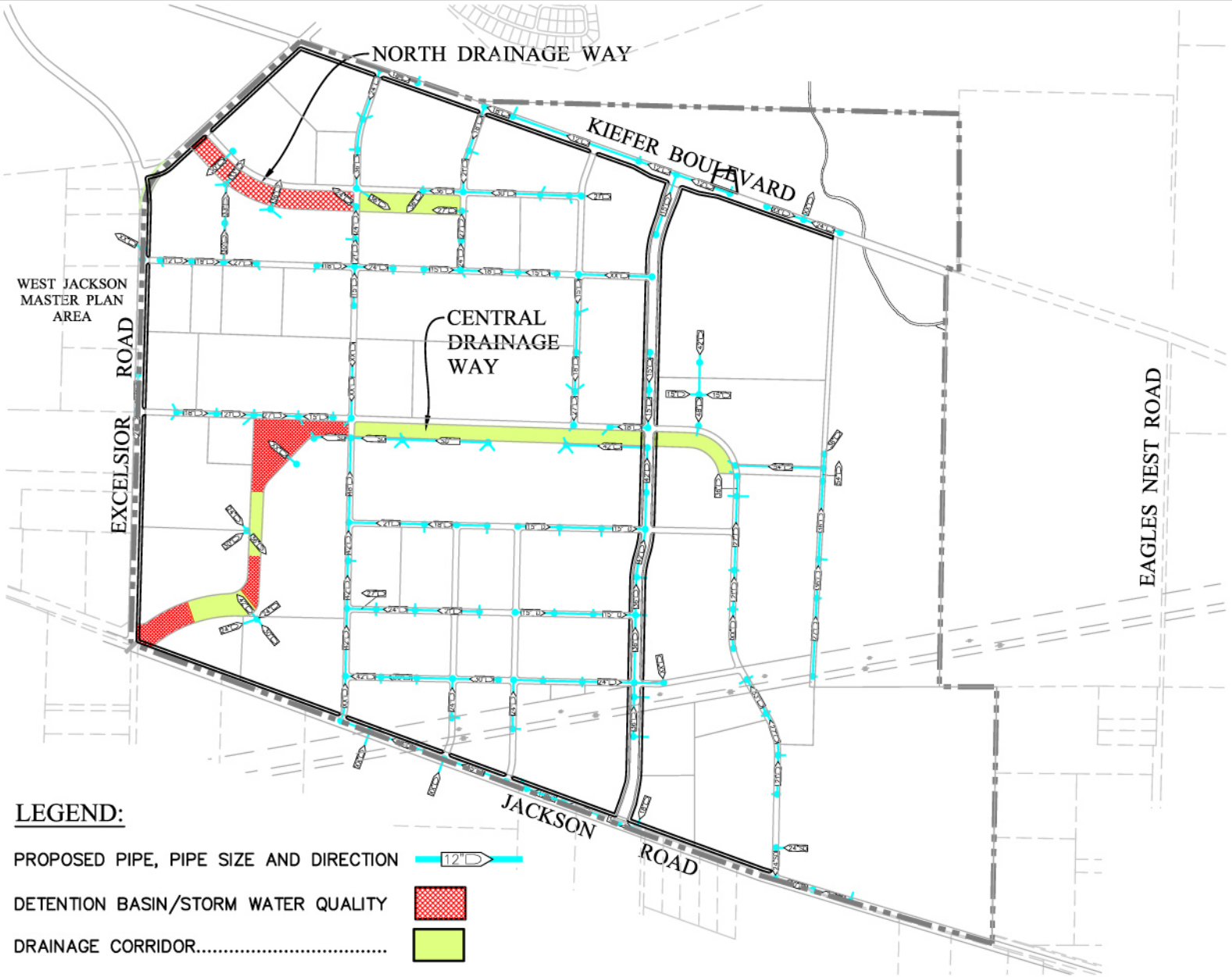
The Project includes several design elements to address the potential to result in erosion, siltation, or other environmental harm caused by the introduction of impervious surfaces and modification of the drainageways within the Plan Area. The revised draft *Sacramento County Stormwater Quality Partnerships Hydromodification Management Plan* dated 2013 was used as the criteria for designing the hydromodification mitigation basins for the onsite 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 by accommodating a volume of water and creating outlet conditions similar to what would be provided under the 2013 draft HMP. It is understood that the final HMP that the County may adopt may differ from the County's 2013 draft HMP. As such, the drainage master plan may need to be updated in the future, before approval of final maps.

Improvements within the Plan Area would be subject to the requirements of the Stormwater Quality Design Manual for the Sacramento Region as a permit condition. These measures, which would be constructed by the Project Applicant or subsequent developers and maintained by the County, would include:

- Low Impact Development Measures. LID measures provide an opportunity at the source for the processes of infiltration and retention to be restored by passing runoff from impervious surfaces over non-impervious ground or storing runoff. The modeling and analyses in the Drainage Master Plan assume sample LID credit reductions to imperviousness to meet the criteria of the Sacramento HMP and the County's MS4 permit. At the time of development, subsequent projects would be required to perform credit system calculations and may elect to incorporate a different set of LID practices that also meet the criteria for each land use (CES 2017).
- Stormwater Detention. Detention basins restore the process of the attenuation of peak flows, which occur naturally in the broad floodplains in the existing condition. Detention would also address the additional attenuation needed to accommodate flows added to the runoff by the proposed impervious surfaces.
- Stormwater Quality Treatment. Stormwater quality treatment basins remove constituents added to the runoff during smaller events, as required by the County's MS4 permit.
- Hydrograph Modification Detention. Hydromodification detention would limit discharge volumes and peak flows during high-frequency events (i.e., events smaller than the 10-year modeled event), so that the geomorphological effects on downstream natural stream corridors are minimized. Increased volumes and peak flows are stored within the detention basins.

Plate HYD-3 illustrates the preliminary drainage system to convey the stormwater runoff generated within the Plan Area. Two constructed drainageways would be provided within the greenbelts to convey the flows from the watersheds to the existing points of discharge. The North Drainage Way (Morrison Creek tributary) would extend through the northwest quadrant of the Project to the discharge point at Excelsior Road. A small tributary shed area north of Kiefer Boulevard would be piped to the North Drainage Way. The Central Drainage Way (Elder Creek tributary) would accept most drainage for the Project. The flows would enter the Project from the east and the drainageway would extend the length of the Project, with the discharge point located at the intersection of Excelsior and Jackson Roads. The Project would also consolidate all four of the existing Excelsior Road crossings into a single outlet with only minor roadside drainage being collected and conveyed at the remaining location. Storm drain pipe systems would be added for minor road runoff collection, as shown in Plate HYD-3.

Generally, drainageways are designed as wide, integrated drainage corridors, with meandering low flow swales to provide conveyance of small storm events, and water quality and detention basins to provide treatment and peak flow attenuation. At-grade, flat benches would be provided on both sides of the channelized drainageway, with a Class I trail along one side, which would also provide access to the drainage facilities for maintenance. The design of the Central Drainage Way varies in width, getting progressively larger in size as it extends from east to west. An illustrative cross section of the North and Central Drainage Ways are shown in Plate HYD-4. The drainage corridors were analyzed in accordance with the County DWR and Central Valley RWQCB standards.



Source: Image prepared and provided by Au Clair Consulting, Inc.

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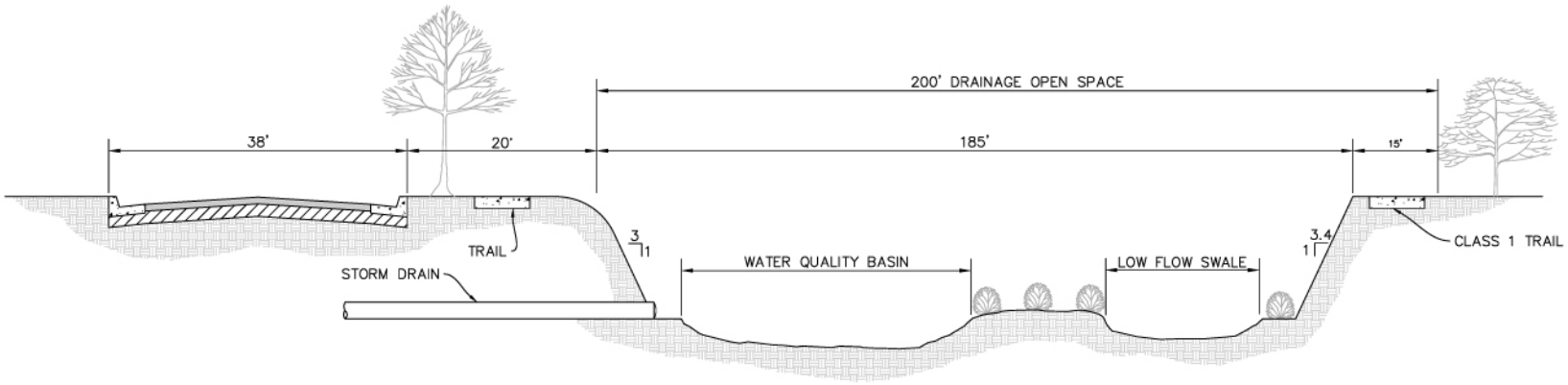
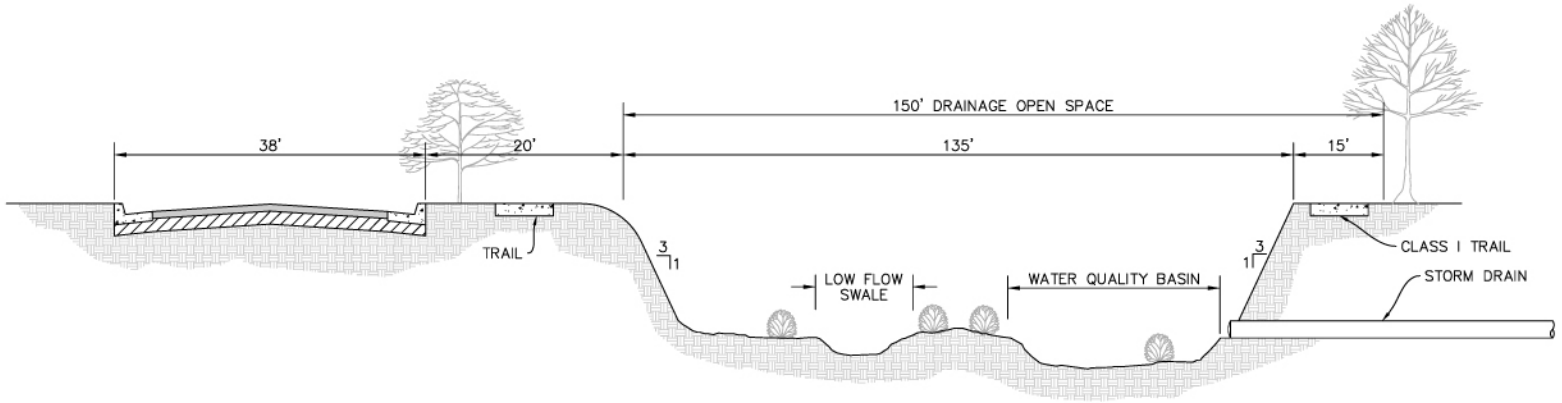
Plate HYD-3: Proposed Drainage Collection System

ASCENT ENVIRONMENTAL



NORTH DRAINAGE WAY

NOT SCALE



Source: Image prepared and provided by Au Clair Consulting, Inc.

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Plate HYD-4: Proposed Drainageway Cross Section

ASCENT ENVIRONMENTAL

Detailed design of the improvements outlined in the Drainage Master Plan has not been conducted. The specific shape and form (geomorphology) of a drainage channel is an important factor in the design of a self-sustaining riparian wetland system. For example, the bottom width of a flood control channel must be wide enough to encompass the proper meander dimensions of the low-flow channel, in order to allow for natural channel migration and thereby avoid problems with stability, sedimentation, and increased maintenance. The geomorphic design of a channel will in turn affect the extent of the floodplain and the variations in hydrologic regime (water levels) throughout the flood corridor. Variations in moisture regime and soil type define various zones within the flood corridor suited to specific vegetation associations; selection of vegetation plantings most suited to each zone's environmental conditions can be made to establish self-sustaining habitat that minimizes maintenance requirements and optimizes water quality treatment benefits. Each of these factors (geomorphology, hydrology, soils, and vegetation associations) must considered when preparing the detailed design plans for the Jackson Township Drainage Master Plan improvements, to ensure that the drainage system will achieve the primary functions of stormwater conveyance and water quality treatment of urban runoff while minimizing maintenance requirements.

ELDER CREEK

The reconstructed channel of Elder Creek would include inline stormwater quality treatment and hydrograph modification attenuation through two detention basins in the southwest portion of the Plan Area. At full buildout, the more upstream basin (Detention 1) would store approximately 47 acre-feet (AF) of water (including approximately 14 AF for stormwater quality treatment and 14 AF for hydrograph modification) and the downstream basin (Detention 2) would store approximately 111 AF (including approximately 7 AF for stormwater quality treatment and 55 AF for hydrograph modification) in the 100-year storm event.

The point of connection for Elder Creek would be at the Jackson Road crossing, and all treatment, hydrograph modification, and stormwater quality treatment would occur within the Project channel upstream of this location. In the pre-project condition, Elder Creek discharges an estimated 439 cubic feet per second (cfs) during the peak 24 hours of a 100-year storm. With full buildout of the Drainage Master Plan, the discharge would be reduced by 3 cfs to 436 cfs during the peak 24 hours of a 100-year storm. If the drainage is phased such that the infrastructure on the participating properties is completed before the remainder of the system, flows would increase 26 cfs to 365 cfs in the short term. Overall, modeling of the proposed channel indicates that post-development peak flow rates would be less than pre-project flows at the Plan Area boundary under 10-year, 100-year, and 200-year events at Project buildout (CES 2017).

MORRISON CREEK

In the Morrison Creek streamshed, the various points of discharge from the Plan Area would be combined; an existing swale would be reconstructed into a channel that would outfall into an existing pond on the aggregate quarry west of the Plan Area.

There are two design options that have been considered for this watershed, one that would include onsite detention (Option A) and one that would not (Option B). If the onsite detention is selected, the combined 100-year floodplain volume in this drainage corridor would be approximately 39 AF (including approximately 7 AF of stormwater treatment volume in a Dry Basin designed to fully discharge retained water between events). Hydrograph modification is not a concern on Morrison Creek because water is held on the quarry property with limited discharge (CES 2017).

Modeling of the proposed modifications indicates that, although the combined discharges to Morrison Creek would decrease with development of the proposed channel, the peak 100-year flow rates and water elevations at the point of discharge (where the swale currently discharges to the quarry) would increase (CES 2017). The combined flow of the four main discharge points on Morrison Creek is estimated to be 196 cfs during the peak 24 hours of a 100-year storm in the pre-project condition. Of this, 109 cfs is attributable to the swale that would be reconstructed. The ultimate, post-project flow would be 184 cfs. Therefore, while overall discharge would decrease by 12 cfs, the flow at the existing outfall would increase by 75 cfs. If drainage improvements are phased, the flow for the first phase would be 78 cfs, which is less than the flow at the existing outfall.

With Option B, which eliminates the detention and stormwater quality improvements, the constructed channel of Morrison Creek would be narrowed and the ability to attenuate peak flows would be reduced; generating larger peak flows. This design option would increase the post-project flow rates for the 100-year event to approximately 500 cfs, an increase of over 300 cfs when compared to the peak 24 hours of a 100-year storm in the pre-project condition for the four Morrison Creek tributaries combined. To accommodate this flow, the proposed culvert under Excelsior Road would need to be increased in size and Excelsior Road would need to be raised. Downstream of the crossing, the existing, offsite channel would need to be reconstructed to accept the higher flow rates. There is a substantial vertical fall between Excelsior Road and the property to the west. If this design option is employed, the channel would likely need to be modified to include drop structures to step the flows down to the quarry bottom (CES 2017). This offsite work would result in the same types of effects as the drainage work within the Plan Area that has been evaluated throughout this EIR, including short-term effects to air quality during construction, construction-generated noise, and potential disruption of roadways and congestion from construction activities. Because the property has been modified through mining, potential effects to several resources, including aesthetics, agricultural, and cultural resources, associated with construction activities would be minimal. Long-term, operational effects to hydrology and biological resources would be a component of the impacts to the Morrison Creek drainage evaluated in this EIR.

CONCLUSION

The Project would increase runoff in the Plan Area because of the introduction of impervious surfaces and would result in the substantial alteration of the surface water drainages in the Plan Area. This would be a **potentially significant** impact. With the implementation of the Drainage Master Plan and associated basins, there would be a quantifiable decrease in overall offsite flows for both Elder Creek and Morrison Creek

and the Project would provide onsite stormwater treatment. In addition, the Project would comply with the County's HMP. These LID techniques would further reduce runoff beyond the modeling for the Drainage Master Plan. The Drainage Master Plan assumed sample LID practices to meet the HMP criteria, based on land use (see Appendix HYD-1). At implementation, the Project Applicant or subsequent developers may elect to use different LID techniques. Mitigation Measure HYD-1a would require evidence that the suite of LID techniques implemented at the project-level meet the HMP criteria and achieve the credits assumed in the modeling.

Implementation of Mitigation Measures HYD-1a and HYD-1b would ensure that the Project would be required to demonstrate that the design features described above would mitigate the development's potential to generate substantial erosion, siltation, or other environmental harm through the proposed drainage modifications. Further, implementation of Mitigation Measure BR-21 described in Chapter 8, "Biological Resources," would require notification of CDFW pursuant to Section 1602 of the Fish and Game Code before engaging activities that would disturb the bed, bank, or associated riparian vegetation of any stream or pond on the Plan Area. Impacts related to hydromodification would be **less than significant with mitigation**.

Alternative 2

The Alternative 2 would include modifications to the existing drainage and overall development of the Plan Area in a manner similar to the Project. The potential modifications to Elder Creek and Morrison Creek drainages, including the design options for Morrison Creek, would be similar to the Project. In addition, Alternative 2 would increase the amount of undeveloped land in the eastern portion of the Plan Area, which could contribute to attenuation of stormwater and a reduction in stormwater flows. Further, the main design features of the Drainage Master Plan that contribute to stormwater quality and hydromodification attenuation are proposed in the western (downstream) portion of the Plan Area and would not be affected. However, because detailed design of the subsequent development that could occur with implementation of Alternative 2 is not available, the effectiveness of future stormwater treatment facilities and drainage improvements cannot be definitively evaluated. Therefore, this impact is **potentially significant**. Mitigation Measures HYD-1a and HYD-1b would require demonstration that the design features described above would mitigate for the development's potential effects on water quality. Impacts under Alternative 2 would be **less than significant with mitigation**.

Mitigation Measures

HYD-1a: Before approval of future tentative maps, the Project Applicant or future developer(s) shall submit a drainage study in accordance with the requirements outlined in the Sacramento Stormwater Quality Partnership's 2018 Stormwater Quality Design Manual (or subsequent updates). The study shall describe permanent stormwater quality treatment facilities capable of treating stormwater to the satisfaction of County DWR.

HYD-1b: Prior to construction of the Jackson Township Drainage Master Plan improvements, detailed plans for the design of the improvements, accompanied by geomorphic, hydrologic, soils, and vegetation analyses that demonstrate the proposed improvements will achieve the primary functions of flood conveyance and stormwater quality treatment while minimizing maintenance requirements, shall be submitted to the County DWR for review and approval.

IMPACT: CONTRIBUTION TO POLLUTED RUNOFF OR VIOLATION OF A WATER QUALITY STANDARD

PROPOSED PROJECT

CONSTRUCTION IMPACTS

Project construction would involve extensive ground-disturbing activities over approximately 1,177 acres (the entire Plan Area, with the exception of the wetland preserve), including grading, trenching, and facility construction activities. Construction is proposed to occur in four phases between 2020 and 2035. The 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 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, as well as wash-water, into the stormwater system. 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 proponents of private construction projects disturbing 1 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 1 or more acres are required to comply with the State's General Stormwater Permit for Construction Activities. The General Permit requires preparation and implementation of a site-specific SWPPP that must always be kept on site for review by the State inspector. Applicable projects applying for a County grading permit must show proof that an NOI has been filed with SWRCB and must submit a copy of the SWPPP.

Depending on scheduling, construction could potentially occur during multiple rainy seasons (October 1 through April 30). Because of the increase in exposed surfaces and the earth-moving activities, the potential for erosion and sedimentation is higher during the rainy season. Therefore, the Project 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. Examples of erosion controls include: stabilized construction entrances, tackified mulch, 3-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: 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 BMPs, construction activities would result in **less-than-significant** impacts.

OPERATIONAL IMPACTS

Development has the potential to increase the pollutant load of stormwater discharges. 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.

There is potential for development of the Plan Area to cause or contribute to a long-term increase in discharges of urban contaminants into the stormwater drainage system compared to existing conditions. In accordance with Central Valley RWQCB compliance guidelines, the Project Applicant would be required to incorporate BMPs and LID stormwater management principles. In accordance with federal, State, and County stormwater management regulations, including 2030 General Plan Policies CO-24, CO-28, and SA-14 discussed above, new construction must maintain pre-project hydrology and incorporate proper pollutant source controls, minimize pollutant exposure outdoors, and treat stormwater runoff through proper BMPs when source control or exposure protection are insufficient for reducing runoff pollutant loads.

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 CWA 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's DWR 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 Drainage Master Plan for the 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. These are the same basins which provide peak storm control, consistent with the design requirements of the *Stormwater Quality Design Manual for the Sacramento Region* (Sacramento Stormwater Quality Design Partnership 2018).

LID measures, such as disconnected roof drains, amended soils, tree planting, and separated pavement areas, would also be required by the County to reduce the amount of stormwater that would runoff from the developed areas by reducing effective imperviousness of the Project, and by promoting infiltration and pre-treatment. At the time of grading applications, individual projects would be required to develop a hydrograph management plan that indicates the LID measures.

A review of the 303(d) list of impaired waterways indicates that Morrison Creek and Elder Creek are listed as impaired (SWRCB 2012). Although the waterways are listed as impaired, development of the Project consistent with NPDES regulations would not cause a net increase of the pollutants for which the waterways are listed.

Compliance with the County Stormwater Ordinance, implementation of LID Standards, and implementation of the Drainage Master Plan would ensure that development of the Project would not alter the course of local waterways in a manner that would 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***.

Alternative 2

Alternative 2 would be required to comply with the same stormwater quality regulations as the Project. Therefore, impacts related to stormwater quality impacts would be **less than significant** for the reasons detailed above for the Project.

Mitigation Measures

No mitigation is required.

IMPACT: INCREASE THE POTENTIAL FOR FLOODING WITHIN THE PLAN AREA

PROPOSED PROJECT

The Drainage Master Plan analyzes the drainage requirements for buildout of the Project at the plan level and evaluates the effectiveness of the proposed drainage facilities to maintain downstream drainage at or below existing conditions. Two constructed drainageways are provided within the greenbelts to convey the flows from the watersheds to the existing points of discharge. Generally, these drainageways are designed as wide, integrated drainage corridors, with meandering low flow swales to provide conveyance of small storm events, and water quality and detention basins to provide treatment and peak flow attenuation. At-grade, flat benches are provided on both sides of the channelized drainageway, with a Class I trail along one side, which also provides access to the drainage facilities for maintenance (see Plate HYD-4). The drainage corridors were analyzed in accordance with the County DWR and the Central Valley RWQCB standards. This analysis indicates that there would not be a potential for onsite flooding outside of the drainage network following Project implementation.

FEMA's FIRM currently shows floodplain the northeast and southwest corners of the Plan Area (see Plate HYD-2). The area in the northeast is associated with Morrison Creek and would be within the designated open space. The FEMA floodplain in the southwestern corner of the Plan Area associated with Elder Creek. With Project implementation, Elder Creek would be channelized in this area with commercial development to the northwest and southeast. Before any proposed improvements within this flood zone, including placement of fill, and before any mapping changes to reflect these hydromodifications, a Conditional Letter of Map Revision (CLOMR) would be obtained from FEMA. A CLOMR is FEMA's comment on a proposed project that would, upon construction, affect the hydrologic or hydraulic characteristics of a flooding source and, thus, result in the modification of the existing regulatory floodway, the effective Base Flood Elevations, or the Special Flood Hazard Area. The letter does not revise an effective map; it indicates whether the project, if built as proposed, would be recognized by FEMA. Building permits cannot be issued based on a CLOMR, because a CLOMR does not change the NFIP map. Once the proposed improvements in the flood zone have been completed, the Project Applicant would request a revision to the FIRM to reflect the completed improvements.

As shown in Plate HYD-2, portions of the existing onsite floodplain are located on non-participating properties within the Plan area. The draft phasing plan provided by the Project Applicant shows Applicant-owned properties in Phases 1A and 1B developing first, with subsequent phases at a later time. Development in Phases 1A and 1B would require construction of drainage improvements in the Elder Creek watershed as described above, which would alter the existing floodplains shown in Plate HYD-2. The Drainage Master Plan analyzed the efficacy of the proposed drainage infrastructure for the entire Project and demonstrated that no flooding impacts would occur with full buildout. However, it remains uncertain at this time whether the drainage infrastructure improvements would be constructed in phases, and whether non-participating property owners would grant permission for improvements on their property. Therefore, impacts associated with flooding are **potentially significant**. Prior to any modifications to the

existing floodplain, approval of a CLOMR from FEMA would be required. In-kind replacement for any loss in flood storage capacity due to floodplain modifications must be provided to prevent downstream flooding impacts consistent with the applicable 2030 General Plan and Community Plan policies listed above. Mitigation Measure HYD-2 would ensure that the Project is implemented according to FEMA requirements and would not result in flooding during phased development or with buildout. Impacts would be **less than significant with mitigation**.

Alternative 2

Alternative 2 would include modifications to the existing drainage and overall development of the Plan Area at a level that is similar to the Project, including the same land use changes in the AE floodplain. The Drainage Master Plan analyzed the efficacy of the proposed drainage infrastructure for and demonstrated that no flooding impacts would occur with full buildout. However, it remains uncertain at this time whether the drainage infrastructure improvements would be constructed in phases, and whether non-participating property owners would grant permission for improvements on their property. Therefore, impacts associated with flooding would be ***potentially significant***. As described in HYD-2, approval of a CLOMR from FEMA would be required prior to any modifications to the existing floodplain. In-kind replacement for any loss in flood storage capacity due to floodplain modifications must be provided to prevent downstream flooding impacts consistent with the applicable 2030 General Plan and Community Plan policies listed above. This impact would be **less than significant with mitigation** for Alternative 2.

Mitigation Measures

HYD-2: Prior to any modification of the existing FEMA mapped floodplain in the Morrison Creek and Elder Creek watersheds in the Plan Area, the Project Applicant shall obtain approval of a Conditional Letter of Map Revision (CLOMR) from FEMA. In addition, the Project Applicant shall provide in-kind replacement for any loss in flood storage capacity resulting from floodplain modifications.

Impact: Contribute to Flooding of Adjacent Parcels

Proposed Project

As discussed above, the modeled discharge from the development indicates that, although overall discharges would increase, the post-development volume of runoff for the peak event (which is most associated with flooding potential) would be at or below the pre-development flow rates for the two streamsheds overall.

There are seven locations where flows in the Elder Creek watershed portion of the Plan area cross Jackson Road, the largest of which crosses the intersection of Jackson and Excelsior Roads. The Project proposes to completely reconstruct Elder Creek within the Plan Area and establish the outfall at the intersection of Jackson Road and Excelsior Road as the point of connection to Elder Creek. Because the peak flow of Elder Creek at

the Jackson Road crossing would decrease at full buildout, the flooding potential of the properties to the southwest may be reduced with the development of the Project.

Flows contributing to the Morrison Creek watershed currently outfall from the Plan Area at six locations. Four locations cross Excelsior Road, one crosses Kiefer Road, and one is located at the northwest corner of the Plan Area near the intersection of Excelsior Road and Kiefer Boulevard. The four locations that cross Excelsior Road feed stormwater into a pond on the property west of Excelsior Road that was created through mining activities and do not currently flow to Morrison Creek. The Project would consolidate all of the existing Excelsior Road crossings into a single outlet that continues to drain to this pond, with only minor roadside drainage being collected and conveyed at the remaining location. Storm drain pipe systems would be added for minor road runoff collection at the northeast corner and the Kiefer Road crossing locations.

There would be a greater volume of discharge during a 100-year rain event at the reconstructed single outlet flowing to the property to the west because all of the former Morrison Creek tributaries would be flowing through it alone, rather than through four separate outlets. However, with the reconstruction of the outlet, the overall peak flow to the pond on the property west of Excelsior Road from all four or the Morrison Creek tributaries that currently feed into the pond would decrease during the peak 100-year 24-hour storm event under both Morrison Creek design options (i.e., with and without onsite attenuation). As a result of the increase at the single outfall, although overall flows would be reduced, the Project Applicant is currently coordinating with the adjacent property owners for the future construction of a channel outfall system.

Because flows to the pond on the adjacent property would actually decrease overall, the impact associated with the potential for offsite flooding is **less than significant**.

Alternative 2

Alternative 2 would also include modifications to the existing drainage and overall development of the Plan Area at a level that is similar to the Project, including the consolidation of Morrison Creek flows. Like the Project, all of the Morrison Creek tributaries would be combined so flows enter the pond on the property to the west via a single outlet. Similarly, due to the consolidation of flows at a single point of connection, flows from that outlet would increase, but overall flows into the pond from the Plan Area would decrease. Like the Project, this impact would be **less than significant**.

Mitigation Measures

None required.

Impact: Contribute to Flooding of Beach Stone Lakes

Proposed Project

The Plan Area is located approximately 16 miles upstream of the BSL area, within the Morrison Creek Stream Group that contributes runoff to the BSL area. As described above, the BSL area is subject to flooding during large rain events and no plans for structural improvement are currently in process to address this deficiency. This is an

existing adverse environmental condition. An assessment of the Project's potential to exacerbate the existing flooding conditions indicates that the Project would result in a minimal increase in floodplain depth (less than 0.5 inch) that could potentially affect a small number of existing structures (12 total) in the BSL area. The *Jackson Township Development: Beach Stone Lakes Area Impact Analysis* (Au Clair 2019) was prepared based on conservative assumptions because it assumed that peak flows from the Plan Area would flow through the system (approximately 16 miles) and would reach Beach Stone Lakes at the same time that peak flows occur in Beach Stone Lakes. This peak flow coincidence is unlikely because of the distance between the Plan Area and the BSL area. The analysis also assumed there would be no potential for volume storage in the downstream creek system (Au Clair 2019). Regardless, because the Project would increase flows that could contribute to an increase in the potential floodplain depth in the BSL area, the Project could have a substantial contribution to flooding of the BSL. This would be a **significant** impact.

The County has adopted and levied the Beach Stone Lake Flood Volume Mitigation Fee to address the contribution of upstream projects to flooding impacts in the BSL area. Development projects in the Morrison Creek Stream Group are required to pay fees that fund the County's efforts in the area. Mitigation Measure HYD-3 requires payment into the County's BSL mitigation fund, which provides financial assistance to the programs the County has in place to reduce the cumulative flooding impact. However, flooding impacts may still occur in the BSL area. Therefore, this impact would be **significant and unavoidable**.

Alternative 2

Alternative 2 would result in a similar amount of impervious surface as the Project. Therefore, flooding effects in the BSL area would be similar. This would be a **significant** impact. Mitigation Measure HYD-3 requires payment into the County's BSL 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 in the BSL area. Therefore, this impact would be **significant and unavoidable.**

Mitigation Measures

HYD-3: The Project Applicant shall mitigate 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: RELEASE OF POLLUTANTS ASSOCIATED WITH FLOODING DUE TO DAM OR LEVEE FAILURE

PROPOSED PROJECT

The closest dam to the Project is Mather Dam, which provides flood control to 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 4 hours. The "dam breach" scenario in the study shows that Zinfandel Drive, which is located along the western edge of the Mather South Community Master Plan Area approximately 0.5 mile to the northeast, 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, and eventually to the portion of Morrison Creek that crosses the Plan Area in the north. As discussed above, the dam was recently renovated. Further, the volume of water that would reach the Plan Area is unlikely to present a substantial risk of inundation that could result in the release of pollutants because of the volume of water stored in the dam, the distance from the Plan Area, and the flat intervening topography over which flood waters would disperse.

Folsom Dam is approximately 12 miles north of the Plan Area. 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 flooding due to dam and/or levee failure that would result in inundation of the Project and could lead to release of pollutants would be a **less-than-significant** impact.

ALTERNATIVE 2

Alternative 2 would occur in the same location as the Project and would have a **less-than-significant** impact associated with the potential for flooding because of dam or levee failure due to recently completed flood protection projects and distance from dams and levees.

MITIGATION MEASURES

No mitigation is required.

IMPACT: POTENTIAL FOR FLOODING DUE TO CLIMATE CHANGE

PROPOSED PROJECT

Although the hydrology analysis contained in the Drainage Master Plan demonstrates that the proposed land uses onsite 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. Nonetheless, it is becoming common practice to consider the potential range of climate change related impacts that could be experienced by a project to the degree they can be reasonably predicted based on factual, scientific information. Consistent with the fundamental purpose of CEQA, this analysis has been prepared to inform County decisionmakers of the range of potential impact scenarios that could occur. However, no County-specific or regional hydrologic climate prediction studies or tools have been developed or otherwise adopted as best practice to evaluate climate change-related hydrologic impacts for local projects. As such, it would be speculative and inappropriate at this time to render specific environmental impact conclusions in this Draft EIR.

While it is uncertain precisely how and to what extent climate change would 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 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. This analysis provides a good-faith effort to inform decisionmakers of the potential range of impacts that could occur related to on- and offsite hydrology as a result of the potential increase in number or frequency rainfall events under a reasonable climate change scenario. There is no generally-accepted study or methodology, nor have the County or State developed any such methodology that describes how to evaluate the hydrologic impacts that would occur in a climate change scenario considering the local hydrologic environment upstream and downstream of the Plan Area. However, because scientific evidence supports that climate change is advancing and that physical changes can be reasonably expected to occur, the Project Applicant has engaged in an evaluation that modeled the potential hydrologic changes that could occur as a result of climate change within and outside of the Plan Area (Appendix HYD-2). This analysis is provided to inform the public and decisionmakers of the potential impacts that could occur. 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. Because the County does not have adopted hydrologic design standards that accommodate the impacts of climate change, assessment of resiliency of the Project design (i.e., 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 technical evaluation of climate change used a “bookend approach,” analyzing low and high scaling factors to determine if Project design changes would be required under a range of potential climate change conditions. The methodology applied climate change scaling factors to the existing-climate discharge frequency curves from Central Valley Flood Protection Plan, based on a technical memorandum summarizing the County DWR findings for several streams in the Sacramento Valley (David Ford Consulting Engineers 2018). The memorandum outlines climate scaling factors that could be applied to various nearby watersheds. The scaling factors were used to adjust the precipitation-depth factors of the modeling, resulting in scaled hydrographs for these hypothetical scenarios.

Of the watersheds for which climate change predictions are available, Arcade Creek and Steelhead Creek are most like Morrison Creek and Elder Creek within the Plan Area because: they are located at similar elevations (less than 200 feet), the watersheds are similarly flat and of similar distance to the foothills, and the watersheds experience similar annual precipitation. Therefore, values for Arcade Creek were used as the low bookend value and are likely to most closely represent what might occur with climate change. Nevertheless, to establish the high end of the expected climate change scaling factors, the Pleasant Grove Creek Canal was modeled. This modeling is conservative because it includes runoff from the foothills, which is not expected to affect the Plan Area. Sacramento County DWR suggested that the differences in scaling factors between these two creeks should provide an adequate range of impacts for analysis (Johnson, pers. comm., 2018 as cited in CES 2019).

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). Because the climate change analysis relies on scaled-up hydrographs which exaggerate flows, the analysis is considered to be conservative.

Under the scenario that uses the flow rate predictions for Arcade Creek, modeling demonstrates that the flood elevation increase would not exceed 0.5 feet in the Project channels or detention basins. Therefore, no changes to the Project design would be required under this climate change scenario. For the flows predicted for the Pleasant Grove Creek Canal, modeling demonstrated that flood elevations would have the potential to exceed the top of the bank of channels with the current project design. Larger and additional culverts at roadway crossings may be required to accommodate additional anticipated flows absent other regional solutions to accommodate increased flows under this scenario.

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. Furthermore, while it is generally understood that precipitation patterns could change in the future due to climate change, the degree and timing of the changes and how those would be effectuated locally remains a point of speculation.

The County has not adopted guidance for evaluation of project effects on flood potential in light of climate change or established a regional solution to addressing flooding because of climate change. Therefore, there is not a clear threshold upon which to measure Project effects. It would be speculative to reach a conclusion regarding the actual degree to which 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 HYD-4.

Alternative 2

Alternative 2 would construct drainage features similar in design capacity to the Project. The resilience of these features to future climate change cannot be determined because the change in precipitation and runoff in the Plan Area is unknown. Using available scaling tools, however, the potential for an effect has been identified. Mitigation Measure HYD-4 would require application of the best available guidance at the time of implementation, at which time the analysis may be less speculative.

Mitigation Measures

HYD-4: 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 larger and additional culverts at roadway crossings and 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.

15 LAND USE, POPULATION, AND HOUSING

INTRODUCTION

The following chapter addresses potential physical environmental impacts related to land use and land use policy. Areas of analysis include compatibility of the Project and Alternative 2 with adopted Sacramento County General Plan (2030 General Plan) policies and other local land use plans, division or disruption of an established neighborhood, and the displacement of housing.

Comments on land use were provided in response to the NOP. Comment topics include use of planning documents associated with Mather Airport, potential for conflict with use of non-participating properties during early phases of development, and the Project's consistency with the assumptions in the 2030 General Plan. These concerns are addressed below and in other resource chapters, as appropriate. Land use planning and consistency with the Comprehensive Land Use Plan and Airport Planning Policy Area for Mather Airport is discussed in Chapter 7, "Airport Compatibility." For a discussion of potential for the Project to induce growth, refer to Chapter 22, "Additional Analysis."

ENVIRONMENTAL SETTING

The Plan Area is located in an unincorporated area south and west of the City of Rancho Cordova, east of the City of Sacramento, and north of the City of Elk Grove. The Plan Area is also southeast of, but not directly adjacent to, Mather Airport. The Plan Area is bound by Excelsior Road to the west and Jackson Road (also referred to as Jackson Highway) to the south. The eastern boundary follows parcel lines roughly 0.5 mile west of Eagles Nest Road. The northern boundary runs partially along Kiefer Boulevard and along the northern boundary of two parcels north of the road (see Plate PD-2 in Chapter 2, "Project Description"). The Plan Area is located outside, but immediately adjacent to, the existing Urban Policy Area (UPA) and is within the Urban Services Boundary (USB).

Surrounding land uses are primarily rural residential development and limited agricultural use (predominantly grazing). To the west of the Plan Area, land uses are characterized by agriculture, mining activities, and commercial sales of landscaping materials. Lands to the east are generally similar to the Plan Area, with grazing and agricultural-residential uses predominating. The property to the east also includes the Sacramento Rendering Company plant, a facility that accepts animal tissue, processes it, and then distributes the byproduct for use in the manufacture of other goods. Land to the north is dominated by the presence of Mather Airport and appurtenant facilities, and includes the Independence at Mather residential subdivision, as well as a 1,382-acre wetland and nature preserve known as the Illa M. Collin Preserve. Mather Golf Course is located further to the northeast. Properties to the south of the Plan Area, on the opposite side of Jackson Highway, are generally in agricultural or agricultural-residential use or are within a wetland preserve.

As shown in Plate PD-4 in Chapter 2, “Project Description,” the Plan Area is largely undeveloped. Most of the Plan Area is grassland with interspersed wetlands; portions of which have historically been disturbed by agricultural activities. Current land uses on the properties within the Plan Area are predominantly grazing, small ranches, and agricultural-residential homes. A portion of the Plan Area includes the Sacramento Raceway, an unpermitted facility that hosts regular stock car and drag racing events several times a month throughout the year.

Existing Land Use Designations and Zoning

The Plan Area is currently designated as Extensive Agriculture, General Agriculture (minimum parcel sizes of 20 acres), and a small area of Agricultural-Urban Reserve on the Sacramento General Plan Land Use Diagram (see Plate PD-5 in Chapter 2, “Project Description”). At the community plan level, the parcels located north of the Kiefer Boulevard alignment are designated Industrial Reserve and Light Industrial in the Cordova Community Plan, and the remainder of the Plan Area is designated as Permanent Agricultural (minimum parcel sizes of 80 acres) and Light Industrial in the Vineyard Community Plan (see Plate PD-6 in Chapter 2, “Project Description”).

The Plan Area is zoned Light Industrial (M-1), Agricultural 80 (AG-80), and Interim Agricultural Reserve (IR) (see Plate PD-7 in Chapter 2, “Project Description”). Interim zones were established by the County as temporary zones designed to protect public health, safety, and welfare with the intent that the Board of Supervisors would rezone each property to one of the permanent land use zones as community plans were adopted. In addition, portions of the Plan Area are located within two combining zoning districts: Flood and Surface Mining. Combining zoning districts are established to promote orderly development, avoid incompatible land uses, preserve and protect areas of the County with unique characteristics, and provide greater flexibility in design than under the regular zoning districts. The regulations of the base zoning district generally apply; however, additional standards and rules of the combining zoning district may either add to or modify those regulations.

The Flood Combining Zoning District is intended to include all land covered by rivers, creeks, and streams, as well as land subject to flooding. The Zoning Code (Section 4.2.5.A.) provides development standards that apply to the construction of structures within the floodplains of designated tributaries. Any new lot that is proposed adjacent to a designated tributary must provide either a buildable area outside the 100-year floodplain, or a buildable area located at least 25 feet from the center line of the tributary that provides for the construction of a habitable floor area that is at least 1.5 feet above the water surface elevation of the 100-year floodplain or at or above the 200-year floodplain in areas subject to the Urban Level of Flood Protection. For further discussion of flooding, refer to Chapter 14, “Hydrology, Drainage, and Water Quality.”

The Surface Mining Combining Zoning District is designed to protect mineral resources in the County from incompatible uses, manage mineral resources, ensure access to the resources, and provide for the restoration of mined lands. Mining operations can be permitted within this district, subject to approval of a conditional use permit and reclamation plan. For further discussion of mineral resources, refer to Chapter 12, “Geology, Soils, and Mineral Resources.”

REGULATORY SETTING

FEDERAL

There are no federal regulations that apply to the evaluation of effects related to land use.

STATE

CORTESE-KNOX-HERTZBERG LOCAL GOVERNMENT REORGANIZATION ACT

The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 establishes procedures for local government changes of organization, including annexations to a special district.

CALIFORNIA GOVERNMENT CODE

Preparation of a specific plan is authorized by Section 65450 et seq. of the Government Code. Government Code Section 65451 mandates that a specific plan include text and diagram(s) that include the following in detail:

(1) The distribution, location, and extent of the uses of land, including open space, within the area covered by the plan.

(2) The proposed distribution, location, and extent and intensity of major components of public and private transportation, sewage, water, drainage, solid waste disposal, energy, and other essential facilities proposed to be located within the area covered by the plan and needed to support the land uses described in the plan.

(3) Standards and criteria by which development will proceed, and standards for the conservation, development, and utilization of natural resources, where applicable.

(4) A program of implementation measures including regulations, programs, public works projects and financing measures necessary to carry out paragraphs (1), (2), and (3).

The specific plan must also contain a statement of relationship of the specific plan to the General Plan.

LOCAL

SACRAMENTO COUNTY 2030 GENERAL PLAN

The 2030 General Plan provides an inventory of land supply within the County, and projects the amount and location of land and development that will be required to accommodate future populations and economic growth through 2030 (Sacramento County 2011). Land use policies associated with airport land use compatibility are address in Chapter 7, Airport Compatibility. For the purpose of land use analysis of the Project, the following General Plan policies have been separated into two distinct categories: policies that intend to avoid or minimize environmental effects and growth management policies. Additional land use policies that are not directly related to

mitigating environmental effects will be analyzed as part of the Office of Planning and Environmental Review's (PER's) recommendation on the Project.

POLICIES THAT AVOID OR MITIGATE ENVIRONMENTAL EFFECTS

The following land use policies from the 2030 General Plan are intended to avoid or mitigate an environmental effect and would apply 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 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).

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.

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.

GROWTH MANAGEMENT POLICIES: URBAN POLICY AREA AND URBAN SERVICE BOUNDARY

Urbanization in the unincorporated County is largely shaped by the UPA and USB. The UPA for Sacramento County was established in 1993 and is maintained pursuant to Policy LU-1 of the 2030 General Plan. The UPA identifies the area in the County that is capable of providing a 20-year supply of developable land sufficient to accommodate projected growth. The intent of the UPA is to direct growth in a logical manner and to identify areas where infrastructure requiring large capital investments will be needed in the near future.

The USB was established in 1993 and is maintained pursuant to Policy LU-2 of the 2030 General Plan. The USB indicates the ultimate boundary of the urban area in the unincorporated County (beyond 25 years). It is intended to be a permanent growth boundary not subject to modification except under extraordinary circumstances. Sacramento General Plan Policy LU-1 restricts provision of urban services beyond the UPA, except when the County determines it is necessary for health and safety purposes or unless consistent with the project-specific provisions in Policy LU-1.1. The USB is intended for use by urban infrastructure providers in developing very long-range master plans that can be implemented as the urbanized area expands over time.

According to the 2030 General Plan, the UPA and USB are the backbone of Sacramento County's urban planning philosophy. These growth boundaries are intended to protect the county's natural resources from urban encroachment, as well as to limit costly sprawling development patterns. While the USB is intended to be a permanent boundary, the UPA is adjusted incrementally as needed to ensure that the County can accommodate anticipated growth over the next 25-year planning cycle. The area between the two lines is reserved for future urbanization and is only to be developed when lands within the existing UPA can no longer accommodate projected growth or the project meets expansion criteria pursuant to Policy LU-120.

The following 2030 General Plan policies are intended to manage growth within the unincorporated County and apply to the Project:

LU-1. The County shall not provide urban services beyond the Urban Policy Area, except when the County determines the need for health and safety purposes and the extension provisions as provided in Policy LU-1.1.

LU-3. It is the intent of the County to focus investment of public resources on revitalization efforts within existing communities, especially within commercial corridors, while also allowing planning and development to occur within strategic new growth areas.

LU-113. The County shall work with SACOG to support implementation of Blueprint's policies and land use objectives.

LU-119. The County shall only accept applications to expand the UPA or initiate an expansion of the UPA or any Master Plan processes outside of the existing UPA if the Board finds that the proposal meets the following:

- *Parallel processes to expand UPA and prepare Master Plans:* Proposed additions to the UPA will only be considered when accompanied by a request to initiate a Master Plan process for all land encompassed by the proposed UPA expansion boundary. Likewise, requests to initiate a Master Plan process outside the UPA will only be considered when accompanied by a request to expand the UPA to include all land encompassed by the proposed Master Plan.[1]
- *Project Justification Statement and Outreach Plan:* Proposed UPA expansions/Master Plan processes must be accompanied by both a "Justification Statement" and an "Outreach Plan." The Justification Statement shall be a comprehensive explanation of the proposed request and the development it would allow. It must include background information, reasoning, and the goal(s) and benefits of the proposed project. The Outreach Plan shall describe how the project proponent plans to inform and engage neighbors and members of the general public about the proposed UPA expansion and project.
- *Proximity to existing urbanized areas:* Proposed UPA expansions/Master Plan processes must have significant borders that are adjacent to the existing UPA or a city boundary. As a guideline, "significant borders" generally means that the length of the boundary between the existing UPA or city boundary and the proposed UPA expansion/Master Plan should be 25 percent of the length of the boundary of the UPA expansion area.
- *Logical, comprehensive, and cohesive planning boundaries:* Proposed UPA expansions/Master Plan processes must consist of a contiguous set of parcels that have a regular outside boundary consistent with the logical planning boundary illustrations below. All parcels within this boundary must be included in both the proposed UPA expansion and proposed Master Plan area.

[1] A "Master Plan" is defined as a plan that meets the requirements and intent of the Specific Plan statutes contained in Government Code §65450-65457, which requires a land use plan, a circulation plan, an infrastructure plan, and implementation measures. The requirement for a "Master Plan" might be fulfilled by a variety of planning tools, including a Specific Plan, a Community Plan, a Special Planning Area, a development agreement, or any combination thereof.

LU-120. The County shall only consider approval of a proposed UPA expansion and/or Master Plan outside of the existing UPA if the Board finds that the proposed project is planned and will be built in a manner that:[2]

- meets all of the requirements per PC-1 through PC-10, and;
- meets ONE of two alternative performance metrics:
  - Alternative #1- Criteria-Based
  - Alternative #2 - VMT/ Greenhouse Gas Emissions Reduction Metric

PC-1. Vision for connection to other adjacent existing and potential future development areas.

Required: Include a vision of how the development will connect to other adjacent existing and potential future development areas within the USB, including how roadways, transit, sewer, and water could occur within all adjacent areas.

PC-2. Housing choice.

Required: A variety of housing types and densities, including single-family homes, duplexes, triplexes, accessory dwelling units, townhomes, condominiums, apartments and similar multi-family units, in a variety of settings including both residential neighborhoods and mixed use nodes.

PC-3. Quality.

Required: Design guidelines, development standards and/or similar assurances that will require high-quality development consistent with the vision set forth in the Master Plan.

Discussion: The County's General Plan contains numerous policies that address quality of new development, but does not provide specific details regarding how a particular Master Plan will be planned and built to ensure that quality is achieved. Conversely, many of the County's tools used implement the General Plan (such as zoning) provide specific details about how land can be used and developed, but do not necessarily address quality. The Master Plan is the bridge between the broad-based General Plan and fine-grained implementation tools like zoning, making it the ideal context to address the quality of development expected within its boundaries.

Master Plan's should provide specific details regarding the quality envisioned for the project and appropriate standards to ensure that it will be built out over time in a manner that achieves the stated vision. Detailed design guidelines and firm development standards can be excellent tools for creating certainty that quality will be achieved. Elements of quality to be addressed may include:

[2] Some areas within a Master Plan may have existing uses that are not likely to change and are appropriate to remain. If the Master Plan designates such areas with a land use category that reflects that existing use, the Board may exclude these areas for purposes of determining consistency with these criteria.

- Building form, including architectural styling, materials, articulation, orientation, size, massing, etc.
- "Theming" at the neighborhood or community level, including consistent signage, materials, landscaping, and other elements
- Amenities provided beyond those required by law
- The public realm
- Relationship between uses

PC-4. Accommodate the percentage of low and very low income residential units required by state law per the County's current Housing Element based on the Regional Housing Needs Allocation (RHNA).

Required: Accommodate ≥90 percent of the obligation per RHNA (currently ~33% of units accommodated in RD-20 or higher).

Discussion: State law (California Government Code Section 65583) requires cities and counties to provide "adequate" sites with appropriate zoning, development standards, infrastructure, and public services to facilitate and encourage the development of a variety of types of housing for all income levels.

State law requires SACOG to periodically adopt a Regional Housing Needs Plan (RHNA) for the six-County region. The RHNA determines each jurisdiction's "fair share" of the region's housing needs per a methodology established by state law and approved by the California Department of Housing and Community Development (HCD). The purpose of this is to avoid over-concentration of low-income households in any one community.

As part of periodic Housing Element updates required by state law, the County must create a land inventory that identifies vacant and underutilized land available for residential development within the unincorporated area. This land inventory is used to demonstrate how the County can accommodate its "fair share" of the region's housing needs as determined by the RHNA, including how it will provide adequate sites for low and very low households. Currently, 37 percent of the units allocated to the County per the RHNA are for low and very low households and must be accommodated on land zoned for 20 dwelling units per net acre (RD-20) or greater.

Requiring Master Plans to be consistent with this criterion ensures that they are contributing their "fair share" of adequate sites toward the County's overall obligation per state law. It represents the "break even" point where the County's ability to meet state law neither helped nor hurt by adoption of the Master Plan. If numerous Master Plans were adopted with a considerably lower percentage of its units accommodated on land zoned RD-20 or greater, the County could fall short of adequate sites over time and be forced again to rezone properties in existing communities or planned growth areas, or face other negative consequences such as a moratorium on issuing building permits.

PC-5. Pedestrian- and transit-oriented design.

Required: Pedestrian- and transit-oriented design, including:

- Sidewalks and bike routes along interconnected streets with short block lengths and a high intersection density.
- Prominent pedestrian and bicycle network.
- Few if any cul-de-sacs.
- Pedestrian and bike connections at the ends of all cul-de-sacs unless infeasible due to topography or similar impediments inherent in the project site.

PC-6. Infrastructure Master Plan And Financing Plan

Required: Inclusion of an Infrastructure Master Plan and Financing Plan that include the following:

- The Infrastructure Master Plan shall identify required public facilities and infrastructure (including roads, transit, water, sewer, storm drainage, schools, fire, park, library, and other needed community facilities) and associated costs for the development of the proposed UPA expansion/Master Plan;
- The Financing Plan shall:
  - Include a infrastructure phasing analysis that examines development through buildout taking into consideration potential development activities, facilities requirements and constraints;
  - Identify the phase or timing for when the facilities are needed;
  - Identify the funding mechanisms proposed to pay for the identified infrastructure and facilities;
  - Demonstrate that infrastructure requirements and the associated costs are reasonably balanced throughout each development phase and outline solutions for any potential constraints and/or shortfalls for any given phase.

PC-7. Services Plan

Required: Inclusion of a Services Plan to demonstrate:

- that provision of services to the proposed UPA expansion/Master Plan are cost-neutral to the County's General Fund and existing ratepayers;
- that the operations and maintenance costs stemmed from the required public facilities and infrastructure for the development of the proposed UPA expansion/Master Plan are cost-neutral to the County's General Fund and existing ratepayers, and;
- that existing levels of municipal services will not be negatively impacted by approval and buildout of the proposed UPA expansion/Master Plan.

PC-8. Consistency with County-adopted plans.

Required: Consistency with all applicable County adopted plans not sought to be amended by the proposed project.

PC-9. Consideration of regional planning efforts.

Required: Inclusion of a discussion/analysis of how the proposed UPA expansion/Master Plan relates to broad-based and regional planning efforts, such as SACOG's adopted Blueprint Vision and Metropolitan Transportation Plan, Sacramento County's Visioning documents created for the Jackson Highway and Grant Line East Areas, any applicable Habitat Conservation Plan(s), the Sacramento Metropolitan Air Quality Management District's State Implementation Plan, and Regional Transit's Master Plan.

PC-10. Consideration of jobs-housing balance.

Required: Inclusion of a discussion/analysis of the proposed UPA expansion/Master Plan's jobs-housing balance. Master Plans should provide an internal jobs-housing balance and/or improve the jobs housing balance within the project's vicinity.

Alternative #1 – Criteria-Based

To satisfy this alternative, the Board must find that the proposed project is planned and will be built in a manner that:

- meets all of the requirements per the criteria below, and;
- qualifies for a minimum of 18 points (out of a possible 24) per the criteria below

CB-1. Minimum net density.

Required: Minimum density of at least 7 dwelling units per net acre if using "double net" methodology or 9.3 dwelling units per acre if using "triple net" methodology.

Points:

≥8 dwelling units per acre if using "double net" methodology, or ≥10.6 dwelling units per acre if using "triple net" methodology.	3 points
≥9 dwelling units per net acre if using "double net" methodology, or ≥12 dwelling units per acre if using "triple net" methodology.	4 points
≥10 dwelling units per net acre if using "double net" methodology, or ≥13.3 dwelling units per acre if using "triple net" methodology.	5 points

Discussion and definitions:

Double net density methodology: Double net density shall be calculated by considering land area dedicated exclusively to residential and mixed-use residential areas, **including** land for streets and alleys internal to the residential and mixed use residential areas. All other lands are excluded from this calculation, including streets not internal to the residential or mixed use areas, parks, schools, detention basins, other infrastructure, and services needed to support the development, and non-residential uses such as commercial areas, offices, and open space. This methodology shall be used if the Master Plan does not contain details regarding the location, size and extent of streets internal to residential and mixed use areas. A graphic representation of this methodology is provided below, with blue shading representing the residential and mixed use areas included in the calculation.

Triple net density methodology: Triple net density shall be calculated by considering land area dedicated exclusively to residential and mixed-use residential areas, **excluding** land for streets and alleys internal to the residential and mixed use residential areas. All other lands are excluded from this calculation, including streets not internal to the residential or mixed use areas, parks, schools, detention basins, other infrastructure, and services needed to support the development, and non-residential uses such as commercial areas, offices, and open space. This methodology may only be used if the Master Plan contains sufficient details regarding the location, size and extent of streets internal to residential and mixed use areas. A graphic representation of this methodology is provided below, with blue shading representing the residential and mixed use areas included in the calculation.

Allowable deviations from density calculations: Certain lands may be excluded from the density calculation to allow for larger lot residential development and/or a transitional zone between urban uses within the USB and rural uses beyond, including:

- Land within ¼ mile of the USB, OR;
- Up to 10 % of the net residential acreage.

Definition of "dwelling units": Dwelling units shall include single family homes, duplex and triplex units, condominium units, townhomes, apartment and multiple-family units, and residential units in mixed use buildings. Residential units in congregate care facilities and in the residential portion of a university may be counted when calculating a master plan's overall density if the County finds that the Master Plan includes assurances that these units will be built. Each planned accessory unit that is allowed "by right" per the Master Plan's design guidelines, development standards and zoning will be counted as ½ a dwelling unit. If the County finds that the Master Plan includes assurances that planned accessory dwelling units will be built to habitable standards and rented or sold to people outside the family resident in the primary unit, they will be counted as one dwelling unit. Hotel rooms and other similar transient housing will not be considered as dwelling units.

CB-2. Proximity of residential units to amenities.

Required: ≥80 percent of all residential units located within one mile of at least three of the following existing or planned amenity categories:

- Public elementary, middle, or high school
- Park or recreational facility
- Grocery store, drug store or commercial center
- Office or industrial employment center
- Civic use (e.g. library, post office, community garden, urban farm)
- Preschool, childcare or senior care facility
- Medical offices or facilities

Points:

≥**85** percent of all units located within one mile of at least three of the amenity categories	2 points
≥**90** percent of all units located within one mile of at least three of the amenity categories	3 points
≥**90** percent of all units located within one mile of at least **four** of the amenity categories	4 points

CB-3. Mixed use.

Required: Include a mixed use designation, overlay, and/or zoning category that allows vertical mixed use by right, provides uninterrupted pedestrian connections, and prohibit barriers between different uses.

Points:

At least 5 percent of a Master Plan's developable land zoned for mixed use (horizontal or vertical).	2 points
At least 10 percent of a Master Plan's developable	3 points

land zoned for mixed use (horizontal or vertical).	
At least 15 percent of a Master Plan's developable land zoned for mixed use (horizontal or vertical) or assurances that at least 5 percent of the residential units will be located and built within vertically integrated mixed-use buildings.	4 points

Discussion: Mixed use shall be defined as "residential uses and at least one or more different use integrated vertically and/or horizontally in conformance with a coherent plan with significant functional, aesthetic, and physical integration of project components including, but not limited to, pedestrian and vehicle circulation, jointly accessible common areas and shared parking, and shared architectural, landscaping, lighting and signage themes." Mixed use zoning shall allow vertical mixed use by right, provide uninterrupted pedestrian connections, and prohibit barriers between different uses.

CB-4. Transit.

Required: ≥65 percent of all residential units located within ½ mile of existing or planned transit service, which consists of light rail, streetcars, buses, vanpools and/or shuttles that connects with regional public transit service.

Points:

Proximity

≥70 percent of residential units located within ½ mile of existing or planned transit service	2 points
≥75 percent of residential units located within ½ mile of existing or planned transit service	3 points
≥80 percent of residential units located within ½ mile of existing or planned transit service	4 points

Headways

Transit service with headways of 60 minutes or less during peak hours (Monday through Friday from 7-9 a.m. and 4-6 p.m.)	1 points
Transit service with headways of 30 minutes or less during peak hours (Monday through Friday from 7-9 a.m. and 4-6 p.m.)	2 points
Transit service with headways of 15 minutes or less during peak hours (Monday through Friday from 7-9 a.m. and 4-6 p.m.)	3 points

Discussion: "Planned transit service" shall be defined as service identified in SACOG's Metropolitan Transportation Plan (MTP), Regional Transit's (RT) Short Range Transit Plan (SRTP), and/or service to be provided as part of the Master Plan and funded via a secure financial mechanism (example: CSA 10; North Natomas TMA/developer fees). The MTP has a 20+ year planning horizon and is updated every four years; the SRTP has a 10-year planning

horizon and is updated every year. Both the MTP and SRTP must be "financially constrained" in that only those transportation projects and programs for which funding is reasonably expected to be available may be included in the plan. Therefore, there is a high likelihood that transit service identified in these plans will ultimately be provided. Service to be provided as part of a Master Plan and funded via a secure financial mechanism would provide similar assurances that identified service will ultimately be provided.

In contrast, transit service envisioned in RT's long-range TransitAction Plan cannot be implemented until a significant new revenue source is secured, making such service far more speculative. For example, a new ½ cent sales tax increase would only partially fund transit service envisioned in the TransitAction Plan. Therefore, service(s) identified in the TransitAction Plan and similar visioning documents will not be considered "planned transit service" for purposes of determining consistency with this criterion.

CB-5. Proximity to employment.

Required: Analysis of existing employment/jobs within a five mile radius of the proposed UPA expansion/Master Plan boundary.

Points:

<50,000 existing employees/jobs within a 5 mile radius of the proposed project	2 points
Between 50,000-100,000 existing employees/jobs within a 5 mile radius of the proposed project	3 points
>100,000 existing employees/jobs within a 5 mile radius of the proposed project	4 points

Alternative #2 – Vehicle Miles Travelled (VMT)/Greenhouse Gas (GHG) Emission Metrics

To satisfy this alternative, the Board must find that the proposed project is planned and will be built in a manner that results in:

- ≤14 vehicle miles travelled (VMT) per resident per day (or the equivalent VMT per *household* per day);

OR

- ≤Equivalent GHG per capita per day from cars, light trucks, and medium trucks (less than 8,500 Gross Vehicle Weight).

Discussion: While consistency with the criteria in Alternative #1 provides a level of certainty that a proposed project will achieve particular outcomes, *measuring* the actual projected outcome(s) of the project is a viable alternative. These projected outcomes can be compared against pre-defined metrics to determine the project's "performance." VMT and greenhouse gas (GHG) emissions are logical metrics because a project's performance in these areas is directly correlated to the project's ability to achieve the same goals and mandates (relative to air quality, transportation, land use, infrastructure, and GHG

emissions) as the criteria in Alternative #1. Additionally, VMT and GHG are very closely related; the mix of vehicles that residents use for their daily travel has a relatively narrow range of GHG emissions per mile traveled. Given the direct correlation between improved VMT and associated reductions in GHG emissions, this alternative directly addresses goals and mandates relative to recent state laws aimed at reducing GHG emissions, including AB 32, SB 375 and SB 97.

VMT is easily measured using standard travel demand analysis methods. Multiple traffic models exist for conducting such analysis. Given the long-range nature of the General Plan and the ever-evolving nature of traffic models, it does not make sense to require use of a specific model to determine compliance with this alternative. However, to ensure that a credible model is employed, the project proponent and County staff (including SACDOT, Planning and Environmental Review, etc.) will discuss the merits of available models and determine which will be used to determine compliance with this alternative prior to starting the analysis.

The 14 VMT per capita can be translated into a 13 lbs. of GHG per capita by using the same assumptions that SACOG is required to use for calculating SB375 GHG targets. These assumptions are that this travel will use cars, light trucks, and medium trucks (less than 8,500 Gross Vehicle Weight), and that vehicle and fuel improvements are not included. If the technology improvements are included (fuel economy increases and a 10 percent reduction in the carbon content of gasoline), then the GHG metric would be 8 lbs. of GHG per capita.

COMMUNITY PLANS

Sacramento County is divided into distinct community areas for planning purposes. These community planning areas encompass socially and economically similar areas with an established sense of community identity. The Plan Area is primarily within the Vineyard Community Plan Area, although the northeast corner of the Plan Area is within the Cordova Community Plan Area (see Plate PD-6 in Chapter 2, “Project Description”).

Community Plan policies, in conjunction with the Community Plan Land Use Plan, are intended to be a comprehensive guide for the physical development of a community on a more detailed basis than the general plan. The Land Use Plan delineates the location, density, and intensity of housing, commercial, industrial, public facilities, and open space. The plan may provide implementation strategies for such topics as land use, transportation, urban design, parks, school facilities, and public services.

CORDOVA COMMUNITY PLAN

The 59-square-mile Cordova Community Plan area is bordered by the American River and the City of Folsom on the north; Prairie City Road, Grant Line Road, and White Rock Road on the east; Douglas Road, Kiefer Boulevard, and Jackson Road on the south; and the City of Sacramento and Watt Avenue on the west**.** Only the portion of the Plan Area north of Kiefer Boulevard is located within the Cordova Community Plan area. Objectives identified in the plan that are applicable to the Project include:

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-4. Promote linkages between LRT station and adjacent land uses, particularly within a 1/4-mile radius of the LRT station.

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).

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-4. Promote neighborhoods that are reflective of a diverse population, and are competitive with other communities in the region in terms of their value and desirability.

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

TC-4. Encourage linkages between LRT stations and adjacent land uses, particularly within a 1/4-mile radius of the LRT station, and encourage the design of employment centers to be convenient for walk-on patrons of LRT.

H-1. Promote a balance for the jobs to housing ratio that will support the community position as a regional employment center.

H-2. Promote the development of strong and safe residential neighborhoods with convenient access to community and urban amenities including parks, public transit, schools, shopping, and other services.

H-4. Promote housing convenient to employment centers (e.g., as is the case with the proximity of Village of Zinfandel and its relation to the Highway 50 Business Park), and appropriate linkages for pedestrians and bicyclists.

H-9. Ensure an adequate mix of housing affordability dispersed throughout the community.

H-10. Encourage a variety of lot sizes and housing types to promote social and economic diversity, and to provide greater variation visibly for neighborhoods.

H-11. Promote policies to cite duplexes for all corner lots in single-family subdivisions to promote a better integration of housing types throughout the community.

VINEYARD COMMUNITY PLAN

The Vineyard Community Plan Area is approximately 37 square miles and is bound by Calvine Road on the south, Grantline Road and Sunrise Blvd on the east, Kiefer Boulevard and the Jackson Highway on the north, and Florin Road on the west. Development of the Vineyard Community is guided by recognition of the area's rural uses and the desire to maintain its distinctive rural residential character. Vineyard Community Plan policies applicable to the Project include:

NER 6. Require buffering and appropriate screening between commercial/industrial development and residential land use and between commercial/industrial development and agricultural use.

AR 1./FU 1. Buffer, through incremental zoning, agricultural-residential development from industrial and agricultural land uses.

CI 3. Industrial proposals should be accompanied by a public services plan, the scope of which will depend on the extent and complexity of the proposal.

CI 4. Commercial/industrial development must be adequately buffered from adjacent residential or agricultural uses with screening, open space or less dense development, or other means.

FU 2. Urban residential development will only be considered in those areas contiguous to approved urban uses and designated for future urban growth, and only when negative impacts upon the Vineyard community are mitigated to the greatest extent possible.

FU 7. Urban land proposals should minimize encroachment upon open space areas and maximize infrastructure effectiveness through measures such as clustered design and contiguous development.

SACRAMENTO AREA COUNCIL OF GOVERNMENTS' BLUEPRINT

The Sacramento Area Council of Governments (SACOG) is an association of local governments in the six-county Sacramento Region that includes Sacramento County. SACOG provides transportation planning and funding for the region, prepares the region's long-range transportation plan, approves the distribution of affordable housing in the region, and assists in planning for transit, bicycle networks, and airport land uses.

SACOG's Blueprint is intended to be advisory and to guide the region's transportation planning and funding decisions. The Blueprint is based on the seven principles listed below, with an ultimate horizon of the year 2050.

1. Provide a variety of transportation choices, including walkable paths
2. Mixed land uses
3. Take advantage of compact building and community design
4. Create a range of housing opportunities and choices
5. Strengthen and direct development toward existing communities
6. Foster distinctive, attractive communities with a strong sense of place

7. Preserve open space, farmland, natural beauty, and critical environmental areas

When it was adopted by the SACOG board in 2004, the regional Blueprint was projected to meet growth needs through 2050. Under today's slower regional growth rate projections, there is likely capacity in the Blueprint beyond 2050 (SACOG 2016).

Although the Blueprint is not a regulatory document, General Plan Policy LU-113 calls for the County to work with SACOG to support implementation of the Blueprint's principles. The Plan Area is identified as a growth area under the Blueprint, with land envisioned for industrial, high density mixed residential, and open space uses. The 2030 General Plan includes four growth management strategies to allow a level of development sufficient to meet demand forecast in the Blueprint: buildout of vacant and under-utilized infill parcels, buildout of previously master-planned communities, commercial corridor planning and revitalization, and expansion of the UPA (i.e., New Growth Areas, including Jackson Township). Combined, these strategies could result in between 103,500 and 150,000 additional housing units, which exceeds the number of units the Blueprint determined would need to be accommodated.

SACRAMENTO AREA COUNCIL OF GOVERNMENT'S METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY

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 (7-year horizon) in more detail. The current MTP/SCS was adopted by the SACOG board in February 2016, but an update is currently in process and expected to be adopted in early 2020

In each MTP update cycle, SACOG prepares a regional growth forecast and land use pattern to accommodate the estimated increases in population, employment, and housing. The Plan Area is mapped as a portion of the Blueprint growth footprint that is not identified for growth in the 2016 MTP/SCS planning period (i.e., through 2036). The area to the north is identified as established community, and the areas to the east and west are shown as developing communities. The land to the south is not identified for development in the MTP/SCS or Blueprint.

SOUTH SACRAMENTO HABITAT CONSERVATION PLAN

The South Sacramento Habitat Conservation Plan (SSHCP) is designed to ensure preservation of species, natural communities, and aquatic resources while streamlining the environmental permitting process for Covered Activity projects that impact listed species, listed species' habitats, or aquatic resources. The SSHCP is intended to preserve 28 species of plants and wildlife, including 11 that are listed as threatened or endangered under the federal Endangered Species Act (ESA), the California Endangered Species Act (CESA), or both. In addition, because so many of the Covered Species live part or all of their lives in water bodies, the SSHCP also provides additional avoidance and minimization of Covered Activity impacts to wetlands, streams, and other aquatic resources that are also subject to regulation under the federal Clean Water Act (CWA), the California Fish and Game Code, and California's Porter-Cologne Water

Quality Control Act. Under the SSHCP, Sacramento County has the ability to extend incidental take coverage provided by the SSHCP Incidental Take Permits to Covered Activities implemented by Third-Party Project Proponents that are under their jurisdiction as a land use authority.

The SSHCP is managed by a joint powers authority called the South Sacramento Conservation Agency (SSCA). The agency holds title to conservation easements and, in limited cases, fee title to preserved lands. It also oversees cooperative agreements with other entities that will own or manage preserves or conservation easements as part of the SSHCP preserve system. Under the SSHCP, property owners or project sponsors required to mitigate species and habitat impacts either dedicate land to the preserve system or pay fees to support free-market easement or property acquisitions.

The Plan Area is within the Urban Development Area identified in the SSHCP. Covered Activities provide for the expansion of the urbanizing areas within the County's existing USB. Covered Activities within the Urban Development Area include activities and projects related to urban development and associated infrastructure that are consistent with the General Plan.

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.

Impacts and Analysis

Significance Criteria

Based on the CEQA Guidelines, a land use impact is significant if Project implementation results in any of the following:

1. Physically divide an established community;
2. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect; or
3. Displacement of substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere.

Issues not Discussed Further

The Initial Study Checklist prepared for the Project (see Appendix INT-1) determined that there would be no impact associated with physically disrupting or dividing an established community. The checklist also determined that impacts associated with the displacement

of substantial amounts of existing housing would be less than significant. There are few residences currently located within the Plan Area, and the Project would result in the development of up to 6,143 new housing units, resulting in a net increase of housing. Properties containing existing homes would be developed as they are put up for sale and purchased by developers, so residents would not be forcibly displaced from their homes. Both of these impacts were focused out and will not be further analyzed in this EIR.

Consistency with airport planning documents and the potential for the Project to create an airport safety hazard for people residing or working in the area is addressed in Chapter 7, "Airport Compatibility."

As indicated above, the Plan Area is within the Urban Development Area identified in the SSHCP and the Project would be a Covered Activity if it would result in urban development and associated infrastructure that is consistent with the 2030 General Plan. Consistency with the 2030 General Plan is evaluated below. Consistency with the SSHCP is included in Chapter 8, "Biological Resources."

METHODOLOGY

An evaluation of the potential land use impacts associated with implementation of the Project was based on a review of planning documents, including the various components and policies of the Sacramento County General Plan, other County regulations affecting planning and implementation of the General Plan, and consultation with appropriate agencies.

IMPACT: CONFLICT WITH SACRAMENTO COUNTY'S LAND USE PLANS

PROPOSED PROJECT

EXISTING LAND USE DESIGNATIONS AND ZONING

The Plan Area is currently designated for agricultural use on the Sacramento General Plan Land Use Diagram and zoned Light Industrial, Agricultural 80, and Interim Agricultural Reserve. In addition, portions of the Plan Area are located within two combining zoning districts: flood and surface mining. The entitlements requested as components of the Project would change the General Plan designations and zoning to make them consistent with the proposal. The Project also includes the establishment of a new Mixed Use land use designation in the General Plan. In addition, the flood and surface mining combining zoning districts would be removed because the hydrology of the area would be changed to reduce the potential for flooding (see Chapter 14, "Hydrology and Water Quality") and mining would no longer be a permittable use of the Plan Area.

SACRAMENTO COUNTY 2030 GENERAL PLAN

The Project would require amendment of the General Plan land use designation from General Agriculture and Extensive Industrial to a combination of: Low Density Residential, Medium Density Residential, Commercial and Office, Mixed Use, Recreation, Natural Preserve, and Public/Quasi Public (see Plate PD-5 in Chapter 2, "Project Description"). This amendment to re-designate approximately 1,281 acres within the Plan Area would allow development of the Project to commence. The 110-acre area

in the southeast corner of the Plan Area would retain its existing General Plan land use designation of General Agriculture (20 acres). As mentioned above, this Project includes a General Plan Amendment to add a new Mixed Use land use designation.

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 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 Jackson Township Specific Plan would guide the strategic growth of the Plan Area.

The Project also includes two additional amendments to the General Plan to implement the Specific 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 (see Plate PD-10 in Chapter 2, "Project Description"). Second, the Project would amend the County's Bicycle Master Plan to add internal and external bicycle facilities within and through the Plan Area (see Plate PD-11 in Chapter 2, "Project Description").

As described in Table LU-1, below, the project would be generally consistent with General Plan policies intended to protect the environment. Please note that a separate policy analysis for General Plan Policies LU-119 and LU-120 is provided further below under the analysis of the County's growth management policies. A separate policy consistency analysis for non-environmental policies will be completed as part of the County's staff report for the Board of Supervisors hearing.

JACKSON VISIONING AREA PLAN

The Jackson Visioning Area Plan envisions a land use pattern for the site that includes low, medium and high-density residential uses, mixed uses, community commercial and open space uses. The land use pattern of the Project is generally consistent with the land uses envisioned in the Jackson Visioning Area Plan.

Table LU-1: 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 designates approximately 290 acres of open space organized in three categories: wetland preserve, multi-functional greenbelts, and landscape corridors. The 214-acre wetland preserve would be contiguous with a wetland preserve located on the Mather Field property to the north, as well as a large, proposed preserve located on the neighboring NewBridge Specific Plan property to the east. Uses within, and access into, the areas would be restricted pursuant to the SSHCP and/or the United States Army Corps of Engineers (USACE). The proposed greenbelts are multi-functional facilities that provide trails, passive recreation, and drainage conveyance within linear corridors. The Project would be consistent with this policy.

Policy	Consistency Discussion
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).	In general, the intent of Policy LU-120 is to focus development in specific plan areas that would enable the permanent preservation of high-quality natural resources in areas outside of the County's USB. By implementing a specific plan within the USB that includes a more compact land use design than most of the existing development within the county a proposed preserve area containing much of the Plan Area's most valuable resources, the Project meets the intent of this policy. This also aids in relieving development pressure in areas of higher natural resource values outside of the USB. In addition, alternative lot configurations, including clustering, may occur in the Low Density Residential and Medium Density Residential land use designations. This EIR evaluates the protection of resources at the Plan level. The Project has been designed to provide adequate infrastructure capacity and provides design guidelines applicable to the Plan Area overall (see Appendix B of the Jackson Township Specific Plan). Should development clustering be proposed for individual projects within the Low Density Residential and Medium Density Residential land use designations, consistency with this Policy would be required.
LU-1. The County shall not provide urban services beyond the Urban Policy Area, except when the County determines the need for health and safety purposes and the extension provisions as provided in Policy LU-1.1.	One of the requested entitlements is an expansion of the UPA. If approved, urban services would be extended to the Plan Area, and the Project would be consistent with this policy.
LU-3. It is the intent of the County to focus investment of public resources on revitalization efforts within existing communities, especially within commercial corridors, while also allowing planning and development to occur within strategic new growth areas.	The Plan Area is not located within an existing community or commercial corridor. However, the Project Applicant is requesting to create a new urban growth area that would be consistent with the County's growth management policies focusing on strategic growth through the use of a specific plan. This effort and development of the Project and associated improvements are funded privately by the Project Applicant and future developers within the Plan Area. The Public Facilities Financing Plan prepared for the Project demonstrates its fiscal neutrality, as required by Policy LU-120, PC-7, which is addressed in more detail below.
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.	The Project includes the preservation of an approximately 214-acre wetland preserve along the eastern edge of the Plan Area and north of Kiefer Boulevard. The Project was designed to consider many of the environmental concerns the HCP was

Policy	Consistency Discussion
	developed to address. However, the 214-acre wetland preserve is not consistent with the hardline preserve strategy adopted as part of the HCP, which calls for an even larger preserve area that includes a cluster of wetland features that are currently proposed for residential development in the Project. For this reason, the Project is considered to be inconsistent with the HCP.
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.	The land use plan incorporates all of the features outlined in Policy LU-26. 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.	The Project includes greenbelts, landscaped corridors, and parks. Most residential units within the Plan Area would be located within 0.25 mile of an open space area, park, or linear parkway; and within 0.5 mile of retail and employment land uses. Therefore, the Project would be consistent with this policy.

Policy	Consistency Discussion
LU-113. The County shall work with SACOG to support implementation of Blueprint's policies and land use objectives.	The Plan Area is located in an area shown as a future growth area in the SACOG Blueprint map. See the "Conflict with SACOG Blueprint and MTP/SCS" impact analysis below.

du/ac = dwelling units per acre

COMMUNITY PLANS

CORDOVA COMMUNITY PLAN

The Cordova Community Plan includes objectives to encourage mixed land uses (LU-5, UDNC-1, H-1, H-2, H-4, H-10), create land uses that are compatible with existing industrial and commercial developments (LU-2, LU-6), encourage distinctive communities (UDNC-4, UDNC-7), and promote the use of alternative transportation (LU-4, UDNC-2, TC-4). The portion of the Plan Area in the Cordova Community Plan Area is designated Light Industrial and Industrial Reserve in the plan. This area would remain undeveloped as Wetland Preserve with implementation of the Project.

The Project includes a Community Plan Amendment to change the Community Plan designation of the parcels located within the Plan Area from Light Industrial and Industrial Reserve to Jackson Township Specific Plan Area (see Plate PD-12 in Chapter 2, "Project Description"). The Project would be consistent with the objectives of the plan.

VINEYARD COMMUNITY PLAN

The Vineyard Community Plan includes policies regarding appropriate areas for growth and buffering. Specifically, policies NER-6, AR-1/FU-1, and CI-4 address buffering residential development from commercial, industrial, and agricultural uses. The Project provides a master plan for future development that considers land use compatibility and surrounding land uses. The policies also provide that urban residential development should be contiguous to approved urban uses and clustered to minimize encroachment on open space areas (FU-2, FU-7). The Plan Area is bordered on the east by the NewBridge Specific Plan Area, on the west by the West Jackson Highway Master Plan, and to the north by the existing Independence at Mather development. As discussed further below, the Plan Area is within the USB and is planned for eventual growth. The Plan Area is located outside of the UPA, so it is not in an area currently planned for near-term growth but the Project includes a request to modify the UPA to include the Plan Area, as do the NewBridge Specific Plan and West Jackson Highway Master Plan projects. Therefore, the Project would be consistent with the Vineyard Community Plan.

The Project includes a Community Plan Amendment to change the Community Plan designation of the parcels located within the Plan Area from Permanent Agriculture and Light Industrial to Jackson Township Specific Plan Area (see Plate PD-12 in Chapter 2, "Project Description"). The Project would be generally consistent with the objectives of the plan.

SUMMARY

The SAGOG Blueprint, adopted in 2005, acknowledged the Jackson Highway Corridor as an appropriate and logical area to urbanize. The 2030 General Plan, adopted in 2011, originally contemplated new growth areas to occur via expansion of the UPA, including the Jackson Highway area. However, the Board of Supervisors opted to allow for expansions of the UPA to occur on a project-by-project basis at the request of applicants as part of the master planning process pursuant to General Plan Policy LU-119. Specific plans provide an opportunity to creatively implement the intent of the General Plan and serve as a refinement of General Plan policies for a specific geographic area. The Project Specific Plan establishes a development framework for land use, community design and character, infrastructure improvements and a subsequent project approval structure for orderly development within the approximately 1,391-acre Plan Area.

Consistency with the 2030 General Plan is required by State law. Furthermore, no zoning, tentative maps, parcel maps, or public works projects can be approved, adopted, or undertaken unless they are consistent with the adopted specific plan. The Specific Plan was prepared pursuant to State law and is compatible with the applicable policies and programs of the General Plan. Overall, the Project is consistent with the General Plan. The Project is consistent with the Cordova Community Plan and the Vineyard Community Plan. Therefore, the Project would have a **less-than-significant** impact.

ALTERNATIVE 2

As described above, the SAGOG Blueprint, adopted in 2005, acknowledged the Jackson Highway Corridor as an appropriate and logical area to urbanize. The 2030 General Plan, adopted in 2011, contemplated new growth areas to occur via expansion of the UPA, including the Jackson Highway area. Specific plans provide an opportunity to creatively implement the intent of the General Plan and serve as a refinement of General Plan policies. Alternative 2 would establish a development framework for land use, community design and character, and infrastructure improvements and a subsequent project approval structure for orderly development within the approximately 1,391-acre Plan Area that is generally consistent with the applicable policies in the General Plan. Specifically, Alternative 2 is consistent with Policies OS-1, OS-3, LU-1, LU-3, LU-26, and LU-27 in the same manner as the Project.

Consistency with the 2030 General Plan is required by State law. Furthermore, no zoning, tentative maps, parcel maps, or public works projects can be approved, adopted, or undertaken unless they are consistent with the adopted specific plan. Overall, Alternative 2 is consistent with the General Plan. It is worth noting that Alternative 2 was specifically designed to be consistent with the SSHCP, and is therefore more consistent with General Plan Policy LU-15 than the Project. Therefore, the impact due to conflict with Sacramento County's land use plans would be **less than significant** under Alternative 2.

MITIGATION MEASURES

No mitigation is required.

IMPACT: CONFLICT WITH SACRAMENTO COUNTY'S URBAN POLICY AREA/GENERAL PLAN GROWTH MANAGEMENT POLICY

PROPOSED PROJECT

The Plan Area is outside of the UPA, which is the area that the 2030 General Plan anticipated would accommodate projected growth through 2030, but within a region where growth through expansion of the UPA was contemplated in the 2030 General Plan. The Plan Area is adjacent to the UPA, providing a logical extension of development, and within the USB. As proposed, the Project would buildout between 2020 and 2035. In order for the County Board of Supervisors to approve the UPA amendment, the requirements of General Plan Policies LU-119 and LU-120 must be met.

According to LU-119, proposed UPA expansions must have significant borders that are adjacent to the existing UPA or a city boundary and the boundary of the expansion must be logical. As shown on Plate PD-8 in Chapter 2, "Project Description," the existing UPA extends to the northern boundary of the Plan Area. The proposed General Plan Amendment that would include the approximately 1,391-acre Plan Area would create a logical expansion that would follow existing major roadways on the west and south and property boundaries on the east. In addition, the boundary of the Project is not irregular and forms a logical edge. The proposed expansion of the UPA is consistent with this policy.

General Plan Policy LU-120 is intended to reduce impacts of many different types – such as growth inducement, unacceptable operating conditions on roadways, poor air quality, and lack of appropriate infrastructure – by establishing design criteria for all amendments to the UPA. A project must be consistent with the policy before it may be considered for approval. Based on Project characteristics outlined in the Specific Plan document, the Project would meet the requirements of LU-120. The Project has been deemed consistent with criteria PC-1 through PC-10, and has achieved a total of 19 points in the criteria-based standards (CB-1 through CB-5). A total of 18 points is required and 24 points are possible. The tables below (Table LU-2 and Table LU-3) summarize how the Project complies with each performance criteria (PC-1 through PC-10) and performance metrics (CB-1 through CB-5) outlined in LU-120. Given that the Project has been deemed consistent, Project impacts related to conflict with growth management policy are **less than significant**. All future small lots maps and subsequent entitlements must demonstrate compliance with these criteria, or they would not be permitted.

Table LU-2: Project LU-120 Consistency

Performance Criteria	Requirement	Consistency
PC-1: Vision for connection to other adjacent existing and potential future development areas.	Include a vision of how the development will connect to other adjacent existing and potential future development areas within the USB, including how roadways, transit, sewer, and water could occur within all adjacent areas.	The Project provides linkages to existing and planned development via public transit, preserve connectivity, infrastructure and makes use of existing regional roadways which provide connections to adjacent areas.
PC-2: Housing Choice.	A variety of housing types and densities, including single-family homes, duplexes, triplexes, accessory dwelling units, townhomes, condominiums, apartments and similar multi-family units, in a variety of settings including both residential neighborhoods and mixed use nodes.	The Project includes 6,143 residential units in three densities ranges from 1 to 30 du/ac. The Specific Plan allows for various housing types within each of the proposed densities. Low-density areas can be developed with standard single-family units, alley-loaded homes, cluster lots, or halfplexes. Medium density areas can accommodate detached and attached single-family housing, as well as halfplexes, cluster lots, alley-loaded homes, courtyard, greencourt, zero-lot line, brownstones, townhomes or condominiums. High-density areas are intended to be developed with both rental and for-sale housing products including apartments, brownstones, townhomes, and condominiums.
PC-3: Quality.	Design guidelines, development standards and/or similar assurances that will require high-quality development consistent with the vision set forth in the Master Plan.	The Specific Plan includes Development Standards and Design Guidelines (as Appendix A and Appendix B, respectively) that have been reviewed by the County. The Design Guidelines describe principles and attributes for consistent streetscapes, entry features, walls and fencing, identification signage, landscape elements, residential design and other site-design specific considerations.
PC-4: Accommodate the percentage of low and very low income residential units required by state law per the County's current	Accommodate ≥90 percent of the obligation per RHNA	The Project is required to accommodate greater than 90% of its share of the unincorporated County's proportional obligation of the RHNA. Current RHNA obligation is 38.7% of the housing

Performance Criteria	Requirement	Consistency
Housing Element based on the Regional Housing Needs Allocation (RHNA).		stock. Ninety percent of that obligation would be 34.8%. The seven high-density sites and one of the Mixed Use sites in the Plan Area meet the criteria for providing affordable housing and would accommodate a total of up to 2,137 units. This accounts for 34.8% of the units in the Plan Area and satisfies the Project's share of the County's overall RHNA obligation. However, any reductions in the proportion of high-density residential units within the Plan Area would make the Project inconsistent with this policy.
PC-5: Pedestrian- and transit-oriented design.	Pedestrian- and transit-oriented design, including: • Sidewalks and bike routes along interconnected streets with short block lengths and a high intersection density. • Prominent pedestrian and bicycle network. • Few if any cul-de-sacs. • Pedestrian and bike connections at the ends of all cul-de-sacs unless infeasible due to topography or similar impediments inherent in the project site.	The Specific Plan emphasizes pedestrian and bicycle connection between uses and minimized barriers among uses. The Plan includes parkways that provide pedestrian connections among land uses and open spaces. The local street network has not yet been designed, but will be required to meet this performance standard as a condition of approval.
PC-6: Infrastructure Master Plan and Financing Plan.	Inclusion of an Infrastructure Master Plan and Financing Plan that include the following: • The Infrastructure Master Plan shall identify required public facilities and infrastructure (including roads, transit, water, sewer, storm drainage, schools, fire, park, library, and other needed community facilities) and associated costs for the development of the proposed UPA expansion/Master Plan; • The Financing Plan shall: o Include an infrastructure phasing analysis that examines development through buildout taking into consideration potential development activities,	The Specific Plan includes infrastructure master plans (sewer, water, drainage) which describe infrastructure needed for the Project, as well as sizing and timing of facilities. The Public Facilities Financing Plan identifies funding mechanisms for those improvements.

Performance Criteria	Requirement	Consistency
	facilities requirements and constraints; o Identify the phase or timing for when the facilities are needed; o Identify the funding mechanisms proposed to pay for the identified infrastructure and facilities; o Demonstrate that infrastructure requirements and the associated costs are reasonably balanced throughout each development phase and outline solutions for any potential constraints and/or shortfalls for any given phase.	
PC-7: Services Plan	Inclusion of a Services Plan to demonstrate: • that provision of services to the proposed UPA expansion/Master Plan are cost-neutral to the County's General Fund and existing ratepayers; • that the operations and maintenance costs stemmed from the required public facilities and infrastructure for the development of the proposed UPA expansion/Master Plan are cost-neutral to the County's General Fund and existing ratepayers, and; • that existing levels of municipal services will not be negatively impacted by approval and buildout of the proposed UPA expansion/Master Plan.	The Project includes an adequate Service Plan that meets these criteria.
PC-8: Consistency with County adopted plans.	Consistency with all applicable County adopted plans not sought to be amended by the proposed project.	The Project would be consistent with County plans that apply to the area, as described above and in the resource-specific chapters throughout this EIR.
PC-9: Consideration of regional planning efforts.	Inclusion of a discussion/analysis of how the proposed UPA expansion/Master Plan relates to broad-based and regional planning efforts, such as SACOG's adopted Blueprint Vision and Metropolitan Transportation Plan, Sacramento County's Visioning documents created for the Jackson Highway and Grant Line East Areas, any applicable Habitat Conservation Plan(s), the Sacramento Metropolitan Air Quality Management District's State	The Project would be consistent with regional and County planning efforts, as described above and in the resource-specific chapters throughout this EIR. It is not included in the current or Draft Land Use Scenario for the upcoming MTP/SCS, but it is designed consistent with the Blueprint principles, as well as the sustainability and transportation

Performance Criteria	Requirement	Consistency
	Implementation Plan, and Regional Transit's Master Plan.	principles of the MTP/SCS. Furthermore, the MTP/SCS is intended to be modified every 4 years to address changes in conditions, so if the Project is adopted, it is likely to be included in future MTP/SCS updates.
PC-10: Consideration of jobs-housing balance.	Inclusion of a discussion/analysis of the proposed UPA expansion/Master Plan's jobs-housing balance. Master Plans should provide an internal jobs-housing balance and/or improve the jobs housing balance within the project's vicinity.	The Project includes employment-generating land uses (commercial, mixed-use, office, school) that would accommodate approximately 5,613 employees. The internal jobs/housing ratio would be 0.91 jobs per housing unit.

Table LU-3: Criteria-Based Standards Determination for the Project

Criteria	Requirement	Point Allocation	Evaluation	Points Achieved
CB-1 Minimum density	Minimum density of at least 7 dwelling units per net acre if using "double net" methodology or 9.3 dwelling units per acre if using "triple net" methodology.	≥ 8 dwelling units per acre if using "double net" methodology, or ≥ 10.6 dwelling units per acre if using "triple net" methodology = **3 points** ≥ 9 dwelling units per acre if using "double net" methodology, or ≥ 12 dwelling units per acre if using "triple net" methodology= **4 points** ≥ 10 dwelling units per acre if using "double net" methodology, or ≥ 13.3 dwelling units per acre if using "triple net" methodology= **5 points**	Double net density calculation: 6,143 du/585.7 acres (577.5 ac.+ 8.2 ac. of MU) = 10.5 du/ac. Note: this does not include the 109.3 acres of AG or the 10% net residential acreage exclusion.	5
CB-2 Proximity to Amenities	≥80 percent of all residential units located within one mile of at least three of the following existing or planned amenity categories: • Public elementary, middle, or high school • Park or recreational facility • Grocery store, drug	≥ 85% of all units located within 1 mile of at least three amenity categories = **2 points** ≥ 90% of all units located within 1 mile of at least three amenity categories = **3 points** ≥ 90% of all units located within 1 mile of at least four amenity categories = **4 points**	More than 90 % of all units would be within 1 mile of at least four of the listed amenities: within 0.25 mile of a school, 0.25 mile of a park or recreation facility, 0.25 mile of regional transit and 0.5 mile of an employment center.	4

Criteria	Requirement	Point Allocation	Evaluation	Points Achieved
	store or commercial center • Office or industrial employment center • Civic use (e.g. library, post office, community garden, urban farm) • Preschool, childcare or senior care facility • Medical offices or facilities			
CB-3 Mixed Use	Include a mixed use designation, overlay, and/or zoning category that allows vertical mixed use by right, provides uninterrupted pedestrian connections, and prohibit barriers between different uses.	At least 5% of a Master Plan's developable land zoned for mixed use (horizontal and vertical) = **2 points** At least 10% of a Master Plan's developable land zoned for mixed use (horizontal and vertical) = **3 points** At least 15% of a Master Plan's developable land zoned for mixed use (horizontal and vertical) or assurances that at least 5 % of the residential units will be located and built within vertically integrated mixed-use buildings = **4 points**	The Project includes two MU parcels at 8.2 and 11.4 acres. The MU zoning on these sites allows both vertical and horizontal integration of residential and commercial land uses, although no residential would occur on the latter due to powerline easements. This would result in 19.6 acres of MU on 1,176.7 acres (excluding the Wetland Preserve from the Plan Area), which is roughly 2%.	0
CB-4a Transit Proximity	≥65 percent of all residential units located within ½ mile of existing or planned transit service, which consists of light rail, streetcars, buses, vanpools and/or shuttles that connects with regional public transit service.	≥ 70% of residential units located within 0.5mile of existing or planned transit service = **2 points** ≥ 75% of residential units located within 0.5mile of existing or planned transit service = **3 points** ≥ 80% of residential units located within 0.5mile of existing or planned transit service = **4 points**	90% of residences would be within 0.25 mile of regional transit at buildout.	4
CB-4b Transit Headway		Transit service with headways of 60 minutes or less during peak hours (Monday through Friday from 7:00 – 9:00 a.m. and 4:00 – 6:00 p.m.) = **1 point** Transit service with headways of 30 minutes or less during peak hours (Monday through Friday from 7:00 – 9:00 a.m. and 4:00 – 6:00 p.m.) = **2 points**	At full build-out, the planned SacRT route would have 15-minute peak headways, with 30-minute base headways.	3

Criteria	Requirement	Point Allocation	Evaluation	Points Achieved
		Transit service with headways of 15 minutes or less during peak hours (Monday through Friday from 7:00 – 9:00 a.m. and 4:00 – 6:00 p.m.) = **3 points**		
CB-5 Employment Proximity	Analysis of existing employment/jobs within a 5 mile radius of the proposed UPA expansion/Master Plan boundary.	< 50,000 existing employees/jobs within a 5 mile radius of the proposed Project = **2 points** Between 50,000 and 100,000 existing employees/jobs within a 5 mile radius of the proposed Project = **3 points** > 100,000 existing employees/jobs within a 5 mile radius of the proposed Project = **4 points**	Based on US Census data by zip code, with adjustments made for zip codes partially within a 5-mile buffer,[1] There are between 50,000 and 100,000 jobs within a 5-mile radius of the Plan Area. Existing major employment centers in close proximity to the Plan Area include Bradshaw Center Area, Mather Airport, Mather Commerce Center, Capital Center / Rancho Cordova Town Center, employment centers along Sunrise Blvd., the Power Inn Road industrial area, and Depot Park.	3
		TOTAL POINTS		19

1: calculations conducted by Sacramento County in 2014.
du/ac = dwelling units per acre

Alternative 2

Alternative 2 would also require expansion of the UPA and would include similar smart growth principles. Alternative 2 would result in more than 10 dwelling units per acre if using "double net" methodology (see Alt-7 in Chapter 3, "Alternatives"). Approximately 37.8 percent of the Project's total units would be high density, exceeding the requirement of performance standard PC-4. All other performance standards would match the analysis of the Project. Alternative 2 would score 19 points and exceed the criteria-based standards under the LU-120 evaluation. The impact for Alternative 2 would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact: Conflict with SACOG Blueprint and MTP/SCS

Proposed Project

The following discussion evaluates the Project's consistency with SACOG's key planning documents.

Blueprint

The Sacramento County General Plan stipulates that the County will support implementation of Blueprint's policies and land use objectives (Policy LU-113). However, the County is not obligated to support the land use types proposed in the Blueprint at the parcel level. Therefore, this discussion relies on analysis of the Project's consistency with the principles and overall vision of the Blueprint, rather than conformity to the concept map.

The Project is intended to provide for a diverse community that can accommodate a wide range of residents in various housing types in proximity to existing and planned job centers, including new jobs created within the Plan Area. While the Project would result in development outside of an existing community, it is in an area that the Blueprint has designated for development. As described above, the Plan Area is envisioned to include commercial, office, residential, and open space uses.

The following discussion evaluates the Project's consistency with each of the seven Blueprint principles.

Provide a variety of transportation choices, including walkable paths

The Project includes both a Mobility Plan and a Regional Transit Plan that provide for an improved regional roadway network, public transit service, bikeways, and greenbelt walking paths. A key feature of the Plan Area is an internal trail system that connects to a larger regional trail system, including a linkage to a large, centrally located greenway/drainage corridor with a trail on one side that has been designed to provide easy, non-vehicular linkages from one end of the community to the other. The Project includes both a Town Center and Village Center, each with commercial and retail uses,

as well as multiple neighborhood schools and parks dispersed throughout the Plan Area. This dispersal of land uses ensures that most residential units within the Plan Area would be located within 0.25 mile of an open space area, park, or linear parkway; and within 0.5 mile of retail and employment land uses. Similarly, each of the elementary school sites would be within 0.25 mile of most of the proposed residential units.

MIX LAND USES

The Project includes a land use plan that would provide for a range of different uses, including low density residential, medium density residential, high density residential, general commercial, community commercial, mixed use, office, schools, a fire station, parks, a wetland preserve, a greenbelt/drainage corridor, landscaping, detention, agriculture, and associated roadways. The Project also includes a proposal to add a mixed use designation to the 2030 General Plan.

TAKE ADVANTAGE OF COMPACT BUILDING AND COMMUNITY DESIGN

The Project has been designed to create two distinctive “hubs” that would serve as the focus of the community and allow for people to live, work, shop, and recreate in the same place. The Town Center hub is designed as a gridded, compact block area that contains the more intensive land uses to serve the community and beyond. The Village is designed to provide a moderate intensity community with community commercial uses and high and medium density residential (see Plate PD-15 in Chapter 2, “Project Description”). In addition, the Specific Plan allows many options for housing types in each of the residential land use designations, including many home product types that provide for compact development patterns, including halfplexes, townhomes, brownstones, cluster lots, zero-lot-lines, and courtyard homes.

CREATE A RANGE OF HOUSING OPPORTUNITIES AND CHOICES

The land use plan provides for a mix of residential unit types. There would be 2,134 low-density residential units on 14 large lot parcels covering 355.7 acres with an average density of six units per acre; 1,772 medium-density residential units on seven large lot parcels covering 136.3 acres with an average density of 13 units per acre; 2,137 high-density residential units on seven large lot parcels on 85.5 acres with an average density of 25 units per acre; and 100 units within a 8.2-acre mixed use parcel. Additionally, the Specific Plan allows for various types of home products within each land use designation to provide even more opportunity for housing choice within similar densities. Low-density areas can be developed with standard single-family units, alley-loaded homes, cluster lots, or halfplexes. Medium density areas can accommodate detached and attached single-family housing, as well as halfplexes, cluster lots, alley-loaded homes, courtyard, greencourt, zero-lot line, brownstones, townhomes or condominiums. High-density areas are intended to be developed with both rental and for-sale housing products including apartments, brownstones, townhomes, and condominiums.

STRENGTHEN AND DIRECT DEVELOPMENT TOWARD EXISTING COMMUNITIES

Although the Project would create a master planned development outside of an existing community, the commercial development proposed in the Plan Area would also serve

existing residents of the area, including the Independence at Mather subdivision, the Vineyard community, and the Anatolia community in Rancho Cordova.

FOSTER DISTINCTIVE, ATTRACTIVE COMMUNITIES WITH A STRONG SENSE OF PLACE

The Project would include a Town Center and Village that would provide gathering places supported by denser land use patterns. In addition, the greenbelt system would provide a central community asset. These features are intended to serve as focal points of the community.

The Project also includes development standards and design guidelines in the Specific Plan (as Appendix A and Appendix B, respectively) that would create a variety of building façades and treatments in a unified theme, which would assist in creating a distinctive visual character within the community. Standards address walls and fencing, entry features and gateways, and park designs. The overall Project layout also includes a variety of open space types integrated with the residential and commercial areas to create a pleasant and attractive environment.

PRESERVE OPEN SPACE, FARMLAND, NATURAL BEAUTY, AND CRITICAL ENVIRONMENTAL AREAS

The Project design was influenced by the vernal pool complex in the eastern portion of the Plan Area, as well as the Morrison and Elder Creek drainages. In total, 275 acres (20 percent of the Plan Area) would be preserved in the wetland preserve and greenbelt/drainage corridors with trails to allow residents to enjoy the Plan Area's natural beauty.

METROPOLITAN TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY

SACOG's MTP/SCS provides vision for transportation projects and community development based on the preferred growth scenario identified in the Blueprint. Federal regulations require that the MTP/SCS is updated at least every 4 years. In each update cycle, SACOG prepares a regional growth forecast and land use pattern to accommodate the estimated increases in population, employment, and housing.

In the 2016 MTP/SCS, the Plan Area is mapped as a portion of the Blueprint growth footprint that is not identified for growth in the next 20 years (i.e., through 2036). However, the regular plan update cycles are designed to allow SACOG to constantly monitor progress, learn more about the region's growth dynamics, and make frequent mid-course adjustments. This means that if new information about individual development projects, for instance, becomes available after the MTP/SCS is adopted, SACOG is obligated to address that information in the next MTP/SCS update cycle. This includes the inclusion of projects granted entitlements since the last MTP/SCS update.

The next update is anticipated to be adopted no later than February 2020. SACOG released the land use and transportation assumptions used in the Draft Preferred Scenario that will be used in the 2020 update for local agency review in early 2019. Although this draft identifies growth associated with the Plan Area that is generally consistent with the Project evaluated in this document, the draft assumptions do not project this growth to occur until after the year 2040, which is inconsistent with the Project buildout year of 2035 assumed in this analysis. Therefore, although SACOG

would update the regional growth forecast and land use plan to reflect the Project, if approved, the Project is currently inconsistent with the MTP/SCS.

SUMMARY

As identified above, the Project is consistent with the Blueprint principles, but it is not included in the current MTP/SCS and is not currently anticipated to be included in the Draft Land Use scenario in the upcoming MTP/SCS expected to be adopted in 2020. However, the MTP/SCS is updated every 4 years to account for changes in development conditions. The implementation plan for the Project includes a lengthy buildout period with phased development that would allow time for SACOG to adjust growth forecasts through the mandated update cycle for the MTP/SCS. If adopted, the Project would likely be included in future MTP/SCS cycles as part of the adjustments that SACOG makes to the MTP/SCS every 4 years. Although the Project is not currently included in the MTP/SCS, the Project is located in an area envisioned for future development by SACOG, and it is consistent with Blueprint principles. This impact would be **less than significant**.

ALTERNATIVE 2

Alternative 2 is substantially consistent with the Project with respect to the principals of the Blueprint and the land use forecasts in the MTP/SCS. Impacts associated with implementation of Alternative 2 would be **less than significant** for the same reasons identified above for the Project.

MITIGATION MEASURES

No mitigation is required.

16 NOISE

INTRODUCTION

This chapter describes the existing noise environment in the Plan Area and the potential of the Project or Alternative 2 to generate noise levels exceeding the applicable exterior noise level standards at noise-sensitive receptors in areas affected by plan implementation. This chapter includes analysis of non-transportation noise, ground borne vibration, and transportation noise impacts at existing land uses that could potentially be affected by the Project or Alternative 2, as well as new proposed land uses that would be developed as part of the Project or Alternative 2. Mitigation measures are included where potentially significant impacts are identified.

During the Notice of Preparation (NOP) scoping process, two comments were raised related to noise. The commenter asked whether the commercial/industrial land use decisions are dictated by noise contours. The commenter also noted that, due to noise constraints, development in the Plan Area is restricted while Sacramento Raceway is in operation. These concerns are addressed below, as applicable. A copy of the NOP and comment letters received in response to the NOP are included in Appendix INT-2 of this 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 billionths (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 of 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 1,000–5,000 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. 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 from traffic 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 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 10:00 p.m. and 7:00 a.m. (Caltrans 2013a:2-48, FTA 2006:2-22).

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 10:00 p.m. and 7:00 a.m. and a 5-dB penalty applied to the sound levels occurring during evening hours between 7:00 p.m. and 10:00 p.m. (Caltrans 2013a:2-48). Many agencies and local jurisdictions in California 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 provide 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.

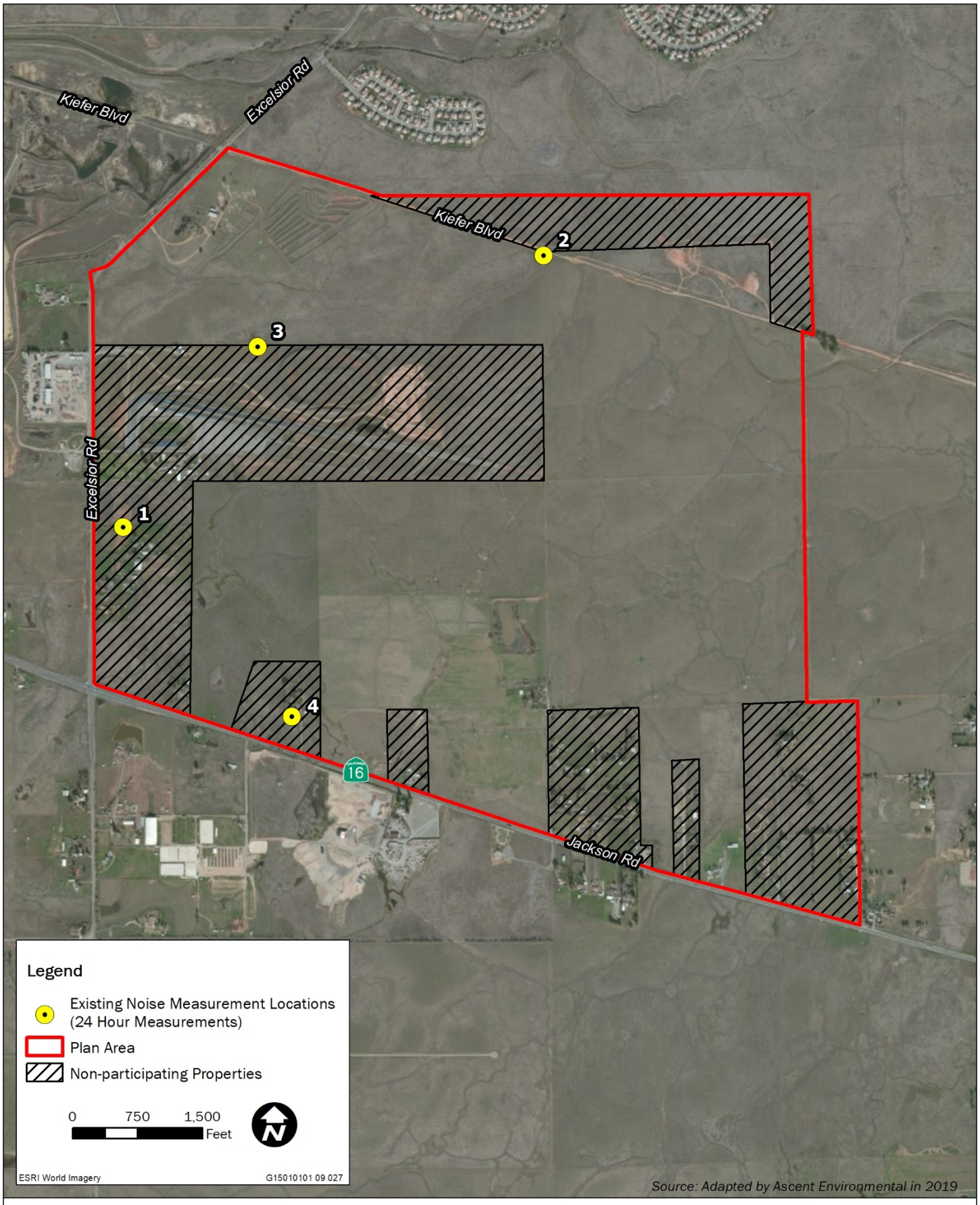
SHIELDING BY NATURAL OR HUMAN-MADE FEATURES

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 CONDITIONS

EXISTING NOISE LEVELS

To generally quantify existing ambient noise levels in the project vicinity, continuous 24-hour background noise measurements were conducted at four locations around the Plan Area. The ambient noise measurement locations are shown on Plate NOI-1. Table NOI-4 includes the noise levels from the four noise measurement locations. Larson Davis Laboratories (LDL) Model 820 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with an LDL Model CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (J.C. Brennan and Associates 2019).



Source: Adapted by Ascent Environmental in 2019

Plate NOI-1: Noise Measurement Locations

ASCENT ENVIRONMENTAL

Table NOI-4: Summary of Existing Background Noise Measurement Data

Site	Date	Notes	Measured Noise Levels, dB						
			L_{dn}	Daytime (7am-10pm)			Nighttime (10pm-7am)		
				L_{eq}	L_{max}	L_{50}	L_{eq}	L_{max}	L_{50}
1	August 5, 2013	On-site 365 feet from centerline of Excelsior Road	53.3	49.1	66.1	44.9	46.4	60.9	42.3
	August 6, 2013		55.7	52.9	71.1	46.4	48.2	61.7	42.8
2	August 5, 2013	On-site proposed Kiefer Blvd, 4,140 feet east from Excelsior Toad and 6,360 feet from Jackson Road	50.9	51.5	61.4	36.8	39.7	50.0	39.9
	August 6, 2013		50.4	49.0	66.6	39.9	42.1	53.8	38.8
3	*August 10, 2013	On-site 825 feet north of center racetrack	66.6	68.6	80.6	50.2	40.0	40.7	37.4
	August 11, 2013		47.0	44.1	61.7	36.1	39.6	52.2	34.3
4	*August 10, 2013	On-site, 365 feet from centerline of Jackson Rd	56.4	52.2	66.0	49.9	49.5	63.9	44.0
	August 11, 2013		54.8	50.5	65.5	47.2	47.9	62.6	40.0

Notes: dB = decibels; L_{dn} = day-night average noise level; L_{max} = the highest instantaneous sound level measured during a specified period; L_X = the sound level exceeded for a given percentage of a specified period. Numbers are approximate due to rounding; * Indicates a Race Event Day

Refer to Appendix NOI-1 for detailed modeling input data and output results.

Source: J.C. Brennan & Associates, Inc., 2019

Existing Traffic Noise Levels

The noise study prepared for the Project included modeling of existing traffic noise levels along roadways in the vicinity of the Plan Area. Noise levels are presented in terms of L_{dn} at a reference distance of 100 feet from the centerlines of the existing and existing plus Project roadways in the area that were identified as potentially affected by Project implementation in the Transportation Report (see Appendix TC-1). Reported noise levels were generally between 60 L_{dn} and 70 L_{dn} and range from a low measurement of 50 L_{dn} on Eagles Nest Road to 74 L_{dn} on Watt Avenue. For full details on traffic noise modeling (e.g., noise contours), see Appendix NOI-1.

Mather Airport Noise Levels

The Mather Airport is located approximately 1.2 miles from the northwest corner of the Plan Area. Plate AC-2 in Chapter 7, Airport Compatibility," shows the locations of the noise contours associated with aircraft operations at the Mather Airport. Based upon the location of the 60 dB CNEL noise contour, the Plan Area is approximately 1,869 feet outside of the existing Mather Airport 60 dB CNEL contour.

Sacramento Raceway Park Noise Levels

The Sacramento Raceway Park is in the northwest quadrant of the Plan Area. Activities at the raceway generally occur throughout the year. The primary race events include pro-drag races, street-legal drag races, motorcycle races, and stock car racing, as well as other non-race events such as swap meets and concerts. The raceway includes a drag strip, a motocross dirt track, and an oval track.

As mentioned in Chapter 2, “Project Description,” raceway operations are not County-permitted as the land uses are non-conforming. However, because the facility operates throughout the year, noise from raceway events are considered in this analysis. Both continuous and short-term noise level noise measurements were conducted at the raceway during racing events in 2013. These measurements are considered representative of existing conditions because the current level of activity at the Sacramento Raceway is similar to that occurring in 2013. Noise level measurements were conducted for a motorcycle race, a pro-drag race, and a street-legal drag race. The noise level measurements were conducted to determine the L_{max}, hourly average L_{eq}, and the hourly median (L_{50}) noise levels associated with each of the race events. The 75 dB L_{max} and the 55-dB hourly L_{50} noise level contours of the events are shown in Plate NOI-2, Plate NOI-3, and Plate NOI-4.

The drag strip noise contours, shown in Plate NOI-2, cover a substantial portion of the Plan Area and extend west onto the West Jackson Highway Master Plan Area. Plate NOI-3, which shows the street legal drag strip noise contours, indicates that the 75 dB L_{max} contour also covers a substantial portion of the Plan Area. Plate NOI-4, which shows the motorcycle race contours, indicates that the noise from the motorcycle race is contained within a fairly small area of the Plan Area.

Existing Sensitive Receptors

Existing sensitive receptors include a set of single-family homes approximately 415 feet from the southern border of the Plan Area along the south side of Jackson Road (also referred to as Jackson Highway). The nearest primary outdoor activity area for these residential units is approximately 375 feet from the southern boundary of the Plan Area. Additional sensitive receptors include a single-family home approximately 50 feet east of the Plan Area, a set of single-family homes approximately 800 feet north of the Plan area, and a single-family home approximately 250 feet west of the Plan Area. There are also several single-family residential homes located within the Plan Area. These include residential units along the north side of Jackson Road and residential units along the southern portion of Excelsior road between Jackson Road and Kiefer Boulevard.

Source: Image provided by J.C.Brennan & Associates

X18010101.09 093

Plate NOI-2: Sacramento Raceway Noise Contours (Drag Strip Race)

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Source: Image provided by J.C.Brennan & Associates

X18010101.09 094

Plate NOI-3: Sacramento Raceway Noise Contours (Street Legal Drag Strip)

ASCENT ENVIRONMENTAL

Source: Image provided by J.C.Brennan & Associates

X18010101.09 095

Plate NOI-4: Sacramento Raceway Noise Contours (Motorcycle Race)

ASCENT ENVIRONMENTAL

REGULATORY SETTING

FEDERAL

There are no federal regulations related to noise that apply to the Project.

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 (EPA) 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-5 presents recommendations for levels of vibration that could result in damage to structures exposed to continuous vibration.

Table NOI-5: 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 2030 General Plan policies related to noise are applicable to the Project.

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-6. Where the noise level standards of NOI-6 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-6 standards.

Table NOI-6: Noise Standards for New Uses Affected by Traffic and Railroad Noise

New Land Use	Sensitive[1] Outdoor Area – L_{dn}	Sensitive Interior[2] Area – L_{dn}
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

Notes:

1. Sensitive areas are defined in the acoustical terminology section.
2. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions.
3. Where there are no sensitive exterior spaces proposed for these uses, only the interior noise level standard shall apply.
4. 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.
5. 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.

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 in Table NOI-7. Where the noise level standards of NOI-7 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 standards within sensitive areas.

Table NOI-7: Sacramento County Non-Transportation Noise Standards

New Land Use	Sensitive Outdoor Area[2] [Median (L_{50}) / Maximum (L_{max})[1]]		Sensitive Interior Area[3] [Median (L_{50}) / 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:

1. 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.
2. Sensitive areas are defined acoustic terminology section
3. Interior noise level standards are applied within noise-sensitive areas of the various land uses, with windows and doors in the closed positions
4. Outdoor activity areas of transient lodging facilities are not commonly used during nighttime hours.
5. 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.
6. The outdoor activity areas of these uses (if any), are not typically utilized during nighttime hours.
7. 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-6 requirements. If projected post-project traffic noise levels at existing uses exceed the noise standards of Table NOI-6, then feasible methods of reducing noise to levels consistent with the Table NOI-6 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-6 and the increase is significant as defined below, feasible methods of reducing noise to levels consistent with the Table NOI-6 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-8: Sacramento County Noise Significance Thresholds

Pre-Project Noise Environment (L_{dn})	Significant Increase
Less than 60 dB	5+ dB
60 – 65 dB	3+ dB
Greater than 65 dB	1.5+ dB

Source: 2030 General Plan, Noise Element

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 years) 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-6 and NOI-7 (*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-6 or NOI-7 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-6 and NOI-7 (*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.

COMMUNITY PLANS

CORDOVA COMMUNITY PLAN

The Cordova Community Plan does not contain objectives related to noise that would apply to the Project.

VINEYARD COMMUNITY PLAN

The Vineyard Community Plan incorporates applicable General Plan policies that relate to noise conditions as a land use constraint; there are no additional policies that would apply to the Project.

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 1-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, and time of day, 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, 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 residential zoning districts. The lots directly adjacent to the Plan Area include properties zoned for agricultural, industrial, and special planning area (SPA) uses. Agricultural – 160 acres (AG-160) and Light Industrial (M-1) to the west, Interim - Agricultural Reserve (IR) and Mather Field Special Planning Area (SPA).

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 near the City of Rancho Cordova, whose city boundary runs along Sunrise Boulevard. Traffic generated by the Project could result in traffic noise increases on roadways within the City of Rancho Cordova. 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 2030 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 Project includes its own set of Design Guidelines (Appendix B of the Jackson Township Specific Plan), which incorporate the Countywide Design Guidelines while providing for further specificity for certain unique elements of the Plan Area, namely for the Town Center District and Greenbelts and Open Space. The remainder of the Plan Area is subject to the Countywide Design Guidelines, including the following design policies, which pertain specifically to addressing noise impacts for development projects.

2.2.2 LOT SIZE AND CONFIGURATIONS

Each project that proposes to divide land should result in lots that are consistent with and well suited to the land use designations and policies set forth in the General Plan and in any adopted community plans, including both maps and texts. Potential population densities of residential lots should not exceed the densities set forth in the General Plan or community plans, or unless otherwise specified in the Zoning Code

- Lots that back onto an arterial roadway or are adjacent to a land use with a higher intensity nonresidential zoning classification should incorporate landscaped buffer areas and deeper rear yards to mitigate potential noise, air quality, aesthetics, and land use compatibility impacts.

3.2.1 NEIGHBORHOOD COMPATIBILITY

Multifamily developments should be compatible with surrounding neighborhoods while providing a quality living environment. Good site planning and project design should minimize impacts on existing and planned adjacent uses. Project design should address traffic, relationship or access to transit, parking, circulation and safety issues, particularly for pedestrians, control of light and glare, noise, odors, dust, air quality, and security. Site layout and design should create a clear definition and relationship between the public and private realm. Neighborhood compatibility can be achieved through control of semi-public and semi-private spaces, landscape, lighting, access, and building details to improve the safety and security of residents.

- Set back parking adjacent to dwelling units to provide a buffer between the parking area and living areas and to reduce the potential impacts of noise and light on adjacent residences. Provide appropriate buffers through a combination of landscaping, walkways, private outdoor patios and/or low walls.

3.2.2 SETBACKS

Setbacks of multifamily residential structures should be compatible with the character and setback along the street and surrounding neighborhood. Multifamily developments constructed adjacent to single-family residences should reflect the larger setbacks of the neighborhood, whereas reduced setback may be appropriate in more urban areas.

3.3.1 BUILDING DESIGN

Building design elements shall respect, enhance, and contribute positively to the predominant characteristic of existing developments in the neighborhood. Variety and distinctiveness in design is desirable.

- Use double glazed windows, glass block, roof top sky lights, and opaque window glass to reduce noise and visual intrusion into adjoining units.

3.4.4 SERVICES AND UTILITIES

Multifamily developments should provide easily accessible service facilities to all dwelling units that should not be visible from the street to the greatest extent possible.

- Locate trash collection areas and facilities so as to minimize noise intrusion on on-site and adjacent offsite living areas.

4.2.6 DRIVE-THROUGH BUSINESSES AND AUTOMOBILE SERVICE STATIONS

This section provides guidance for the development and review of drive-through businesses, as well as automotive service stations, automobile repair centers, and automobile washes, which are frequently provided in combination with each other.

- Locate noise-generating uses, including drive through speakers and music, repair shop operations and machinery, car wash openings, vacuum stations, loading and refuse areas and stacking lanes away from sensitive uses (e.g., housing, schools, and day care centers). Where this cannot be avoided, buffer noise impacts with landscaping or landscaped berms and attenuating fencing in accordance with the landscape and screening requirements of the County Zoning Code.

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.

- Unnecessary tall concrete block sound walls should not separate commercial uses from residential uses. Where sound walls exist or are necessary, breaks in the sound walls shall be provided for access from adjacent neighborhoods and designed as “live-ends.”
- Placing loading and service areas adjacent to residential areas is discouraged. Site circulation and placement of loading areas should be incorporated into the project so that it is screened and held back from residential areas. Where screening walls are required, they shall be designed as a natural extension of the architectural and landscaping concepts for the project. Evergreen trees should be used for screening and to help with noise reduction.
- Automotive and service bays should orient away from residential development and public streets. Service bays should not dominate the public street frontage.

3.2.6 CIRCULATION

The visual prominence of vehicles should be minimized by siting parking areas to the rear or side of the property rather than along street fronts, and by providing underground or partially underground parking. Surface parking areas should be screened from views exterior to the site. Parking shall be designed to minimize potential pedestrian-vehicle conflicts. Parking areas should incorporate good designs that include: trees, lighting, landscaped stormwater features, cool and pervious pavement and pavers. A larger number of smaller parking areas are preferred to a smaller number of large parking areas. Parking should be configured to reduce the distance between a resident's parking space and dwelling unit.

Set back parking adjacent to dwelling units to provide a buffer between the parking area and living areas and to reduce the potential impacts of noise and light on adjacent residences. Provide appropriate buffers through a combination of landscaping, walkways, private outdoor patios and/or low walls.

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.

- Business hours should generally be confined to between 6:00 a.m. and 11:00 p.m., and may be further reduced depending on proximity to nearby residential uses.
- Noise generating activities, such as loading and unloading, should be confined to normal business hours and should be minimized during the early and late hours, especially when located near residential uses. Compliance with the County Noise Ordinance is required.

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.

IMPACTS AND ANALYSIS

SIGNIFICANCE CRITERIA

Based on the CEQA Guidelines, a noise impact would be significant if implementation of the Project would result in:

1. Exposure of persons to or generation of noise levels in excess of standards established in the 2030 General Plan, Zoning Code and Noise Ordinance regarding exterior noise levels, specifically Sacramento County's non-

transportation noise standards established in Table NOI-7 and transportation noise standards established in Table NOI-8;

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-5 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 2030 General Plan standards for exterior noise levels from non-transportation noise sources shown in Table NOI-8 are used as significance thresholds.

Issues not Discussed Further

The 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 are not discussed further.

Potential exposure to excessive noise levels associated with airport operations are discussed in the Chapter 7, “Airport Compatibility,” and are not discussed further in this chapter.

Methodology

Construction-Related Noise and Vibration

Predicted noise levels at nearby noise-sensitive land uses were modeled using typical reference noise levels and load factors 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 on the Jackson Township Specific Plan proposed land uses included in Table PD-2 in Chapter 2, “Project Description.” To remain conservative, construction noise was modeled for construction phases that typically use the loudest equipment (e.g., demolition, site preparation). The construction noise modeling also assumes that, because construction of the Project would take place over many years, noise sensitive land uses to be built from the initial development 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 in this modeling scenario included an excavator, dozer, dump truck, front end loader and grader operating simultaneously.

Construction activities in the Plan Area 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 NOI-3).

Traffic Noise Increases at Existing Receptors

Traffic noise levels were modeled as part of the noise study conducted for this EIR (J.C. Brennan & Associates 2019, Appendix NOI-1). Traffic noise modeling was conducted using the FHWA Traffic Noise Prediction Model (FHWA RD-77-108). 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, existing-plus-Project, and existing-plus-Alternative 2 conditions for affected roadway segments were modeled. The existing-plus-Alternative 2 scenario was also included in the modeling because the Alternative 2 scenario includes a significant decrease in the amount of land uses to be developed compared to the Project. 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 would be constructed or widened as a result of buildout of the Project, future roadway widths were assumed to be the same as other existing roadways with similar characteristics (i.e., number of lanes). 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. 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. For complete details on model inputs, outputs, and assumptions see Appendix NOI-1.

Impact: Construction Noise that Exceeds County Standards

Proposed Project

Construction activity associated with the development of land uses included in the Project, as well as related infrastructure would result in construction noise, although construction noise would be temporary in nature depending on the characteristics of the construction activity, the land uses being developed, and duration of construction activities occurring in any one location. Noise associated with the construction of buildings, facilities, and infrastructure would be associated with the operation of off-road construction equipment including excavation equipment, material handlers, and portable generators. Noise levels associated with construction activity is of increased concern during nighttime hours (i.e., 8:00 p.m. to 6:00 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) near the construction

activity. Table NOI-11 provides a list of the typical noise levels associated with the various individual pieces of off-road construction equipment.

Table NOI-11: 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 2, “Project Description,” Project implementation would involve the development of various land uses in the Plan 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 would be anticipated to occur over the buildout period, ending in 2035. Due to the long-term phased nature of development that would occur, construction noise would generally occur at different sites within the Plan Area, not affecting any one location for extended periods of time.

Construction noise modeling assumed five pieces of equipment could be operating simultaneously at any one location in the Plan Area. Noise modeling also included a construction scenario for the potential use of an impact pile driver in addition to five other pieces of equipment. Construction noise modeling was compared to Table NOI-7 which are the Exterior Noise Standards included in the 2030 General Plan Noise Element as well as rules in Section 6.68.070 of the Sacramento County Code pertaining to noise.

Construction noise modeling results show that typical construction noise levels could be as high as approximately 93 L_{eq} dB and 97 L_{max} dB at 25 feet. Construction activity which included an impact pile driver could reach approximately 97 L_{eq} dB and 98 L_{max} at 25 feet. The 2030 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-7, the thresholds 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 (7:00 a.m. to 10:00 p.m.) and a median level (L_{50}) of 50 dB and a maximum level (L_{max}) of 70 dB during nighttime hours (10:00 p.m. and 7:00 a.m).

Modeled construction noise levels would exceed 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

8:00 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. Additionally, the exemption states that when unforeseen or unavoidable conditions occur, construction activity may continue past 8:00 p.m. until the specific project work can be completed.

As discussed, construction activity associated with Project implementation would potentially exceed the County'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. However, noise-sensitive land uses developed in the Plan Area or existing sensitive receptors in the Plan Area may be adversely affected by construction activity from the subsequent phases of Project development. In Sacramento County, construction activity that results in noise levels 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 50.1 L_{eq} dB and 52.4 L_{max} dB at a distance of 5,300 feet, which would exceed the 50 L_{eq} exterior noise standard detailed in the County Noise Control Ordinance (listed in Table NOI-9).

Additionally, it is assumed that the average exterior-to-interior noise level reduction of 25 dBA typically provided by residential buildings with the windows closed (Caltrans 2002). If construction with a pile driver were to occur within 1,685 feet of buildings which included sensitive receptors, noise levels would reach 60.1 L_{eq} and 62.3 L_{max}, which would exceed the County's interior noise standards of 35 L_{eq}/L_{50} and 55 L_{max}, accounting for the 25 dBA noise level reduction provided by the by the building. As a result, nighttime construction activity associated with Project implementation could result in impacts to sensitive receptors. This would be a **potentially significant** impact.

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 activities comply with the County's noise standards. If applicable hourly and continuous 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, 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. It is estimated that the noise level reductions achieved by this set of measures (i.e., up to 10 dB), specifically the restriction on the use of pile drivers during nighttime hours and use of temporary noise curtains, would result in construction noise levels as high as approximately 83 L_{eq} dB and 87 L_{max} dB at 25 feet. Construction activity resulting in these noise levels even with mitigation would still exceed the County's construction exterior noise standard of 50 L_{eq} dB and 70 L_{max} dB during nighttime hours (10:00 p.m. and 7:00 a.m). In addition, considering exterior noise standards are set such that when met, interior noise standards would also be met, interior noise standards would also be exceeded.

Therefore, with the implementation of Mitigation Measure NOI-1, this impact would be **significant and unavoidable.**

Alternative 2

Alternative 2 would increase the wetland preserve on the eastern boundary of the Plan Area, but would include a similar mix and configuration of land uses compared to Project. Introduction of new noise sensitive land uses under these alternatives could still result in noise sensitive land uses (e.g., residential, schools) being developed and occupied before the development of adjacent land uses. Similar to this impact under the Project, sensitive receptors could be exposed to construction noise levels above the Sacramento County noise standards if development of land uses adjacent to the sensitive receptors were to occur during nighttime hours. As a result, construction noise impacts would be **potentially significant**. Similar to the Project scenario, Mitigation Measure NOI-1 would be implemented. However, even with the implementation of Mitigation Measure NOI-1 construction activity could still exceed the County's construction exterior noise standard of 50 L_{eq} dB and 70 L_{max} dB during nighttime hours (10:00 p.m. and 7:00 a.m). In addition, considering exterior noise standards are set such that when met, interior noise standards would also be met, interior noise standards would also be exceeded. Therefore, with the implementation of Mitigation Measure NOI-1, this impact would be **significant and unavoidable.**

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 8:00 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.

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 and Sacramento County. 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 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.
- No pile driving activity shall occur in the between 8:00 p.m. and 6:00 a.m. on Monday through Friday, and between 8:00 p.m. and 7:00 a.m. on Saturday and Sunday.
- 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 and be designed to result in a 10-dBA reduction at the sensitive receptor location.

IMPACT: GENERATE CONSTRUCTION VIBRATION

PROPOSED PROJECT

The use of off-road heavy-duty construction equipment, as well as other construction equipment (e.g., impact pile driver), could 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. The specific types of equipment and construction activities that would be used during construction of the Project are not known at this time but are assumed to be typical of construction activity associated with land uses included in the Project. Table NOI-12 provides a list of vibration levels typically associated with various pieces of construction equipment.

Table NOI-12: Typical Construction Equipment Vibration 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 CNEL (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 could result in a detectable low rumbling sound 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 could also cause annoyance for receptors located at noise-sensitive land uses where sleep typically occurs, such as 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 lifetime of the Project development. The phased development of the Project could potentially result in construction activity involving pile drivers near new sensitive receptors that would 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. If vibration-inducing construction activity were to occur at these distances, it could result in disturbance to sensitive receptors if occurring within 550 feet or possible structural damage if occurring in 100 feet. This would be a **potentially significant** impact.

Implementation of Mitigation Measure NOI-2 would serve to reduce potential impacts from the use of pile drivers during construction activities 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 be **less than significant with mitigation**.

ALTERNATIVE 2

Alternative 2 would include a similar mix and configuration of land uses compared to Project. Similar to this impact under the Project, vibration-inducing construction activity could occur within 550 feet or within 100 feet of sensitive land uses with new sensitive receptors, resulting in disturbance or possible structural damage. As a result, construction-related vibrational impacts would be **potentially significant**. 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 be **less than significant with mitigation**.

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.

IMPACT: OPERATIONAL TRAFFIC NOISE

PROPOSED PROJECT

Project implementation would result in the generation of new vehicle trips from the development of new land uses in the Plan Area. These new vehicle trips would result in traffic volume increases and subsequent increases in traffic-related noise levels on roadway segments surrounding the Plan Area. Based on the noise study conducted for this EIR, traffic volume increases from the Project along affected roadways would result in increases in traffic noise levels which have the potential to cause disturbance to new or existing sensitive receptors. Table NOI-13 includes traffic volume noise levels for roadways included in the noise study for both existing conditions and existing plus project conditions. The existing condition roadway noise levels are presented as a range of the lowest and highest noise levels along each roadway segment. For more detailed information regarding the noise level along each individual roadway segment see Appendix NOI-1. The individual roadway segments shown to exceed the Sacramento County or the City of Rancho Cordova transportation noise standards are discussed individually following Table NOI-13.

Table NOI-13: 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	**68-70**	68-71
Calvine Road	Waterman Road	Excelsior Road	**62-67**	63-68
Chrysanthy Boulevard	Sunrise Boulevard	Rancho Cordova Pkwy	60	60
Douglas Road	Mather Boulevard	Grant Line Road	60-62	60-63
Eagles Nest Road	Kiefer Boulevard	Grant Line Road	50-55	59-60
Elder Creek Road	65th St	Excelsior Road	58-66	64-66
Elk Grove-Florin Road	Florin Road	Gerber Road	**68**	68
Excelsior Road	Kiefer Blvd	Sheldon Road	59-61	61-66
Florin Road	Stockton Blvd	Sunrise Blvd	**62-70**	64-70
Folsom Blvd	Howe Ave	Jackson Road	**69**	69
Fruitridge Road	65th Street	Power Inn Road	**55-66**	64-67
Grant Line Road	White Rock Road	Bond Road	**64-70**	65-70
Happy Lane	Old Placerville Road	Routier Extension	57	59
Hedge Avenue	Jackson Road	Rock Creek Parkway	57-58	57-58
Howe Avenue	US 50	Folsom Boulevard	**71**	71
International Dr	Mather Field Road	Sunrise Boulevard	**63-66**	63-66
Jackson Road	Folsom Boulevard	Grant Line Road	**65-69**	66-72
Kiefer Boulevard	Florin Perkins Road	Rancho Cordova Parkway	**55-66**	57-67
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	60	61
Mather Field Road	US 50	Peter A McCuen Boulevard	**66-71**	66-71
Mayhew Road	Folsom Boulevard	Fruitridge Road	56-62	55-63
Old Placerville Road	Bradshaw Road	Rockingham Drive	62-63	62-63
Power Inn Road	Folsom Boulevard	14th Avenue	**69**	69

Roadway	Segment		Noise Level Range (L_{dn} dB) at 100 feet from Roadway Centerline	
	From	To	Existing Conditions	Existing plus Project Conditions
Rockingham Drive	Old Placerville Road	Mather Field Road	**66**	67
South Watt Ave	Folsom Blvd	Florin Road	**68-71**	68-71
Sunrise Boulevard	US 50	Grant Line Road	**65-71**	65-71
White Rock Road	International Drive	Prairie City Road	**58-66**	58-66
Zinfandel Drive	US 50	Kiefer Boulevard	**58-69**	62-69

Notes: dB = decibels; Ldn = day-night average noise level; Numbers are approximate due to rounding

Refer to Appendix NOI-1 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: J.C. Brennan & Associates, Inc., 2019

As shown in Table NOI-13, the majority of roadway segments surrounding the Plan Area would experience a traffic noise level increase as a result of Project implementation. However, one roadway segment with sensitive receptors (Excelsior Road between Jackson Road and Elder Creek Road) would experience traffic noise increases which would exceed Sacramento County's transportation noise standard of 65 dB L_{dn} (see Appendix TC-1 for full traffic noise analysis tables). Zinfandel Drive between White Rock Road and International Drive would also experience a noise level increase from 65 to 66 dB L_{dn}. However, there are no sensitive receptors or noise sensitive land uses along this segment of Zinfandel Drive. All other affected roadway segments either experience traffic-related noise levels above 65 dB L_{dn} under existing conditions or would not experience a noise level increase above 65 dB L_{dn} under existing plus Project conditions. In regard to the City of Rancho Cordova transportation noise standard, several of the affected roadway segments exceed the City's standard of 60 dB L_{dn} under existing conditions. Under existing plus Project conditions no roadway segments in Rancho Cordova would experience an increase in traffic noise levels above 60 dB L_{dn} that were below this level under existing conditions.

Traffic noise levels along the section of Excelsior Road where traffic noise increases would exceed Sacramento County's transportation noise standard would increase from 61 dB L_{dn} under existing conditions to 66 dB L_{dn} under existing plus Project conditions. However, the land on either side of this segment of Excelsior Road, which is south of the southwestern corner of the Plan Area, is currently zoned as Agricultural with a Surface Mining Overlay area for several parcels on the west side of this segment of Excelsior Road. There are several sensitive receptors (single-family residential units) along this portion of Excelsior Road that would experience an increase in traffic noise levels above 65 dB L_{dn} as a result of Project implementation. Project implementation would result in traffic-related noise increase that would exceed the County's transportation noise standard of 65 dB L_{dn}. Therefore, this impact would be **significant**.

Mitigation Measures NOI-3 could reduce traffic noise levels along affected roadways. However, it is not known whether the mitigation measure would fully reduce traffic noise levels along affected roadways to below Sacramento County's transportation noise standard of 65 dB L_{dn} because there is no guarantee that residents would accept the offer of a sound barrier. Mitigation Measures NOI-4 would reduce the traffic noise levels between 4 to 6 dB along this segment of Excelsior Road, resulting in a noise level of 60 to 62 dB L_{dn} and below Sacramento County's transportation noise standard of 65 dB L_{dn}. However, implementation of Mitigation Measures NOI-4 would occur during the next repaving of this roadway segment or during any roadway widening project that would occur on this roadway segment. As a result, the traffic noise impact occurring on this roadway segment (Excelsior Road between Jackson Road and Elder Creek Road) may occur before Mitigation Measures NOI-4 is implemented, resulting in an impact to sensitive receptors along this roadway segment. Therefore, this impact would be **significant and unavoidable.**

ALTERNATIVE 2

Alternative 2 would increase the wetland preserve on the eastern boundary of the Plan Area. Alternative 2 would result in a 45.5-acre increase in area designated wetland preserve compared to the Project and decrease the overall area that would be developed in the Plan Area. As a result, associated traffic volume increases would be less than those compared to the Project. Table NOI-14 includes roadway segments that would experience traffic-related noise increases as a result of implementation of Alternative 2.

Table NOI-14: Predicted Existing Plus Alternative 2 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	68-71	71
Calvine Road	Waterman Road	Excelsior Road	62-67	68
Chrysanthy Boulevard	Sunrise Boulevard	Rancho Cordova Pkwy	60	60
Douglas Road	Mather Boulevard	Grant Line Road	60-63	63
Eagles Nest Road	Kiefer Boulevard	Grant Line Road	50-55	59
Elder Creek Road	65th St	Excelsior Road	**58-66**	66
Elk Grove-Florin Road	Florin Road	Gerber Road	**68**	68
Excelsior Road	Kiefer Blvd	Sheldon Road	59-61	65
Florin Road	Stockton Blvd	Sunrise Blvd	**62-70**	70
Folsom Blvd	Howe Ave	Jackson Road	**69**	70
Fruitridge Road	65th Street	Power Inn Road	**55-66**	67

Roadway	Segment		Noise Level Range (L_{dn} dB) at 100 feet from Roadway Centerline	
	From	To	Existing Conditions	Existing plus Project Conditions
Grant Line Road	White Rock Road	Bond Road	**64-70**	70
Happy Lane	Old Placerville Road	Routier Extension	57	59
Hedge Avenue	Jackson Road	Rock Creek Parkway	57-58	58
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**	72
Kiefer Boulevard	Florin Perkins Road	Rancho Cordova Parkway	**55-66**	66
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	60	61
Mather Field Road	US 50	Peter A McCuen Boulevard	**66-71**	71
Mayhew Road	Folsom Boulevard	Fruitridge Road	56-62	63
Old Placerville Road	Bradshaw Road	Rockingham Drive	62-63	63
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	**67-71**	71
Sunrise Boulevard	US 50	Grant Line Road	**65-71**	71
Vineyard Road	Gerber Road	Calvine Road	59	60
Watt Avenue	US 50	Folsom Boulevard	**74**	74
White Rock Road	International Drive	Prairie City Road	**58-66**	67
Zinfandel Drive	US 50	Kiefer Boulevard	**58-69**	69

Notes: dB = decibels; L_{dn} = day-night average noise level; Numbers are approximate due to rounding

Refer to Appendix NOI-1 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: J.C. Brennan & Associates, Inc., 2019

Traffic volumes and subsequent traffic-related noise increases associated with implementation of Alternative 2 would be lower on some roadways when compared to the Project. As an example, under existing plus Project conditions (see Table NOI-13), traffic noise levels along Excelsior Road between Jackson Road and Elder Creek Road would

increase from 61 dB L_{dn} under existing conditions to 66 dB L_{dn} and traffic noise increases would exceed Sacramento County's transportation noise standard of 65 dB L_{dn} (see Table NOI-6). However, under existing plus Alternative 2 conditions (see Appendix TC-1 for full traffic noise analysis tables), Excelsior Road between Jackson Road and Elder Creek Road would only increase from 61 dB L_{dn} to 65 dB L_{dn}, compared to 66 dB L_{dn} for the Project and, therefore, would not exceed Sacramento County's transportation noise standard of 65 dB L_{dn}. As shown in Table NOI-14, implementation of Alternative 2 would not result in traffic-related noise increases that would exceed any Sacramento County noise standard. In regard to the City of Rancho Cordova transportation noise standard, several of the affected roadway segments exceed the City's standard of 60 dB L_{dn} under existing conditions. However, under existing plus Alternative 2 conditions, no roadway segments in Rancho Cordova would experience an increase in traffic noise levels above 60 dB L_{dn} that were below this level under existing conditions. Therefore, this impact would be **less than significant**.

Mitigation Measures

NOI-3: At the time of roadway improvements associated with the Project or Alternative 2, or implementation of the transportation mitigation strategy, install outdoor sound barriers at residential land uses along Excelsior Road between Jackson Road and Elder Creek Road to reduce increases in traffic noise levels associated with those improvements. The sound barriers must be constructed of solid material (e.g., brick, concrete) and designed to reduce noise by at least 5 dB. 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.

NOI-4: Use rubberized hot-mix asphalt along the affected roadway (Excelsior Road between Jackson Road and Elder Creek Road) either (a) at the time the next repaving of this roadway segment occurs or, (b) during any roadway widening project that would occur on this roadway segment.

Pave 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.

IMPACT: EXPOSE NEW OR EXISTING SENSITIVE RECEPTORS TO NEW STATIONARY NOISE SOURCES

PROPOSED PROJECT

This impact assesses the long-term exposure of existing and new 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 Plan Area include several single-family homes adjacent to the southern border of the Plan Area on the south side of Jackson Road, a set of single-family homes 800 feet north of the Plan Area. a single-family home 250 feet west of the Plan Area, and a single-family home 50 feet east of the Plan Area.

Implementation of the Project would result in the development of new land uses which would include new stationary noise sources that may affect new sensitive receptors. Stationary mechanical equipment such as emergency generators, HVAC units would be included in various land uses within the Plan Area (e.g., commercial, residential). Vehicular and human activity in parking lots and commercial activity at loading docks in retail locations would potentially generate noise levels that could exceed Sacramento County's Non-Transportation Noise Standards for various land uses (see Table NOI-7). 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 would include various land uses to be developed over many years. The Project's land use plan (see Plate PD-16 in Chapter 2 of this EIR) 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, which could result in the exceedance of Sacramento County Non-Transportation Noise Standards.

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-7). Given the various land uses included in the Project, each noise-sensitive land use included in the Project is discussed in detail below.

MECHANICAL EQUIPMENT

The Project includes non-residential land uses that could include stationary mechanical equipment resulting in noise levels that would exceed the County's Non-Transportation Noise Standards (see Table NOI-7). As shown in Plate PD-16 in Chapter 2, these land uses include commercial/retail and office. Additionally, these land uses that would be located adjacent to the existing single-family homes along Jackson Road would include low- and high-density residential, mixed-use, general commercial, and office. Typically, noise sources associated with residential land uses include heating, cooling, and air conditioning (HVAC) units, lawn mowers and landscaping maintenance equipment.

Implementation of the Project would include the development of several commercial/retail land uses within the Plan Area. The location of these land uses are adjacent to noise sensitive land uses (i.e., residential) that would also be developed as part of the implementation of the Project. 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 Setting 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 that 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, a typical noise levels typically is 110 dBA at a distance of one meter (3.2 feet) (Berger et al. 2010). Noise levels generated from HVAC equipment vary substantially depending on unit efficiency, size, and location. Generally, HVAC equipment typically generate noise levels of 60 dBA at a distance of six meters (19.6 feet) (Berger et al. 2010).

The specific location of these types of equipment in the commercial land uses relative to adjacent sensitive receptors are not known 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., 55 dBA) if located within 19.6 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., 55 dBA) within 1,000 feet.

For existing land uses, considering that the closest noise sensitive land use (single-family homes along Jackson Road) is located approximately 50 feet east of the Project boundary, HVAC equipment associated with the development of the Project would be more the 19.6 feet from the nearest sensitive receptor and would not result in noise levels that would exceed the County's noise standard. Additionally, although only used in emergency situations, back-up generators could exceed the County's noise standard for mechanical equipment (i.e., 55 dBA) if it were located with within 1,800 feet of the nearest sensitive receptor to the Project boundary.

LOADING DOCK AND DELIVERY ACTIVITY

Commercial land uses 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 onsite 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 could 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., 10:00 p.m. – 7:00 a.m.), loading dock activities within 160 feet could 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 25 dBA typically provided by residential buildings with the windows closed (Caltrans 2002), 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} (see Table NOI-7) at a distance of 50 feet from a loading dock area. The Sacramento County Design Guidelines include design policies for the development of various land uses within the County. Specifically, guidelines under Sections 4.2.8 and 6.3.6 (see Regulatory Settings section, above) encourage that the siting of new loading docks consider noise impacts and be located away from residential areas and use architectural and landscaping strategies to reduce noise impacts.

TRANSMISSION CORONA NOISE AND ELECTRIC SUBSTATIONS

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. Based on information in the Project Description, the new substation would be located at the northwest corner of the General Commercial site located at Jackson Road and Tree View Lane/Grenville Drive. 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 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 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, the substation would be built in a commercial land use and would not be located within 16 feet of any noise-sensitive land uses.

SACRAMENTO RACEWAY

As described in Chapter 2, "Project Description," Project implementation would be phased. The Sacramento Raceway property is a non-participating property that is not envisioned for development consistent with the Jackson Township Specific Plan until the third phase of development. Although raceway operations are not permitted, because the facility is currently in operation, this analysis assumes that events could continue, even after residential development begins. Residential land use could be developed adjacent to the operating raceway under phases 1A and 2 (refer to Plate PD-15 in Chapter 2, "Project Description.")

As shown in Plate NOI-3 and Plate NOI-4 in the Environmental Settings section of this chapter, events at the Sacramento Raceway generate noise levels in excess of 75 L_{max} to the north and south of the raceway in locations designated as noise sensitive land uses in the proposed land use plan. Land uses that would be subjected to noise levels from the raceway above the applicable Sacramento County noise standards include residential land uses to the south of the raceway and residential, park, and school land uses to the north and east of the raceway. If the land uses listed above were developed and occupied, noise generated from the Sacramento Raceway would exceed Sacramento 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} dB during the nighttime for residential and school land uses. The Sacramento Raceway, under this scenario, would also exceed the County's Non-Transportation Noise Standards of 65 L_{50} and 75 L_{max} during the nighttime and 50 L_{50} and 70 L_{max} dB for park land uses.

SUMMARY

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-16 in Chapter 2, "Project Description") provides the 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 that would include stationary equipment and/or new noise generating activity areas could be located in close proximity to existing and/or 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-7) during nighttime hours. As discussed, the Sacramento County Design Guidelines include design policies encouraging that the siting of new loading docks consider noise impacts, 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. Further, development of sensitive land uses adjacent to the Sacramento Raceway could result in noise exposure in excess of applicable standards during Project phasing. Therefore, this impact would be **potentially significant**.

Mitigation Measure NOI-5 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 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 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-6 would serve to reduce exposure to existing sensitive receptors from proposed stationary noise sources including 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. Mitigation Measure NOI-5 would require noise-sensitive land uses that would be exposed to noise from the Sacramento Raceway above applicable standards would be designed in such a way to reduce noise exposure to these land uses. Mitigation Measure NOI-5 would require all applicants to conduct a noise study to demonstrate the site design of these land uses would reduce noise exposure from the Sacramento Raceway to below the County's non-transportation noise standards or show that all design recommendations included in the study would reduce noise exposure to the extent feasible. However, it is not guaranteed that the site design of these land uses would reduce noise exposure from the Sacramento Raceway below the County's applicable standards. No additional feasible mitigation is available to reduce this impact; therefore, this impact would remain **significant and unavoidable**.

ALTERNATIVE 2

Alternatives 2 would increase the portion of the Plan Area designated as wetland preserve; however, the overall level of development would be similar to the Project. Like the Project, the location of new stationary equipment and/or new noise generating activity areas is not fully known at this time. Further, phased development could result in sensitive land uses near the Sacramento Raceway. These alternatives would include a land use configuration in which new stationary noise sources could be located close to sensitive land use, exceed the County's non-transportation noise standards, and cause disturbance to sensitive receptors. As a result, the impact on new sensitive receptors from new or existing stationary noise sources would be **potentially significant**.

Mitigation Measure NOI-5 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. Mitigation Measure NOI-6 would serve to reduce exposure to existing sensitive receptors from

proposed stationary noise sources, including mechanical equipment and loading dock areas, through site design features and site-specific constraints from stationary noise sources. Mitigation Measure NOI-7 would require that noise-sensitive land uses that would be exposed to noise from the Sacramento Raceway above applicable standards be designed in such a way to reduce noise exposure to these land uses. However, it is not guaranteed that the site design of these land uses would reduce noise exposure from the Sacramento Raceway to the below the County's applicable standards. No additional feasible mitigation is available to reduce this impact; therefore, this impact would remain **significant and unavoidable**.

Mitigation Measures

NOI-5: Conduct site-specific noise study and implement recommendations. To prevent future sensitive receptors from disturbance during the sensitive times of the day, all 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 (e.g., building orientation) and building materials as well as exterior design features (e.g., fences, walls, and landscaping features) are sufficient to maintain exterior noise levels on the property 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 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 Applicant or subsequent developer(s) shall implement recommendations of the study that are shown to achieve the standards.

NOI-6: 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 62 feet from existing residential land uses.
- New mechanical generators shall be located a minimum of 1,800 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 or subsequent developer(s) shall provide to the County a specialized noise study to evaluate the 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 or subsequent developer(s) 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.

NOI-7: This mitigation measure would apply to noise sensitive land uses to be developed as part of the Project that would be located in close proximity to the Sacramento Raceway and within the 55 L_{50} or 75 dBA L_{max} contour lines, as depicted in Plate NOI-3, Plate NOI-4, and Plate NOI-5 in the Environmental Settings section of this chapter and in Appendix NOI-1 of this EIR. To prevent future noise sensitive receptors from disturbance associated with the Sacramento Raceway, site design shall adhere to the Jackson Township Specific Plan Design Guidelines and Sacramento County Countywide Design Guidelines to identify design principles and strategies to reduce noise exposure from the Sacramento Raceway to noise sensitive land uses developed as part of the Project. Common design principles to reduce noise exposure to noise sensitive land uses that should be considered during the site design process include:

- increasing the distance between the noise source and the receiver;
- placing nonresidential land uses such as parking lots, maintenance facilities, and utility areas between the source and the receiver;
- locating barrier-type buildings parallel to the noise source;
- orienting the residences and outdoor activity areas for these residences away from the noise source; and
- arranging the site plan to use buildings as noise barriers.

All applicants proposing a noise-sensitive land use in the portion of the Plan Area applicable to this mitigation measure shall, before the issuance of building permits, provide to the County a site-specific noise study prepared by a qualified acoustical engineer addressing exterior noise levels for applicable noise sensitive land uses and interior noise levels in residential units. The noise study shall confirm, using approved calculation methodologies, that building design (e.g., building orientation) and building materials as well as exterior design features (e.g., fences, walls, and landscaping features) are sufficient to maintain, consistent with Sacramento County non-transportation noise standards, 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 or subsequent developer(s) shall implement recommendations of the study that are shown to achieve the standards or implement all recommendations to reduce noise exposure from the Sacramento Raceway to the extent feasible.

IMPACT: SUBSTANTIAL INCREASE IN EXISTING AMBIENT NOISE LEVELS

PROPOSED PROJECT

Project land uses that 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 noise level increases in excess of the Sacramento County Noise Ordinance shown in Table NOI-8 are used as a threshold for determining potential impacts on ambient noise levels. As stated in Table NOI-8 and 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 noise study conducted for the Project, Table NOI-15 includes roadway segments that would experience a substantial increase in traffic noise volumes as a result of Project implementation. Table NOI-15 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-15: Summary of Modeled Substantial Traffic Noise Level Increases from Existing to Existing Plus Project Conditions

2.5	Segment		Noise Levels (L_{dn} dB)		Net Change (dB)
	From	To	Existing Conditions	Existing Plus Project Conditions	
Eagles Nest Road	Jackson Road	Florin Road	54.1	59.7	+5.6
	Florin Road	Grant Line Road	49.8	58.5	+8.7
Elder Creek Road	Bradshaw Road	Excelsior Road	57.9	64.7	+6.8
Excelsior Road	Collector WJ1	Collector WJ2	59.2	64.7	+5.5
	Collector WJ2	Jackson Road	59.2	65.3	+6.1
	Jackson Road	Elder Creek Road	60.5	65.7	+5.2
Jackson Road	Hedge Avenue	Mayhew Road	66.6	68.5	+1.9
	Mayhew Road	Bradshaw Road	67.4	69	+1.6
	Bradshaw Road	Excelsior Road	67.6	70.6	+3.0
	Excelsior Road	Collector JT-3	66.6	71.5	+4.9
	Collector JT-3	Tree View Road	66.6	69.5	+2.9
	Tree View Road	Collector JT-4	66.6	68.3	+1.7
	Collector JT4	Eagles Nest Road	66.6	68.2	+1.6

Notes: dB = decibels; L_{dn} = day-night average noise level; Numbers are approximate due to rounding

Refer to Appendix NOI-1 for detailed modeling input data and output results.

Source: J.C. Brennan & Associates, Inc., 2019

The segment of Eagles Nest Road between Jackson Road and Grant Line Road that would be affected by substantial traffic noise level increases is currently zoned as Agricultural and is located in Sacramento County. There are several sensitive receptors (single-family residential units) along this portion of Excelsior Road, which is an allowed use in areas zoned as Agriculture, that would experience substantial traffic noise level increases as a result of Project implementation.

Land uses along the segment of Elder Creek Road between Bradshaw Road and Excelsior Road are currently zoned as Agricultural and Interim-Agricultural Reserve. This segment of Elder Creek Road does include several single-family homes and a cemetery that would experience substantial traffic noise level increases as a result of Project implementation.

Land uses along the segment of Excelsior Road between the Collector WJ1, a future roadway to be built as part of the West Jackson Highway Master Plan (located just south of Jackson Road) and Elder Creek Road are currently zoned as Agricultural. There are several sensitive receptors (single-family residential units) along this portion of Elder Creek Road that would experience substantial traffic noise level increases as a result of Project implementation.

Land uses along the segment of Jackson Road between Hedge Avenue and Eagles Nest Road are currently zoned as Agricultural, Heavy Industrial, Light Industrial, Recreation, and Residential. This segment of Jackson Road includes several single-family homes, as well as agricultural land use. The traffic increases as a result of Project implementation along the residential portion of Jackson Road would result in substantial traffic noise level increases along this segment (see Table NOI-8).

As shown in Table NOI-15, the roadways that would be affected by Project implementation would experience a substantial increase in noise levels within 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. Implementation of the Project would result in increases in traffic noise levels above the thresholds established for this impact in Table NOI-8. 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 substantial noise level increases as a result of traffic volume increases generated by the Project. Therefore, this impact would be **potentially significant**.

Implementation of Mitigation Measure NOI-8 would require the Project Applicant to offer the owners of residences along affected roadway segments included in Table NOI-15 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-8) applicable to noise sensitive land uses along affected roadway segments. 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 sound barrier.

Mitigation Measure NOI-8 could reduce the incremental increase in traffic noise levels along affected roadways. However, it is not known whether the mitigation measure would fully reduce traffic noise levels along affected roadways 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. Mitigation Measures NOI-9 would reduce incremental traffic noise level increases along affected roadways through the use of rubberized asphalt. However, it is not known whether Mitigation Measure NOI-8 would reduce the incremental traffic noise increase on ambient noise levels to less than significant levels on affected roadways. Therefore, this impact would remain **significant and unavoidable**.

Alternative 2

Alternative 2 would increase the wetland preserve on the eastern boundary of the Plan Area. Alternative 2 would result in a 45.5-acre increase in area designated Wetland Preserve compared to the Project and decrease the overall area that would be developed in the Plan Area. As a result, traffic volume increases associated with development of these land uses would be less than those compared to the Project.

Using data from the noise study conducted for the Project, Table NOI-16 includes roadway segments that would experience a substantial increase in traffic noise volumes as a result of implementation of Alternative 2. Table NOI-16 includes traffic noise levels under existing conditions and existing plus Alternative 2 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 Alternative 2 Conditions

Roadway	Segment		Noise Levels (L_{dn} dB)		Net Change (dB)
	From	To	Existing Conditions	Existing Plus Project Conditions	
Eagles Nest Road	Florin Road	Grant Line Road	49.8	57.9	+8.1
Elder Creek Road	Collector WJ1	Collector WJ2	59.2	64.9	+5.2
Excelsior Road	Collector WJ2	Jackson Road	60.5	65.4	+5.7
	Jackson Road	Elder Creek Road	59.2	65.3	+4.9
	Hedge Avenue	Mayhew Road	66.6	68.6	+2.0
Jackson Road	Mayhew Road	Bradshaw Road	67.4	69	+1.6
	Bradshaw Road	Excelsior Road	67.6	70.6	+3.0
	Excelsior Road	Collector JT-3	66.6	71.5	+4.9
	Collector JT-3	Tree View Road	66.6	69.5	+2.9
	Tree View Road	Collector JT-4	66.6	68.6	+2.0
	Collector JT4	Eagles Nest Road	66.6	68.4	+1.8
	Florin Road	Grant Line Road	66.6	68.2	+8.1

Notes: dB = decibels; L_{dn} = day-night average noise level; Numbers are approximate due to rounding;
Refer to Appendix NOI-1 for detailed modeling input data and output results.
Source: J.C. Brennan & Associates, Inc., 2019

As shown in Table NOI-16, the roadways to be developed as part of Alternative 2 would result in a substantial increase in noise levels within 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. The roadway segments and adjacent land uses that would experience an incremental increase in traffic noise levels under the Alternative 2 are the same roadway segments that would be affected under the Project with the exception of Eagles Nest Road between Jackson Road and Florin Road, which would not experience an incremental increase in traffic noise levels. Because the same roadway segments would experience an incremental increase in traffic noise levels under Alternative 2, the impact on existing ambient noise levels for this alternative would be **significant**.

Mitigation Measure NOI-8 could reduce the incremental increase in traffic noise levels for sensitive receptors along affected roadways. However, it is not known whether the mitigation measure would fully reduce traffic noise levels along affected roadways 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. Mitigation Measure NOI-9 would reduce incremental traffic noise level increases along affected roadways through the use of rubberized asphalt. However, it is not known whether Mitigation Measure NOI-9 would reduce the incremental traffic noise increase to less than significant levels on affected roadways. Therefore, this impact would remain **significant and unavoidable**.

Mitigation Measures

Implement Mitigation Measure NOI-6 and:

NOI-8: At the time of roadway improvements associated with the Project or Alternative 2, or implementation of the transportation mitigation strategy, outdoor sound barriers shall be installed along roadway segments demonstrated to result in a substantial noise level increase as indicated in Table NOI-15 for the Project and Table NOI-16 for Alternative 2. 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 would be 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.

NOI-9: Use rubberized hot-mix asphalt along the affected roadway (Excelsior Road between Jackson Road and Elder Creek Road) either (a) at the time that the next repaving of this roadway segment occurs, or (b) during any roadway widening project that would occur on this roadway segment. If option (c) is chosen, the Project Applicant shall conduct a traffic noise analysis every 2 years after Project approval to determine whether the Projects contribution to roadway volumes results in traffic noise levels along this roadway segment exceeding 65 dB L_{dn}. Pave 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.

17 PUBLIC SERVICES

INTRODUCTION

This chapter describes the existing public services and facilities, including fire protection, law enforcement, public schools, parks, and libraries, and potential effects on services attributable to the Project and Alternative 2. Impacts are evaluated in relation to the actions needed to provide the services that could potentially lead to adverse physical environmental effects. Wastewater (sewer) and solid waste services are addressed in Chapter 20, "Wastewater and Solid Waste Utilities," of this EIR. Water supply is addressed in Chapter 19, "Water Supply," and public transportation is addressed in Chapter 20, "Traffic and Circulation."

The Amador County Chamber of Commerce and the City of Jackson submitted comments on the Notice of Preparation indicating concern that the similarity of the Project name and the City of Jackson could cause confusion for emergency service providers. This issue is discussed below.

ENVIRONMENTAL SETTING

The Project is located within the Urban Services Boundary (USB), but is outside of the Urban Policy Area (UPA). The UPA defines the area expected to receive urban levels of public infrastructure and services within a 20-year planning period. To receive urban public services, land must be within both the UPA and USB. For more information on the USB and UPA, please refer to Chapter 15, "Land Use."

FIRE PROTECTION AND EMERGENCY RESPONSE

The 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 (Metro Fire 2012). 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 uses a response standard of 4 minutes for First Due travel time with an overall reflex time of 7 minutes. The performance standard for an "Effective Response Force" to a building fire incident is to have three engines, one ladder truck, and one battalion chief to the incident within 8 minutes (Frye, pers. comm., 2018). Metro Fire has three stations within 5 miles of the Plan Area, located in Rancho Cordova (Station 68, off Anatolia Drive east of Sunrise Boulevard), Sloughhouse (Station 58 on Sloughhouse Road near Jackson Road [also referred to as Jackson Highway], and Elk Grove (Station 55, on Excelsior Road south of Gerber Road). Metro Fire is currently in the process of planning several more stations 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.

Law Enforcement

The Plan Area is within the service area of the Sacramento County Sheriff's Department (SSD), which provides law enforcement services in the unincorporated county. Local law enforcement services include response to calls for service and trouble spots, investigations, surveillance, and routine patrolling. Demand for law enforcement services grows with population. The County maintains a goal of having one sheriff's deputy per 1,000 residents (Sacramento County 2010). The closest SSD Substation is the Kilgore Station East Division located approximately 7 miles north in Rancho Cordova. 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 Plan Area is within the service area of the Elk Grove Unified School District (EGUSD). The 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, one charter school, one virtual online K-8 program, one special education school and one adult education school (EGUSD 2018). During the 2018-2019 school year, the EGUSD had a total enrollment of 63,917 students (CDE 2019).

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. According to EGUSD's online school locator, Katherine Albiani Middle School is currently overcrowded. Students moving to the Plan Area are being redirected to Smedberg Middle School. Pleasant Grove High School is also currently overcrowded, and students are being redirected to Sheldon High School. EGUSD may adjust attendance boundaries as needed in the future to accommodate changes in population and as new school facilities are built.

The closest school to the Plan Area is Mather Heights Elementary School, which is located less than 1 mile north within the Independence at Mather community and is part of the Folsom Cordova School District. Other nearby schools include Robert J. McGarvey Elementary School and Sunrise Elementary School in the Elk Grove School District, which are located roughly 1.75 miles and 2 miles northeast of the Plan Area, respectively.

Parks and Recreation Services

The Plan Area is located within the Cordova Recreation and Park District (CRPD). The CRDP serves approximately 120,000 residents within the City of Rancho Cordova and the unincorporated communities of 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. CRPD owns and operates 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 2017). The closest parks to the Plan Area are Veterans Park and Independence Park, both located in the Independence at Mather community to the north. In addition, Mather Regional Park, managed by Sacramento County Regional Parks, is located approximately 1 mile northeast of the Plan Area. The Mather Preserve, an actively managed habitat preserve, is located directly north of the Plan Area. Although public access to the preserve is limited, the open space provides some passive recreation opportunities.

Libraries

The Sacramento Public Library System (SPLS), operated by the Sacramento Public Library Authority 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 Sacramento Public Library serves the County of Sacramento, as well as the incorporated cities of Sacramento, Elk Grove, Rancho Cordova, Citrus Heights, Galt, and Isleton. The nearest library to the Plan Area is the Rancho Cordova Library, approximately 3.5 miles northwest of the Plan Area on Folsom Boulevard.

Regulatory Setting

Federal

There are no federal policies or regulations applicable to the analysis of public services.

State

Leroy F. Greene School Facilities Act

The Leroy F. Greene School Facilities Act of 1998 established a State program to provide per-pupil funding for new construction and modernization of existing school facilities. The act limits the power of cities and counties to require mitigation of school facilities as a condition of approving new development and authorizes school districts to assess fees (at various levels) to directly offset the costs associated with increased capacity as a result of new development.

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.

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 Office of Planning and Environmental Review oversees these requirements in the unincorporated area.

Local

Sacramento Local Agency Formation Commission

The Sacramento Local Agency Formation Commission's (LAFCo's) authority is defined in the Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000. Government Code Section 56300 requires that each LAFCo establish policies to provide well-planned urban development, preservation of open space, and orderly formation of local agencies. LAFCo has review authority for annexations to special districts.

Sacramento County Code, 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. As shown in Table PS-1, Title 22 sets a standard of 4.87 acres per 1,000 persons for land dedication or in lieu fees for CRPD based on land use type.

Table PS-1: Title 22 Parkland Dedication Requirements for Cordova Park and Recreation District

Acreage Dedication Requirement	Single Family Residential Factor	Multiple Family Residential Factor	Apartment Cluster Condominium Factor	Mobile Home Factor
4.87 acres per 1,000 residents	0.0142	0.0119	0.0097	0.0094

Source: Sacramento County Code, Section 22.40.045

Sacramento County 2030 General Plan

The following policies of the 2030 General Plan would apply 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.

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.

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.

PF-53: Design neighborhoods and buildings in a manner that prevents crime and provides security and safety for people and property; when feasible.

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.

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.

COMMUNITY PLANS

CORDOVA COMMUNITY PLAN

The Cordova Community Plan, which was last updated in 2003, provides guidance for both new development and the redevelopment of existing land uses within the community planning area. Objectives identified in the plan that are applicable to the Project include:

LU-8: Continue the tradition of joint development of parks and schools.

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.

ROS-6: Encourage developers to work closely with the Cordova Recreation and Park District in the identification and development of new park sites.

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-9: Promote suitable fire protection/prevention measures for all developments.

PS-10: Ensure that all library sites are adequately served by public transit.

PS-11: Promote coordination between the Sheriff and RT in matters related to safety in public transit use.

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.

VINEYARD COMMUNITY PLAN

The Vineyard Community Plan, which was developed in 1985, provides guidance for growth and development in the community planning area. Policies identified in the plan that are applicable to the Project include:

PF 4: Require all residential development proposals submitted to the County for approval be coordinated with the school district.

PF 5: Require development and maintenance of an adequate fire suppression water supply for all new development.

PF 6./FU 3: All types of urban development proposals must be accompanied by a detailed public services plan and specific timing and funding programs for the implementation and maintenance of services.

FIRE DISTRICT MASTER PLANS

Fire District Master Plans provide policy guidance, objectives, and activities to improve emergency response to the districts' citizens, use existing resources more efficiently, and improve district facilities. These plans address deficiencies with existing fire stations, including age and condition issues; noncompliance with building codes; the ability to respond to emergencies following an earthquake; and lack of apparatus rooms of sufficient size to store present-day emergency-response equipment.

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 4 minutes with an overall reflex time of 7 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.

LIBRARY FACILITY MASTER PLAN

The Library Facility Master Plan for SPLS 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 Facility Master Plan 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. Important location criteria includes: land availability, cost, quality of the site, size, accessibility (parking, pedestrian access, public transportation), and synergy/location with other public and private uses.

IMPACTS AND MITIGATION

SIGNIFICANCE CRITERIA

Based on the CEQA Guidelines, a public services impact is significant if implementation of the Project would result in:

- Result in substantial adverse physical impacts associated with the provision of emergency services and fire protection services;
- Result in substantial adverse physical impacts associated with the provision of law enforcement services;
- Result in substantial adverse physical impacts associated with the provision of public school services;
- 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; or
- Result in substantial adverse physical impacts associated with the provision of library services.

ISSUES NOT DISCUSSED FURTHER

All issues identified in the significance criteria are evaluated below.

METHODOLOGY

The following evaluation of potential impacts associated with public services was based on a review of existing services and demand projections from the development of the Project. This analysis assumes that the Plan Area would be developed in a manner generally consistent with the land use diagram and proposed general plan amendments described in Chapter 2, “Project Description.” As such, it is assumed that the UPA would be expanded to include approximately 1,391 acres of the Plan Area and would support 16,955 residents. The calculations of projected demand for public services are based on facility plans or comments received from the applicable public service purveyors.

IMPACT: RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE PROVISION OF FIRE PROTECTION AND EMERGENCY SERVICES

PROPOSED PROJECT

The Project would increase the demand for Metro Fire protection and emergency services. This increase in demand would require additional staff and fire facilities in order to maintain service levels and to ensure that adequate fire protection is provided. Metro Fire estimates that the Project could generate 3,000 calls for service per year at full buildout of the Plan Area (Frye, pers. comm., 2018).

Metro Fire has also expressed concern regarding wildfire potential within the proposed wetland preserve area of the Plan Area and the surrounding wetland preserve areas offsite. Due to the additional potential for risk, Metro Fire has indicated that the proposed fire station should include a structural engine company as well as a wildland fire engine. In addition, based on the Plan Area's location along Jackson Road in an area near several developing areas, Metro Fire has indicated that the fire station within the Plan Area should serve as a larger, more regional-serving station where they can stage personnel and equipment for Metro Fire's Effective Response Force. This would require that the proposed station house additional staff and equipment above and beyond the normal requirements for a standard fire station. This would include the following staff and apparatus, in addition to the structural engine company and wildfire engine mentioned above (Frye, pers. comm., 2018):

- 1 Battalion Chief – 1 staff
- 1 Ladder Truck – 4 staff
- 1 Ambulance – 2 staff

Due to the additional staff and equipment required at this station, the sizing and siting criteria for this fire station varies from what Metro Fire normally requires in a new fire station site. Metro Fire has requested a 3- to 4-acre site located near the southwest corner of the Plan Area that could accommodate five apparatus bays and quarters for 11 or 12 firefighters (Frye, pers. comm., 2018). A final location would be determined in conjunction with Metro Fire representatives and evidence of an agreement would be a condition of Project approval.

This EIR assumes the development of a 4-acre fire station located near, but not directly adjacent to Jackson Road, and near the proposed Town Center, but away from the electrical easement. Any of the proposed large lots located within the Town Center could serve this purpose. If Metro Fire chooses a site owned by the Project Applicant, they would acquire the site by working directly with the Project Applicant; if Metro Fire chooses a site within a non-participating property, they would need to work directly with the property owner for site acquisition. In either scenario, this EIR assumes a fire station meeting the sizing and siting criteria required by Metro Fire would be developed. Metro Fire also requires the installation of an emergency traffic signal on Jackson Road at the proposed fire station location to ensure easy access onto that roadway.

Metro Fire indicates that the fire station should be operational by the time the Project's population density exceeds 1,000 people per square mile; this is estimated to occur

during Phase 1A of construction. Metro Fire acknowledges that it is requesting a site located in either Phase 3 or Phase 4 of the Project (Frye, pers. comm., 2018). However, as stated in Chapter 2, “Project Description,” phasing of the Project has been specifically designed to optimize flexibility so that appropriate infrastructure can be provided if a later phase occurs prior to the completion of earlier phases. Therefore, the design of the infrastructure plans for Phase 3 and Phase 4 would allow for the timely delivery of appropriate infrastructure needed for the future fire station, regardless of the exact site selected by Metro Fire.

The 2030 General Plan contains policies that allow the Board of Supervisors to establish mitigation fees 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. The fire districts that receive such funds must maintain Insurance Service Office ratings of 3 for hydrant areas and 8 for non-hydrant areas and a response time of 5 minutes for emergency calls, where staffing levels are adequate. According to Metro Fire, the station in the Plan Area would enable first response fire protection services to be provided to the entire Plan Area, as well as areas beyond, within 4 minutes of travel time, consistent with their response standard. Additionally, the policies contained in the 2030 General Plan require that new buildings and neighborhoods meet the requirements of the California Fire Code and access and fire hydrants are adequate.

Land within the Plan Area would be dedicated to Metro Fire as a part of the Project. This fire station would serve the entirety of the Plan Area, and no other fire protection or emergency services facilities would be required to serve the Project. Because this facility is located within the Plan Area, the environmental impacts associated with the development of this facility are evaluated throughout this EIR. No additional off-site facilities would be needed. Therefore, impacts associated with fire protection services would be **less than significant**.

Alternative 2

Alternative 2 would result in fewer residents than the Project, but would include the same fire protection facilities. Alternative 2 would have **less-than-significant** impact on fire protection because the proposed fire protection facility would be adequate without any reductions in response time or level of service.

Mitigation Measures

No mitigation is required.

Impact: Impair Emergency Response

Proposed Project

The County received two comments in response to the NOP relating to concerns regarding emergency response from Amador County and the City of Jackson. Both comments, available in Appendix INT-2, express concerns that emergency response dispatchers may experience confusion when responding to emergency calls due to the similarities between the Project name, Jackson Township Specific Plan, and the City of Jackson.

County staff reached out to local emergency responders for additional information on emergency response and the dispatch of emergency calls. Staff from Metro Fire acknowledged that there could be some confusion, particularly for callers not familiar with their location. However, cellular 911 calls are routed to Metro Fire dispatch through the local California Highway Patrol office, which has a high success rate of accurately identifying the location of an incident in order to direct the call to the appropriate emergency responder. Through this process, the number of calls directed to Metro Fire for incidents located in other areas would be minimal. Most cases where locations are confused are primarily due to similar street names in different communities within an emergency responder's jurisdiction, rather than similar community names. While there is always a possibility of confusion due to similar place names and misdirected emergency calls, with the accuracy of California Highway Patrol dispatch and the distance between the Plan Area and the City of Jackson (more than 30 miles), Metro Fire staff did not feel that this was a major concern or risk to the provision of emergency response (Casentini, pers. comm., 2016).

County staff also spoke with staff from the Sacramento Regional Fire/EMS Communications Center (SRFECC), which is responsible for answering and directing 911 calls to appropriate agencies in the Sacramento region. According to SRFECC staff, dispatchers receive location information from callers to assist them in determining the location of the incident and directing the call to the appropriate agency. When calls are received from landlines, dispatchers are provided with the billing address of that phone number to determine location. When calls are received from cell phones, dispatchers receive GPS triangulation data that assists the dispatcher in narrowing down the location of the call. This triangulation data uses signals from the cell phone that bounce off multiple cell phone towers in the area surrounding the caller, which determines a location. While triangulation data does not always reveal exact location, it would be able to differentiate between calls placed from the Plan Area and the City of Jackson, which are more than 30 miles apart. Furthermore, dispatchers are trained to determine location of an incident based on street address or intersection, rather than community name. So, if a caller identified their location as "Jackson Township," the dispatcher is specially trained to get more specific location information from the caller to avoid confusion between community names and forward the call to the appropriate emergency response agency. Based on the distance between the Plan Area and the City of Jackson and dispatchers' extensive training to determine appropriate locations of incidents, SRFECC staff did not feel that the name of the Project would result in confusion of and resultant impacts on emergency responders (Quintard, pers. comm., 2017). Based on the emergency responders' opinions that the Project's name would not result delays to emergency response, this impact would be **less than significant**.

Alternative 2

Alternative 2 would also be referred to as Jackson Township, if selected. As addressed above, this is not anticipated to effect emergency response due to the distance between the Plan Area and the City of Jackson and dispatchers' extensive training to determine appropriate locations of incidents. Alternative 2 would result in a **less-than-significant impact** on emergency response.

Mitigations Measures

No mitigation is required.

Impact: Result in Substantial Adverse Physical Impacts Associated With the Provision of Law Enforcement

Proposed Project

The Project includes a maximum of 6,143 residential units which, according to the proposed Specific Plan, would provide housing for an estimated 16,955 new residents within the Plan Area, as well as non-residential users. This would increase demand for law enforcement services within the Plan Area.

SSD has substations located throughout the unincorporated county. The closest of which is the Kilgore Station East Division located at 2897 Kilgore Road in Rancho Cordova. SSD has indicated that the existing substation could accommodate new staffing and equipment that may be needed to serve the growth in the area. Additionally, the provision of law enforcement services is not necessarily based on facility locations, as timely services are generally provided by personnel who are on patrol within communities.

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 Plan Area and the surrounding areas. Law enforcement services would be funded through the County Police Services Community Facilities District 2005-1 (CFD 2005-1) annual special tax that would be levied on each new residential unit developed with in the Plan 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**.

Alternative 2

Alternative 2 would generate 5,690 dwelling units and 15,331residents, as well as employees. As described above for the Project, development impact fees and ongoing property taxes would provide funding for additional staffing and equipment needed to maintain and improve service levels for law enforcement within the Plan Area and the surrounding areas. These funding mechanisms, policies, and regulations would assist SSD in adequately serving new growth and demand. Because no new facilities would be 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

No mitigation is required.

IMPACT: RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE PROVISION OF SCHOOLS

PROPOSED PROJECT

Development of the Project would increase the local student population. Based on student generation rates provided by EGUSD and State of California criteria, the proposed Jackson Township Specific Plan estimates that student enrollment resulting from the Project would be approximately 4,038 additional students, with approximately 2,147 students in grades K–6 (elementary school), 633 in grades 7–8 (middle school), and 1,258 in grades 9–12 (high school). The Project designates three sites for elementary schools that are each approximately 12 acres in size and have a capacity of 850 students each. The Project also includes an 80-acre site designated for a joint high school and middle school that has a capacity for 1,200 middle school students and 2,200 high school students. Because these sites have a capacity that exceeds the expected demand, the proposed schools would also serve students from outside the Plan Area. Moreover, the Project would not exacerbate the overcrowding of the existing schools that serve the area or result in the construction of additional schools outside of the Plan Area. Table PS-2, below, recreates Table 6.4 from the Specific Plan (available as Appendix PD-1).

Table PS-2: Estimated Student Generation and School Site Demands

Land Use	Dwelling Units	Grades K-6 Factor	# of K-6 Students	Grades 7-8 Factor	# 7-8 Students	Grades 9-12 Factor	# 9-12 Students
Single Family (LDR, MDR)	3,906	0.3751	1,465	0.1181	461	0.2299	898
Attached/ For Sale (20% of HDR/MU)	447	0.1358	61	0.0331	15	0.0795	36
Multi-Family/ Rental (80% of HDR/MU)	1,790	0.3469	621	0.0879	157	0.1818	324
Total Units	**6,143**						
Total Students			**2,147**		**633**		**1,258**
Site Capacity (per school)			**850**		**1,200**		**2,200**
Required # of School Sites			**2.53**		**0.53**		**0.57**

Source: Jackson Township Specific Plan, Table 6-4.

The three elementary school sites would be co-located with neighborhood park sites to encourage joint use of the facilities. Each elementary school would be centrally located to serve as a focal point of the neighborhood. Each school would be approximately 0.5 mile from most residences and linked on a greenway system, to allow easy non-vehicular access. The high school/ middle school site would also be located adjacent to the community park at a location that provides accessibility to the residents of the proposed NewBridge Specific Plan area that would use this school.

EGUSD has been working with the Project Applicant to ensure adequate school facilities are provided within the Plan Area. The number and location of school sites shown on the current plan would accommodate additional students generated by the Project (Heinicke, pers. comm., 2013). Proposed school construction would occur within the Plan Area boundaries in areas designated for developed uses, consistent with the provisions of the Specific Plan. Construction of these schools within the Plan Area and are part of the Project, and the environmental impacts associated with the construction and operation of the schools are evaluated throughout this EIR.

Further, the Project Applicant would be required to pay all applicable State-mandated school impact fees to EGUSD at the time of development. The County would determine the assessable square footage that would be subject to the fee at that time. EGUSD would determine the capacity of existing schools at the time of build-out of the Plan Area, would determine the need for new school facilities, and would oversee the environmental review and development of new facilities. If school impact fees are not adequate to cover the need for new school facilities, EGUSD has the ability to raise fees as necessary. The California Legislature has declared that payment of the applicable school impact fee is deemed to be full and adequate mitigation under CEQA for impacts on school facilities (California Government Code Section 65996).

The Project includes four school sites, which would exceed the demand generated by the Project. Construction of these schools would not result in any substantial physical impacts specific to public services that are not already an inherent part of overall Project impacts. Impacts specific to public facility construction related to school services would be **less than significant**.

It is possible that future residential development within the Plan Area would generate demand for school facilities that are not met by the proposed school sites for some period of time as the Plan Area builds out. Depending upon the timing of construction of new school facilities relative to residential development within the Plan Area, future students could be bused or driven to off-site schools within the EGUSD boundaries for a short period of time. This could result in indirect impacts related to transportation, such as air pollutant emissions, greenhouse gas emissions, and transportation noise. The timing and specifics necessary to fully evaluate these impacts are unknown and speculative. No further analysis can be provided in this document.

Alternative 2

Alternative 2 would result in similar levels of demand for school services and proposes the same general school sites as the Project. As indicated in the evaluation of the Project, adequate school facilities would be accommodated within the Plan Area. Impacts would be **less than significant**.

Mitigation Measures

No mitigation is required.

IMPACT: RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE PROVISION OF PARKS AND RECREATION SERVICES

PROPOSED PROJECT

The Project includes six neighborhood parks (totaling 39.1 acres) that would be distributed throughout the Plan Area, three of which are adjacent to the proposed elementary school sites. The other three neighborhood parks would be located adjacent to the regional and local trail system within the proposed greenbelt areas to provide for easy pedestrian and bicycle access throughout the Plan Area. The neighborhood parks range in size from 5.0 to 9.5 acres and would provide a variety of facilities that would accommodate local recreational needs. The park facilities are anticipated to include play areas for children, open turf areas, areas for organized sports, picnic areas, and spaces for small groups of people to gather and recreate. The two larger neighborhood parks would accommodate soccer and baseball fields and provide restrooms and parking.

The Project also includes two community parks: a 28.6-acre community park (Park A) adjacent to the middle school/high school and a 10.6-acre park (Park B) located near the center of the Plan Area. In total, there would be approximately 39.2 acres of community park land. Park A would provide for joint use opportunities with the school and as a trailhead and interpretive area for the wetland preserve. This park could also provide for large community gathering area with active facilities like lighted softball, baseball, and soccer fields, basketball courts, a large covered picnic area, water playground, and dog park area, along with parking and restrooms. Park B could include facilities such as soccer fields, basketball courts, a large covered picnic area, restrooms, a playground, and parking. Both proposed community parks are also adjacent to the trail system, which would provide easy access for residents throughout the Plan Area.

The Project has been designed so that most homes would be located within 0.25 mile of major gathering facilities, including the parks. See Plate PD-16 for a map depicting the distribution of park facilities throughout the Plan Area. In total, the Project would provide for 78.3 acres of developed parkland.

In addition to developed parkland, the Project would also provide an extensive regional and local trail system within approximately 60.9 acres of open space and greenbelt within two drainage corridors. These corridors would comprise a system of Class 1 trails that would provide off-street active recreation that would connect most areas of the Plan Area. The Project would also provide for approximately 214.3 acres of wetland preserve that could provide some passive recreation uses, although public access would be limited due to biological resources constraints. The area within the wetland preserve and most of the trail system does not count toward State-mandated parkland requirements per the Quimby Act. The CRPD has agreed to accept 3 acres of the trail system adjacent to the east and south boundaries of Park A for Quimby Act credit, increasing the total amount developed parkland to be owned, operated, and maintained by CRPD to 81.3 acres.

The Quimby Act and the 2030 General Plan require a minimum of 3 and a maximum of 5 acres of parkland per 1,000 residents. As described in the Regulatory Setting, 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-3, below, presents these factors and the Project's parkland dedication requirement.

Table PS-3: Parkland Dedication Requirements for the Project

Land Use/ Housing Type	Dwelling Units	Factor	Acres Required
Single family: LD/MD	3,906	0.0142	55.5
Multi-family: HD/MU	2,237	0.0119	26.6
Total	**6,143**	--	**82.1 acres**
Parkland Provided			
Facility Type	**# of Facilities**	**% Credit Allowed**	**Acres Credit**
Community Parks	2	100%	39.2
Neighborhood Parks	6	100%	39.1
Trails (Adjacent to south and east sides of Community Park A)	2	100%	3.0
Total Provided	**--**	--	**81.3 acres**
Difference	**--**	--	**-0.8 acre**

Source: Jackson Township Specific Plan, Table 6-3; Section 22.40.045 of the Sacramento County Code

The Project would provide for 78.3 acres of developed parkland and 3 acres of trails adjacent to Park A that CRPD would accept for full parkland credit, totaling 81.3 acres. Based on the parkland calculation factors from Title 22 of the Sacramento County Code, the Project would be required to provide 82.1 acres of parkland, leaving a difference of 0.8 acre of additional parkland acreage needed to fulfill the parkland requirement.

In cases where there is a shortfall of dedicated parkland acreage, the Quimby Act, Title 22 of the Sacramento County Code, and Policy LU-122 of the 2030 General Plan all allow for a shortfall to be rectified through the dedication of additional parkland or payment of in-lieu fees to the applicable park district. In the case of the Project, future map applications for subsequent development would be required to go through a review process, and each project would provide for the opportunity to add additional parkland in order to make up for the overall shortfall. In addition, the proposed Specific Plan provides a development maximum, so it is possible that fewer residences would actually be built. Parkland dedication requirements would be based on actual subdivision maps. If fewer units are built, then less parkland would be needed; if the Plan Area is fully built out to a maximum of 6,143 residential units, the Project Applicant would either need to dedicate additional parkland at the time of tentative map or pay in-lieu fees to make up for the difference.

In addition, although funding is not an impact on the physical environment, a Public Facilities Financing Plan has been prepared for the Project ensure that adequate funding is available to CRPD for development, maintenance, and programming of parks and recreational facilities within the Plan Area.

Parkland dedication currently proposed within the Plan Area would be slightly deficient and would require the dedication of an additional 0.8 acre of parkland to meet dedication requirements. As mentioned above, the Specific Plan provides a maximum buildout scenario, so it is possible that once tentative maps for development within the Plan Area are filed with the County in the future, that the anticipated shortfall may no longer be an issue if fewer residential units are approved. Due to the small amount of acreage (0.8 acre), this is likely to be the case. The applicable regulations also allow for the payment of in lieu fees to make up the difference. While it will not be known for certain what the actual shortfall would be, if any, this impact would nonetheless be considered **potentially significant** absent verification of adequate parkland dedication.

Mitigation Measure PS-2, below, requires that the developer of the future projects in the Plan Area either dedicate park acreage to meet the individual parkland requirements for that project (as indicated by Title 22 of the Sacramento County Code), or pay in lieu fees equivalent to any shortfalls in parkland dedication to provide for the acquisition and development of park facilities located within other areas of the Plan Area. Implementation of this measure would provide adequate park and recreation services, thereby reducing the impact to **less than significant after mitigation**.

ALTERNATIVE 2

Alternative 2 would dedicate 0.5 acre more parkland than the Project while constructing fewer residences, which would result in a surplus of parkland above County requirements (see Table PS-4). Therefore, impacts on parks and recreation services for Alternative 2 would be **less than significant**.

Table PS-4: Parkland Dedication Requirements for Alternative 2

Land Use/ Housing Type	Dwelling Units	Factor	Acres Required
Single family: LD/MD	3,540	0.0142	50.3
Multi-family: HD/MU	2,150	0.0119	25.6
Total	**5,690**	**--**	**75.9**
Parkland Provided	**--**	--	**81.8**
Difference	**--**	--	**+ 6.0 acres**

MITIGATION MEASURES

PS-1: At the time a small lot tentative map is submitted to the County, the developer of the property shall demonstrate that either (1) park acreage to meet the individual parkland requirements pursuant to Title 22 of the Sacramento County Code has been provided within the mapped area, or (2) in-lieu fees will be paid in an amount equivalent to any shortfalls in parkland dedication. Appropriate parkland dedication and/or adequacy of fees shall be verified by CRPD prior to the County's approval of the small lot tentative map. This requirement shall be met for all small lot tentative maps, including those located in portions of the Plan Area that do not include planned park facilities per the Specific Plan.

Impact: Result in Substantial Adverse Physical Impacts Associated With the Provision of Libraries

Proposed Project

Future residents of the Plan Area would increase the demand for library services provided by the SPLS. The nearest full-service branch is the Rancho Cordova branch, which could serve Plan Area residents. None of the new branch locations identified in the Library Master Plan are anticipated to be located within the Plan Area; however, they are in close proximity to the Plan Area and could serve area residents once they come online.

Staff from the Sacramento Public Library Authority confirmed with County staff that they do not see the need for a new library branch in the Plan Area (Tucker, pers. comm., 2013). The SPLS's Library Master Plan recommended the development of three to four new libraries within the Rancho Cordova, Sunrise Douglas, and Vineyard areas. Specific locations have not yet been identified, but these general locations are outside the Plan Area. The SPLS will be required to do a complete analysis of all potential impacts on new branch locations once they are determined.

The Project would not increase demand on library services beyond existing capacity. In addition, the Project includes a funding mechanism through the public facilities fee program for library upgrades to accommodate the expected population of the Project. This would allow the SPLS to implement the Library Master Plan, which accommodates planned growth in the surrounding area. Therefore, the Project would not result in substantial adverse physical impacts associated with the provision of library services. This impact would be **less than significant**.

Alternative 2

Alternative 2 would result in similar levels of demand for library services as the Project. This alternative would also include the same funding mechanism to provide for ongoing services. Alternative 2 would have a **less-than-significant** impact on libraries.

Mitigation Measures

No mitigation is required.

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18 WATER SUPPLY

INTRODUCTION

The following chapter addresses the ability of the existing water service provider to supply drinking water to the Project or Alternative 2. The analysis describes relevant master planning of the utility services and whether the infrastructure and demands of the Project or Alternative 2 are consistent with the utility master plans. The potential physical impacts of constructing facilities are described.

During the Notice of Preparation (NOP) scoping process, the County received a comment that requested analysis of the increased demand for water generated by the Project. The following discussion addresses this concern. Cumulative impacts to water supply are also addressed in Chapter 21, "Summary of Impacts and Their Disposition." A copy of the NOP and comment letters received in response to the NOP are included in Appendix INT-2 of this Draft EIR.

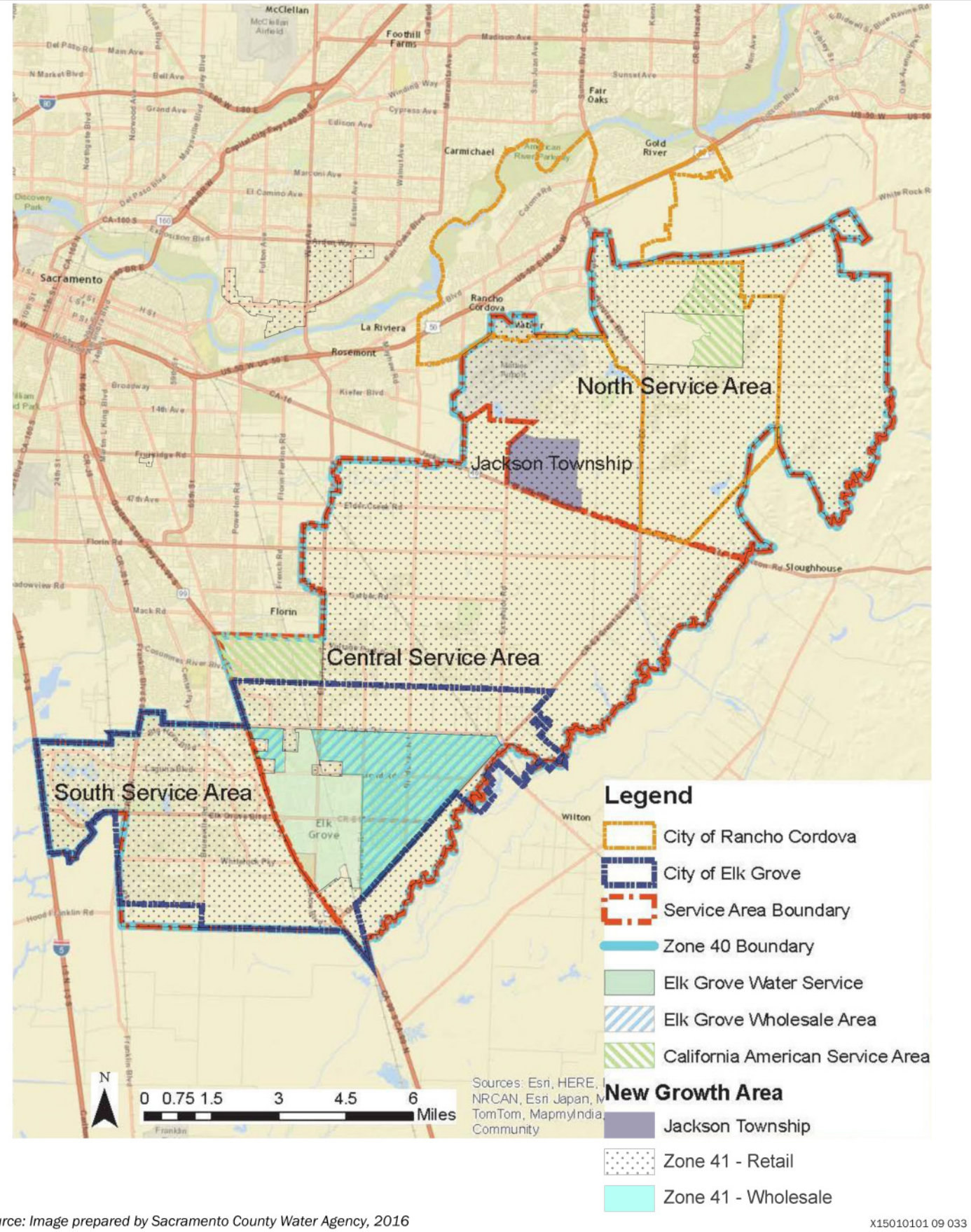
ENVIRONMENTAL SETTING

SACRAMENTO COUNTY WATER AGENCY

The Plan Area is within the Zone 40 North Service Area (NSA) of the Sacramento County Water Agency (SCWA) (Plate WS-1). Zone 40 is in the central portion of the county, 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 Basin, described in detail below under "Groundwater Conditions." Once planned facilities have been constructed by SCWA, they are operated and maintained by Zone 41, which retails the water to customers. Zone 40 and 41 have largely overlapping jurisdictional boundaries.

The conjunctive use program for SCWA includes the use of groundwater, surface water, remediated water, and recycled water supplies. 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 2016b). SCWA utilizes this coordinated approach to manage surface water and groundwater supplies to maximize the yield of available water resources.

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 naturally replenishes. 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.



Source: Image prepared by Sacramento County Water Agency, 2016

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Plate WS-1: Sacramento County Water Agency Service Areas

ASCENT ENVIRONMENTAL

The Water Supply Master Plan (WSMP) for Zone 40 projects water demand through 2030. The Plan Area is not within the 2030 study area analyzed in the 2005 WSMP, . Water is supplied to Zone 40 through a variety of sources, including groundwater and surface water from the American River and Sacramento River obtained through appropriative supplies, the Central Valley Project (CVP), and other transfer water supplies. The 2005 WSMP was developed for the entire Zone 40/NSA to outline a flexible program of water management alternatives that could be implemented as the availability and feasibility of water supply sources changed. The Plan Area is not within the 2030 study area analyzed in the 2005 WSMP.

Surface Water Sources

SCWA obtains surface water from a contract with the CVP, an appropriative right to the American River and Sacramento River, 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-feet per year (afy) that is diverted at the Freeport diversion on the Sacramento River and treated at the Vineyard Surface Water Treatment Plant (SWTP), which is approximately 3.5 miles southwest of the Plan Area. This water supply is subject to reductions in dry years (SCWA 2016b).

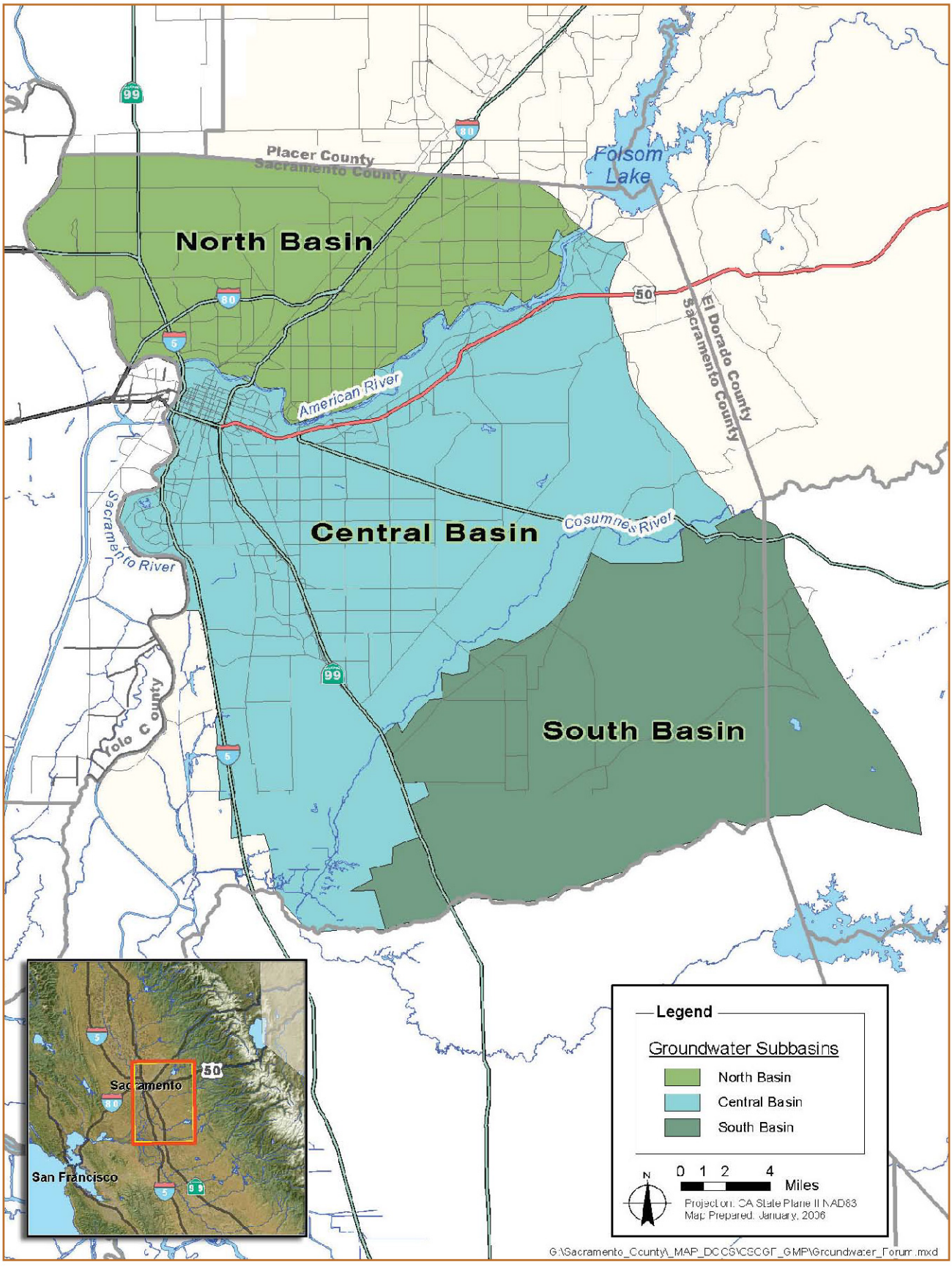
A second source of surface water consists of the City of Sacramento's American River Place of Use appropriation, which constitutes approximately 9,300 afy. This water is diverted at the Sacramento SWTP. The allocation of water is dependent upon American River flows, and a supply allocation of zero percent is assumed for dry years and 100 percent for normal climate years.

A third source of surface water is through appropriative use of the Sacramento and American Rivers as approved by the SWRCB under Permit 21209. SCWA is entitled to approximately 71,000 afy in wet years. The water is diverted at the Freeport diversion on the Sacramento River.

Groundwater Conditions

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 caused a gradual lowering of groundwater levels in the region (DWR 1974). There are three primary groundwater zones in Sacramento County: the North Basin (north of the American River); the South Basin (between the American and the Cosumnes Rivers); and the Central Basin (Plate WS-2).

The Project is in the Central Basin. 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 these rivers, as well as the upland foothill regions, serve as the major source of groundwater recharge in the Central Basin (SCGA 2006). 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. Figure 5 of the Background Section for the Conservation Element of the General Plan indicates that there are no areas of groundwater recharge within the Plan Area (Sacramento County 1993).



Source:

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Plate WS-2: Sacramento County Groundwater Basins

ASCENT ENVIRONMENTAL

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. 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, iron, and manganese (SCGA 2006).

The Central Basin also contains known contaminant plumes associated with Mather Field, Aerojet, Boeing, the former Army Depot, the former Southern Pacific and Union Pacific railyards, and various landfills (SCGA 2006). There is no documented groundwater contamination within the Plan Area. Refer to Chapter 13, “Hazardous Materials,” of this EIR for information related to the potential for groundwater contamination, leaking underground fuel tanks, and other documented hazardous materials within the Plan Area.

GROUNDWATER SUPPLIES

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 grew and coalesced into a single cone of depression centered in the southwestern portion of the Central Basin, near the City of Elk Grove (approximately 10 miles southwest of the Plan Area).

The basin is beginning to recover from this historical overdrafting. 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. Groundwater storage in the recharge area underlying Elk Grove and surrounding areas is continuing to increase due to conjunctive use and surface water use expansion, increased use of recycled water, and water conservation. The increase in storage in this portion of the subbasin has filled the long-term cone of depression and has eroded the ridge of higher groundwater separating it from the Cosumnes Subbasin (SCGA 2016).

In addition, SCWA receives a remediated groundwater supply of 8,900 afy in accordance with the terms and conditions in the May 2010 agreement entitled “Agreement between Sacramento County, SCWA, and Aerojet-General Corporation with Respect to Transfer of GET Water.” 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 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-1, below, describes SCWA's projected availability of groundwater over the next 20 years.

Table WS-1: SCWA Projected Groundwater Supply Availability

	2020	2025	2030	2035	2040
Groundwater (afy)	47,000	47,000	52,000	62,000	62,000
Remediated Groundwater (afy)	8,900	8,900	8,900	8,900	8,900
Total (afy)	55,900	55,900	60,900	70,900	70,900

Water Forum Agreement

The Water Forum Agreement (WFA), as updated in October of 2015, is a memorandum of understanding designed to provide a reliable and safe water supply to the region through 2030 while preserving the fishery, wildlife, recreational, and aesthetic values of the lower American River. Land-use decisions dependent on water supply from the three groundwater subbasins in Sacramento County must be consistent with the estimated average annual sustainable yields for those groundwater subbasins, as negotiated for the WFA. The Groundwater Management Element of the WFA recommends a sustainable yield for the Central Subbasin of 273,000 afy. 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).

Groundwater extraction has been within the WFA's sustainable yield from 2005 (252,984 acre-feet per year [afy]) to 2015 (217,111 afy). The least amount of groundwater extraction over this period occurred in 2011 (202,324 afy) and the most occurred in 2008 (260,200 afy). The average groundwater extraction during the drought years (2011–2015) was approximately 219,000 afy (SCGA 2016). The wells nearest the Plan Area have groundwater level trends that vary between 40 feet above to 40 feet below mean sea level (SCWA 2018).

Regional Infrastructure

Zone 40 is undergoing rapid urbanization, and water use in the area is increasing. To continue to achieve the goal of groundwater conservation and recharge and rely more heavily on surface water as a source, the Freeport Regional Water Authority Intake Facility and Pipeline was developed. The facility and pipeline transport water from the Sacramento River to the Vineyard SWTP, where the water is treated and delivered to more than 40,000 SCWA customers.

Vineyard Surface Water Treatment Plan

The Vineyard SWTP and associated water supply facilities are in operation. The Vineyard SWTP is currently providing potable water to existing development within the SCWA Zone 40 service area. The Vineyard SWTP 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. The pipeline will begin at the Vineyard SWTP 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.

EXISTING INFRASTRUCTURE IN THE PLAN AREA

Existing water facilities in the vicinity of the Plan Area include the Vineyard SWTP, the Excelsior Well Field, and the Anatolia Terminal Storage and Pumping Facilities. A 30-inch transmission line connects these facilities. This line follows the Excelsior Road and Kiefer Road alignments along the western boundary of the Plan Area and within the northern portion of the Plan Area, respectively.

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 CVP; generating hydroelectric power; providing irrigation water for agriculture; improving water quality, flood control, and river navigation; providing river regulation, control and fish/wildlife enhancement; offering water-based recreation opportunities; and conducting research on a variety of water-related topics.

STATE

CALIFORNIA DEPARTMENT OF WATER RESOURCES

The California 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.

STATE WATER RESOURCES CONTROL BOARD

The State Water Resources Control Board (SWRCB) was established in 1967 to administer water rights and protect water quality. The SWRCB and its nine regional water quality control boards administer water rights and enforce pollution control standards. The SWRCB 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 SWRCB must consider all beneficial uses, including water for downstream human and environmental uses.

URBAN WATER MANAGEMENT PLANNING ACT

Pursuant to California Water Code Sections 10610-10657, as last amended by Senate Bill (SB) 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 afy to submit an urban water management plan (UWMP) to DWR every 5 years and update the plan on or before December 31 in years ending in 5 and 0. Amendments to SB 318 have focused on ensuring that the UWMP emphasizes and addresses drought contingency planning, water demand management, reclamation, and groundwater resources.

CALIFORNIA WATER CODE

Water Code Section 10910 et seq. defines the projects for which the preparation of a water supply assessment (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.

Under Section 10910 of the Water Code, the lead agency must identify the affected water supplier and ask the supplier whether the new demands associated with the project are included in the supplier's UWMP. If the UWMP includes the demands, it may be incorporated by reference in the WSA. If there is no public water system to serve the project, the lead agency must prepare the WSA.

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 could 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 has ranked the Sacramento Valley Groundwater Basin as "high priority." As described above, the SCGA has prepared a groundwater management plan for the Central Basin. SCGA has submitted the plan to DWR as an alternative management plan that satisfies the requirements of SGMA.

California Model Water Efficient Landscape Ordinance

The California Model Water Efficient Landscape Ordinance (MWELO) sets restrictions on outdoor landscaping. Because the Sacramento County is a “local agency” under the MWELO, it must require project applicants to prepare plans consistent with the requirements of the MWELO for review and approval by the County. The MWELO was most recently updated by the DWR and approved by the California Water Commission on July 15, 2015. All provisions became effective on February 1, 2016. The revisions, which apply to new construction with a landscape area greater than 500 square feet, reduced the allowable coverage of high-water-use plants to 25 percent of the landscaped area. The MWELO also requires use of a dedicated landscape meter on landscape areas for residential landscape areas greater than 5,000 square feet or non-residential landscape areas greater than 1,000 square feet and requires weather-based irrigation controllers or soil-moisture based controllers or other self-adjusting irrigation controllers for irrigation scheduling in all irrigation systems.

California Green Building Standards Code

Chapter 4, Division 4.3 of the 2016 California Green Building Standards Code (CALGreen) requires conservation of water used indoors, outdoors, and in wastewater conveyance associated with residential land use. These include requiring the installation of water conserving plumbing fixtures and fittings, and requirements for outdoor potable water use in land use areas consistent with the MWELO. Chapter 5, Division 5.3 includes standards for indoor and outdoor water use associate with non-residential land uses.

Cortese-Knox-Hertzberg Local Government Reorganization Act

The Cortese-Knox-Hertzberg Local Government Reorganization Act of 2000 establishes procedures for local government changes of organization, including annexations. The act addresses amendments to spheres of influence (California Government Code Sections 56425 – 56434). Pursuant to Section 56430, a local agency formation commission (LAFCo) must conduct a review of the municipal services provided in the county or other appropriate area to prepare and to update spheres of influence. In conducting a service review, LAFCo must comprehensively review all agencies that provide services within the designated geographic area before, or in conjunction with, an action to establish or update a sphere of influence.

Local

Sacramento LAFCo Policies, Standards, and Procedures

Sacramento LAFCo Policies, Standards, and Procedures require that any proposed annexations are consistent with applicable service elements of the Sphere of Influence of any affected agencies, and that adequate services be provided within the time frame needed for the inhabitants of the annexation area (Section I, Standard Number 4). A Municipal Services Review is prepared to meet these requirements. In addition, LAFCo requires that any annexation provides for the lowest cost and highest quality of urban services (Section I, Standard Number 5). Where local policies may be silent, the

Commission will make findings pursuant to the Cortese-Knox-Hertzberg Local Government Reorganization Act.

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 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 (BMOs) to help achieve groundwater basin goals:

1. Maintain a long-term average groundwater extraction rate of 273,000 afy.
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 2030 GENERAL PLAN

The following policies of the 2030 General Plan would apply 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-9. Developments in areas with significant contamination shall utilize remediated groundwater as part of their water supply when feasible.

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.

COMMUNITY PLANS

CORDOVA COMMUNITY PLAN

The Cordova Community Plan, which was last updated in 2003, provides guidance for both new development and the redevelopment of existing land uses within the community planning area. The Plan contains the following objective 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.

VINEYARD COMMUNITY AREA PLAN

The Vineyard Community Plan, which was developed in 1985, provides guidance for growth and development in the community planning area. The Plan contains the following policies related to water supply:

PF-1. Consider the effects on the water table when reviewing future development in the plan area.

FU-3. All types of urban development proposals must be accompanied by a detailed public services plan and specific timing and funding programs for the implementation and maintenance of services.

FU-4. Urban developers shall provide public sewer and surface water facilities and shall bear the full cost of providing these facilities within the proposed development and a fair share of any associated costs outside the development.

FU-5. All urban development and nonagricultural water intensive use proposals must include provisions for surface water; or provide specific conjunctive use programs which offset the amount of groundwater overdraft.

IMPACTS AND ANALYSIS

SIGNIFICANCE CRITERIA

Based on the CEQA Guidelines and the sustainable groundwater yield identified in the Water Forum Agreement, a water supply impact is significant if implementation of the Project 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 insufficient water supplies available to serve the Project and reasonably foreseeable development during normal, dry, or multiple dry years.
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.

ISSUES NOT DISCUSSED FURTHER

All issues are evaluated below.

METHODOLOGY

The following evaluation is based on of the following documents and technical studies:

- Jackson Township Potable Water System Study (Stantec 2017; Appendix WS-1)
- Water Supply Assessment for Jackson Township (SCWA 2016a; Appendix WS-2)

- Urban Water Management Plan (SCWA 2016b)
- Zone 40: Water Supply Master Plan (SCWA 2005)
- Zone 40 Water Supply Master Plan Amendment for the Jackson Township Project (Sacramento County Water Agency 2016c; Appendix WS-3)
- CSCGMP, Central Sacramento County (SCGA 2006)

IMPACT: ENVIRONMENTAL EFFECTS DUE TO THE CONSTRUCTION OF NEW OR THE EXPANSION OF EXISTING WATER FACILITIES

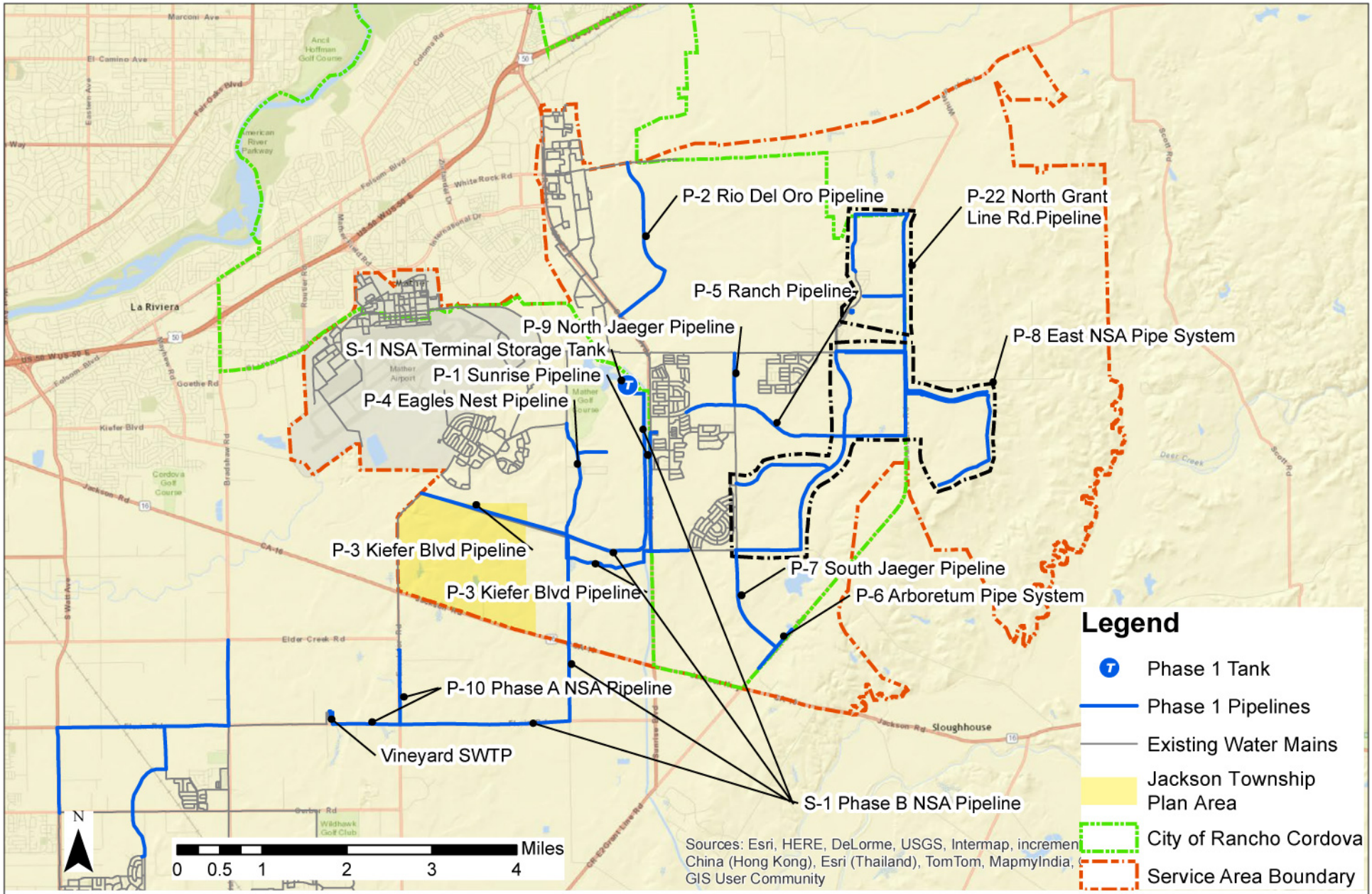
PROPOSED PROJECT

SCWA has developed a water system infrastructure plan, which is a staff-level document that describes the projected water supply infrastructure needs to meet the built-out water demands in Zone 40, including the Project demands (SCWA 2016c). As described above, SCWA is currently implementing a series of capital improvement projects that would meet the demands projected for the entire NSA and serve the Project (Plate WS-3). With the Phase A NSA Project, surface water can be delivered to the NSA from the Vineyard SWTP up to 11,000 gallons per minute (gpm) (or 15.8 mgd), which is enough to supply surface water to the NSA for several years. Once the demand for surface water in the NSA exceeds the capacity of the 30-inch Excelsior pipeline, a new pipeline would be constructed. This new pipeline would be part of the Phase B NSA Project, which would also include the NSA terminal storage and pumping facility. The Phase B NSA Pipeline (54-inch in diameter) starts from Florin Road at Excelsior Road, extending east on Florin Road and then turning north in Eagles Nest Road, Kiefer Road, and the west bank of Folsom South Canal, and ultimately ending at the NSA terminal tanks (10 MG) located in the Mather South Plan Area (SCWA 2016c).

OFFSITE INFRASTRUCTURE

The water system facilities needed to serve SCWA's planned future demand would form the basis of infrastructure to serve the Project. Additionally, to supply Jackson Township, a series of pipelines (Sunrise Pipeline and Kiefer Boulevard Pipeline) would be constructed to convey water supply from the Anatolia Facilities and subsequently from the future NSA terminal storage tanks. These pipelines would be sized to convey supply to meet peak hour and maximum day plus fire flow demands.

The proposed water system infrastructure needed to serve the Project is illustrated in Plate WS-4 and described in detail in the Jackson Township Potable Water System Study (Stantec 2017). The Anatolia Facilities would be the initial source of water supply for the Plan Area. Two transmission mains would be extended to the Plan Area from the Anatolia Facilities. One main would be extended along Jackson Road (also referred to as Jackson Highway) and a second main would be extended along Kiefer Boulevard.



Source: Image prepared by Brown & Caldwell, 2015

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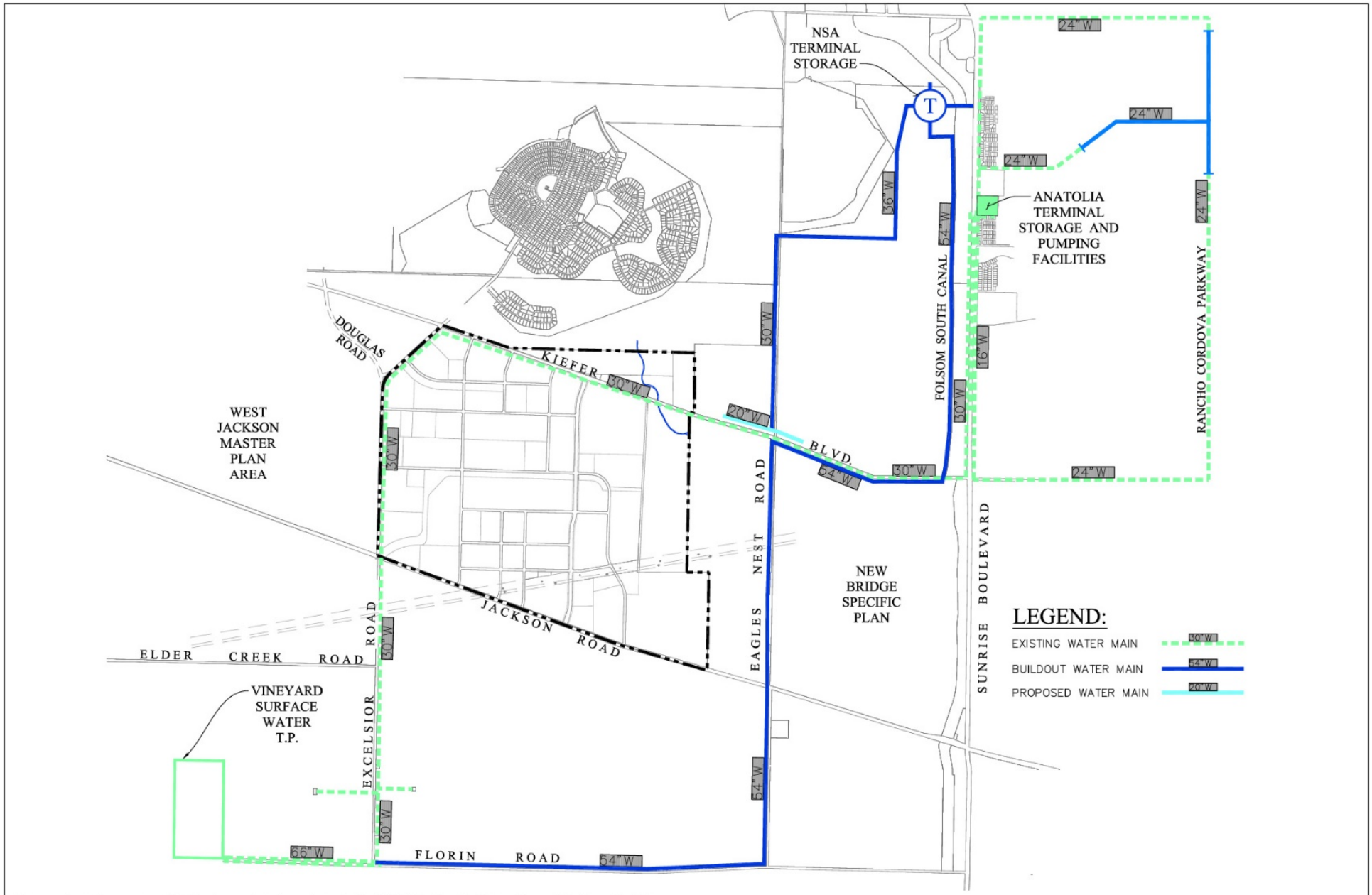
Plate WS-3: SWCA Phase 1 Capital Improvement Projects

ASCENT ENVIRONMENTAL



Source: Image prepared by Tsakopoulos Investments in 2019 for the Jackson Township Specific Plan

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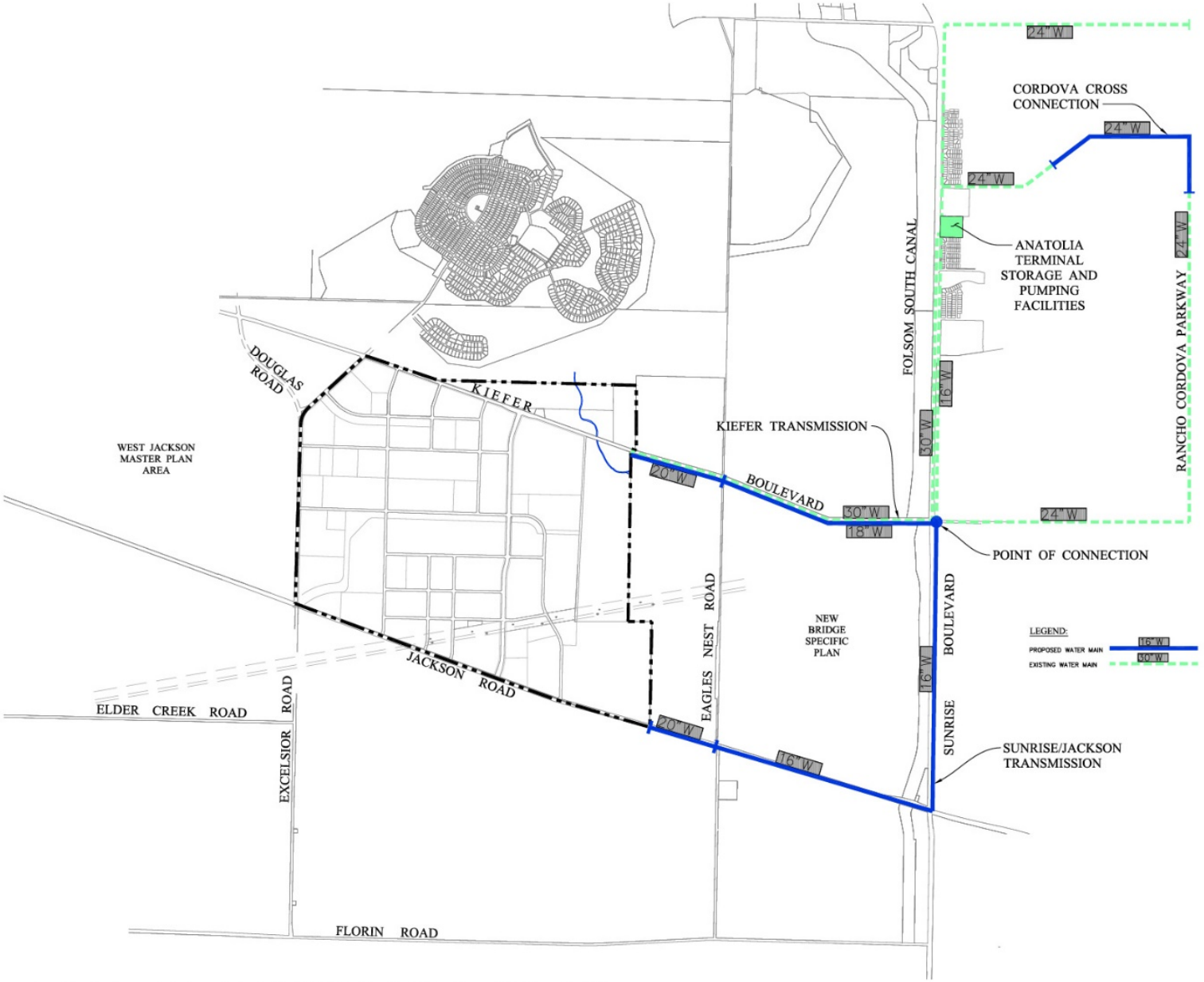
Plate WS-4: NSA Buildout Water System

BACKBONE T-MAIN IMPROVEMENTS

The backbone system includes the minimum offsite and onsite water transmission improvements needed to serve the Project. Plates WS-5 and WS-6 illustrate the minimum offsite and onsite backbone water transmission system improvements needed to serve the Project, which include the following:

- **Kiefer Boulevard Transmission Main.** This component includes a 20-inch main that extends in Kiefer Boulevard from Grenville Drive to Eagles Nest Road, and an 18-inch main from that point to the intersection of Sunrise Boulevard to tie into the existing 16-/24-inch mains. The main would cross the Folsom South Canal, and the 18-inch main is proposed to be shifted to the north to Kiefer Boulevard.
- **Jackson Road Transmission Main.** A 20-inch main is proposed to extend in Jackson Road from Grenville Drive east to Eagles Nest Road, and a 16-inch main would extend from Eagles Nest Road to Sunrise Boulevard. The main would cross the Folsom South Canal.
- **Sunrise Boulevard Transmission Main.** This 16-inch main would extend from Jackson Road to the north in Sunrise Boulevard to the connection point at Kiefer and Sunrise Boulevards.
- **Grenville Drive Main.** This 16-inch main would extend in Grenville Drive between Jackson Road and Kiefer Boulevard.
- **Loop to Anatolia Facility.** This item includes either the completion of the 24-inch Ranch Pipeline to tie into the existing 24-inch main in Rancho Cordova Parkway, or the extension of the North Jaeger Pipeline to Douglas Road to complete the looped transmission main system back to the Anatolia facility. These transmission mains are needed to serve other projects within the NSA and may be installed by others before construction of the backbone transmission main system.
- **Eagles Nest Transmission Cross Connection.** A 36-inch transmission main would be extended south from the Terminal Storage and Pumping Facility through the Mather South Plan Area to the intersection of Eagles Nest Road. The line would be reduced to a 30-inch transmission main and extend south in Eagles Nest Road to a connection with the 20-inch transmission main located in the intersection of Eagles Nest Road and Kiefer Boulevard. SCWA would determine when the line is needed based upon capacity utilization. Once this occurs, construction within the Plan Area may be suspended, at the discretion of SCWA, until the line is completed. SCWA would be responsible to secure all permits and rights-of-way for the construction of the cross connector. This is a regional service line; and therefore, any construction funds, engineering costs or other reasonably related expenses fronted by a private party would be jointly shared by all the projects developers actively pursuing land development projects in the NSA.
- **Anatolia Pumping and Storage Facility**. Expansion of the Anatolia Pumping and Storage facility is proposed as a Phase 1 improvement. This will add three new booster pumps at the facility, which will increase pumping capacity to 15,600 gpm.



Source: Image prepared by Tsakopoulos Investments in 2019 for the Jackson Township Specific Plan

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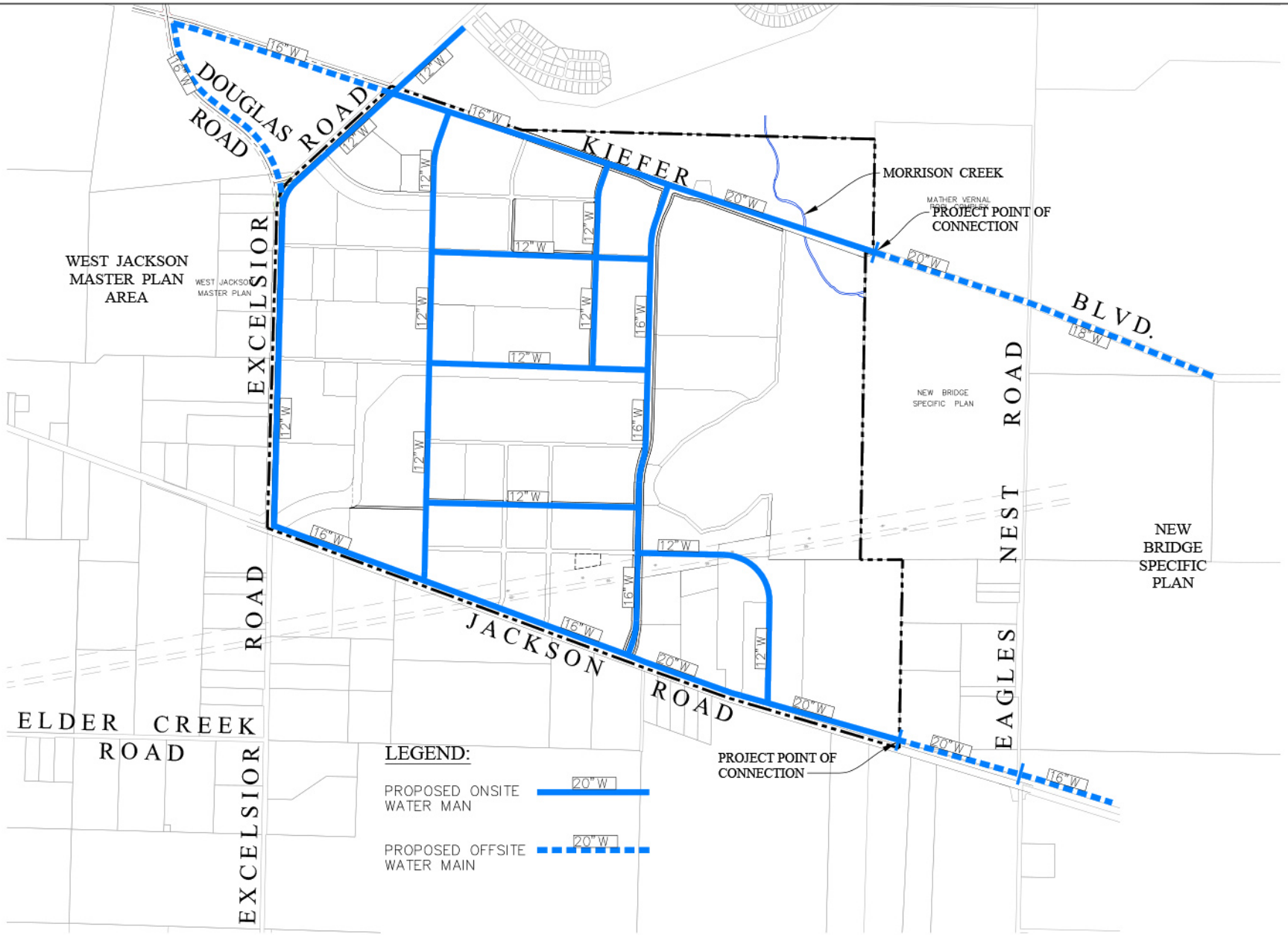
Plate WS-5: Offsite Water Supply Infrastructure

ASCENT ENVIRONMENTAL



Source: Figure prepared by Au Clair Consulting in 2019 for the Jackson Township Specific Plan

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Plate WS-6: Potable Water Distribution System

SECONDARY CONNECTION AND OTHER FACILITIES

A secondary connection is required. The secondary connection would supply the Project under normal and emergency conditions, during a short-term transmission main outage or if a transmission main is removed from service for maintenance or repair. The Potable Water System Study assumes that the Project system would ultimately be connected to the Mather system to provide a reliable system meeting regulatory requirements for new water systems (Stantec 2017).

ONSITE POTABLE WATER DISTRIBUTION SYSTEM

Peaking factors, fire flow requirements and a normal pressure range (typically 35 to 65 psi) were considered in planning and designing the distribution pipe network as required by the County's Standard Specifications. New 12-inch “backbone” water lines would form the basis of a grid extending through the Plan Area as the backbone roads are constructed. Within neighborhoods, local distribution lines would be a minimum of 8-inches diameter. Looping of water mains may be required to meet the minimum standards of the SCWA and Sacramento Metro Fire District. All subsequent development applications would be reviewed to ensure consistency with the WSMP Amendment in accordance with the County standards, fire codes, and State laws.

SYSTEM PHASING

The onsite backbone transmission system would need to be expanded to serve various developments in Phases 1 through 4 by installing additional mains that would interconnect with the 16-inch main in Grenville Drive and/or the 20-inch north/south transmission mains, as needed. The initial backbone system would permit flexibility in phasing, since any region within the Plan Area may be served by additional main loops, as needed to meet the needs of each individual development phase. The modeling shows that acceptable service would be provided to the Project, and the backbone transmission main system is adequately sized for any combination of Phases 1 through 4. Each new development phase would be required to provide the hydraulic modeling needed to verify SCWA’s operating criteria for the proposed main extensions.

CONCLUSION

SWCA has identified a backbone system that includes the minimum offsite and onsite water transmission improvements needed to serve the Project (see Plates WS-5 and WS-6). SCWA’s Water System Infrastructure Plan includes anticipated demand from the Project and demonstrates that the Project could be served by this planned infrastructure. Future expansion and implementation of planned projects in the NSA would be conducted by SCWA and would be subject to separate environmental review and approval.

Development of onsite 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. Construction of onsite water supply infrastructure would not result in utility-specific adverse physical impacts. Impacts would be **less than significant**.

Alternative 2

Alternative 2 would require construction of offsite improvements and development of an internal water distribution system. Total water demand would be slightly less than the Project, but the same level of water supply infrastructure would be required. The effects of constructing onsite water supply infrastructure are evaluated in applicable resource chapters of this EIR and would not result in utility-specific adverse physical impacts. Future expansion and implementation of planned projects in the NSA would be conducted by SCWA and would be subject to separate environmental review and approval. Impacts associated with the construction or expansion of water supply infrastructure would be **less than significant.**

Mitigation Measures

No mitigation is required in addition to the measures proposed for other ground disturbing activities.

Impact: Result in Demand for Water That Cannot be Met by Existing or Reasonably Foreseeable Future Service Capacity

Proposed Project

SCWA has prepared a Water Supply Assessment (WSA) (SCWA 2016a) in accordance with the California Water Code Sections 10910-10915, which demonstrates that the planned water supplies for Zone 40 would be sufficient to meet the demands of the Project in addition to the existing and projected water supply obligations over the next 20 years (see Appendix WS-2). The proposed land uses and projected water demand for the Project are provided in Table WS-2.

Table WS-2: Proposed Land Use and Water Demands Estimate for the Project

Land Uses	Corresponding Land Use Classification in WSMP	Unit Water Demand Factor (ac-ft/yr)	Acreage	Water Demand (ac-ft/yr)
Residential Designations				
LD- Low Density Residential	Single Family	2.13	355.7	757.6
MD-Medium Density Residential	Multi-Family Low Density	2.44	136.3	332.6
HD- High Density Residential	Multi-Family High Density	3.33	85.5	284.7
Subtotal		-	**577.5**	**1,374.9**
Commercial + Office Zones				
GC-General Commercial	Commercial	2.02	59.3	119.8
CC-Community Commercial	Commercial	2.02	17.6	35.6
MU-Mixed Use	Mixed Land Use	2.15	19.6	42.1
O- Office	Commercial	2.02	33.6	67.9
Subtotal		-	**130.1**	**265.4**
Public/Quasi Public Zones				
PQP-Fire Station/Comm Ctr/Tank	Public	0.81	6.0	4.9

Land Uses	Corresponding Land Use Classification in WSMP	Unit Water Demand Factor (ac-ft/yr)	Acreage	Water Demand (ac-ft/yr)
Site				
PQP-High/Middle School	Public Recreation	2.80	70.0	196.0
PQP-Elementary School	Public Recreation	2.80	30.0	84.0
Subtotal		**-**	**106.0**	**284.9**
Park + Open Space Zones				
CP- Community Park	Public Recreation	2.80	23.6	66.1
P- Neighborhood Park	Public Recreation	2.80	49.7	139.2
OS- Wetland Preserve	Non-Irrigated	0.00	214.3	0.0
OS- Greenbelt/Drainage Corridor	Public Recreation	2.80	60.9	170.5
OS- Landscape Corridor	Public Recreation	2.80	14.5	40.6
Subtotal		-	**363.0**	**416.4**
Ag and Roads				
AG-Agriculture	-	0.00	109.8	0.0
RW- Primary Roadways	Right-of-Way	0.18	104.6	18.8
Subtotal		-	**214.4**	**18.8**
TOTAL			**1,391.0**	**2,360.3**

Source: SWCA 2016a

In addition to calculating water demand based on land use type (see Table WS-2, above), the WSA projects water demand based on population projections. Based on the proposed land uses, as listed in Table PD-2 in Chapter 2, “Project Description,” a total of 6,143 dwelling units are proposed with the Project and the Project is anticipated to have an annual average demand of 2,374.6 afy (including 7.5 percent system losses) at buildout. While slightly higher than the projection based on land use type, the WSA notes that this difference in total demand is minimal (SWCA 2016a).

Within the NSA, treated surface water is provided via the NSA pipeline Phase A which began conveying water from the Vineyard SWTP for storage in the Anatolia Storage Tanks on May 9, 2017 (Nguyen, pers. comm., 2017). With an initial phase capacity of 50 mgd and an ultimate capacity of 100 mgd, the Vineyard SWTP would be capable of supplying treated water needs of the NSA for the near term (Stantec 2017). There would be adequate water available to meet the Project’s annual water demand for normal and dry years because supplies are demonstrated to exceed the projected buildout water demand for the NSA by more than the projected demand from the Project, as illustrated below in Table WS-3.

As described in the WSA and summarized above, SCWA determined that sufficient water supplies exist to serve the Project in near and long-term scenarios through the SCWA’s existing groundwater and surface water supplies. The Central Basin, upon which the Project lies, is currently non-adjudicated, and the defined limits which regulate the amount of groundwater that may be extracted by the SCWA are sufficient to supply the Project.

Table WS-3: Zone 40 Water Supply Sufficiency Analysis, in 5-Year Increments

Water Year	2020	2025	2030	2035	2040
Normal Year					
Total Supply (afy)	82,900	82,900	87,900	97,900	97,900
Total Demand (afy)	48,121	55,490	63,288	71,143	79,278
Sufficiency[1] (afy)	34,779	27,410	24,612	26,757	18,622
Single-Dry Year					
Total Supply (afy)	70,200	70,500	74,600	83,600	83,800
Total Demand (afy)	48,121	55,490	63,288	71,143	79,278
Sufficiency[1] (afy)	22,079	15,010	11,312	12,457	4,522
Multiple-Dry Year (1)					
Total Supply (afy)	77,900	77,900	81,900	90,900	90,900
Total Demand (afy)	48,121	55,490	63,288	71,143	79,278
Sufficiency[1] (afy)	29,779	22,410	18,612	19,757	11,622
Multiple-Dry Year (2)					
Total Supply (afy)	77,900	77,900	81,900	90,900	90,900
Total Demand (afy)	48,121	55,490	63,288	71,143	79,278
Sufficiency[1] (afy)	29,779	22,410	18,612	19,757	11,622
Multiple-Dry Year (3)					
Total Supply (afy)	70,200	70,500	74,600	83,600	83,800
Total Demand (afy)	48,121	55,490	63,288	71,143	79,278
Sufficiency[1] (afy)	22,079	15,010	11,312	12,457	4,522

Notes: 1 Sufficiency = supply minus demand

Source: SCWA 2016a

The Project includes a Water Supply Master Plan Amendment to modify the existing Zone 40 Water Supply Master Plan so that it includes provision of water service to the Jackson Township Specific Plan Area. The amendment addresses the water demands and infrastructure necessary to service the Project and requires approval from the Sacramento County Water Agency Board of Directors (see Appendix WS-3).

The Jackson Township Potable Water System Study (Stantec 2017) provides a detailed analysis of the water distribution system and verifies the base information in the WSMP Amendment prepared by SCWA. Various hydraulic models were prepared to calculate the maximum day (4.24 mgd), peak hour (8.48 mgd) and fire flow (4,000 gpm for 4 hours) demands of the Plan Area. Based on the conclusions of the WSA and the Potable Water System Study, the Project would result in **less-than-significant** impacts on SWCA's service capacity.

Alternative 2

SWCA would also supply water to Alternative 2. Alternative 2 includes 11 acres more residential development than the Project with a density 0.1 DU per acre higher, and 1 added acre of commercial and office uses. Based on land use water demand factors, Alternative 2 could generate 12 afy of additional water demand when compared to the Project (see Table WS-4). The overall level of development under Alternative 2 (and

corresponding water demand) would be similar to the Project. The demand would be within the margin of sufficiency identified in Table WS-3. Therefore, Alternative 2 would result in **less-than-significant** impacts on SWCA's service capacity.

Table WS-4: Proposed Land Use and Water Demands Estimate for Alternative 2

Land Uses	Corresponding Land Use Classification in WSMP	Unit Water Demand Factor (ac-ft/yr)	Acreage	Water Demand (ac-ft/yr)
Residential Designations				
LD- Low Density Residential	Single Family	2.13	382.6	814.9
MD-Medium Density Residential	Multi-Family Low Density	2.44	124.5	303.8
HD- High Density Residential	Multi-Family High Density	3.33	82.0	273.1
Subtotal		-	589.1	1,391.8
Commercial + Office Zones				
GC-General Commercial	Commercial	2.02	59.7	120.6
CC-Community Commercial	Commercial	2.02	16.2	32.7
MU-Mixed Use	Mixed Land Use	2.15	19.7	42.4
O- Office	Commercial	2.02	35.2	71.1
Subtotal		-	130.8	266.8
Public/Quasi Public Zones				
PQP-Fire Station/Comm Ctr/Tank Site	Public	0.81	1.0	0.8
PQP-High/Middle School	Public Recreation	2.80	70.0	196.0
PQP-Elementary School	Public Recreation	2.80	30.0	84.0
Subtotal		-	101.0	280.8
Park + Open Space Zones				
CP- Community Park	Public Recreation	2.80	40.6	113.7
P- Neighborhood Park	Public Recreation	2.80	38.2	107.0
OS- Wetland Preserve	Non-Irrigated	0.00	259.8	-
OS- Greenbelt/Drainage Corridor	Public Recreation	2.80	55.6	155.7
OS- Landscape Corridor	Public Recreation	2.80	14.5	40.6
Subtotal		-	1408.7	417.0
Ag and Roads				
AG-Agriculture	-	0.00	74.7	-
RW- Primary Roadways	Right-of-Way	0.18	86.7	15.6
Subtotal		-		
TOTAL			**1,391.0**	**2,372.0**

Source: Compiled by Ascent Environmental based on demand factors in SWCA 2016a

MITIGATION MEASURES

No mitigation is required.

Impact: Contribute to Groundwater Pumping Such That the Average Annual Sustainable Yield for the Central Sacramento Groundwater Basin is Exceeded

Proposed Project

As described above, Project water demands would be met by 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 naturally replenishes. 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 2016a). 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 (WFA 2000).

As a part of the SCGA, SCWA has committed to the implementation of the CSCGMP. The CSCGMP contains five BMOs designed to maintain a safe, sustainable, and high-quality groundwater resource within the Central Basin. The BMOs 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 2016a).

Therefore, as described within the Jackson Township 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.

Alternative 2

Alternative 2 would require a similar amount of water from SCWA as the Project. Impacts related to the demand for groundwater would be **less than significant** because SWCA manages the groundwater basin to maintain a sustainable yield as a signatory to the WFA and member of the Sacramento Central Groundwater Authority.

Mitigation Measures

No mitigation is required.

Impact: Interfere Substantially With Groundwater Recharge

Proposed Project

As indicated above and described in more detail in Chapter 12, “Geology, Soils, and Mineral Resources,” most soils in the Plan Area contain clay and are characterized by very slow permeability. As a result, the area is does not currently permit substantial

percolation of rainwater and the Plan Area does not contribute substantially to groundwater recharge. Therefore, although the Project would introduce impervious surfaces that prevent or hinder groundwater recharge; because 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, of the effects on groundwater recharge in the Central Basin would be limited.

Additionally, the Project includes 368 acres of primarily undeveloped space that would be in park and open space zones. Therefore, approximately 26 percent of the Plan Area would allow for the percolation of stormwater. Proposed detention basins would be connected to the open space corridors that are included in the Project. The corridors would convey stormwater 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 basins would hold stormwater and allow for gradual recharge of the groundwater table within the Plan Area. The inclusion of basins would reduce the overall impact of impervious surfaces created by the Project. With the provision of 26 percent of the site as undeveloped space where percolation can occur and the collection of stormwater in groundwater basins that could allow groundwater recharge, the Project would not result in the substantial interference with groundwater recharge. Therefore, impacts would be **less than significant** related to groundwater recharge.

ALTERNATIVE 2

Alternative 2 would include nearly 408 acres in park and open space zones (29 percent of the Plan Area). There would be similar effect on groundwater recharge in the Plan Area because the potion of the Plan Area available for recharge would be similar and the surface water would be collected in basins, as described for the Project, which would allow additional infiltration. Impacts related to the groundwater recharge potential would be **less than significant** for Alternative 2.

MITIGATION MEASURES

No mitigation is required.

19 WASTEWATER AND SOLID WASTE UTILITIES

INTRODUCTION

This chapter addresses wastewater and solid waste. The analysis describes relevant master planning of the utility services and whether the infrastructure and demands of the Project or Alternative 2 are consistent with the utility master plans. No comments submitted in response to the Notice of Preparation relate to wastewater or solid waste. For a discussion of water supply, refer to Chapter 19, “Water Supply.” Electricity and natural gas infrastructure are evaluated in Chapter 11, “Energy.”

ENVIRONMENTAL SETTING

URBAN SERVICES BOUNDARY

The Plan Area is located outside, but immediately adjacent to, the existing Urban Policy Area (UPA) and is within the Urban Services Boundary (USB). The USB identifies the limits of the area where unincorporated urban growth is expected to occur beyond the 2030 General Plan 20-year planning period and indicates the ultimate boundary of the urban area in the unincorporated county. This boundary is based upon jurisdictional, natural, and environmental constraints to urban growth. Originally established with the 1993 General Plan, it was refined as a part of the 2030 General Plan . The purpose of the USB is to allow for the planning of necessary infrastructure, such as sewer pipelines, which have service lives longer than 20 years (Sacramento County 2011 and SASD 2011:2-1). Several service providers have developed long-range infrastructure master plans based on the USB boundaries.

SEWER SERVICE

SACRAMENTO AREA SEWER DISTRICT

The Sacramento Area Sewer District (SASD) provides local wastewater collection and conveyance services and infrastructure throughout the Sacramento region. SASD maintains and provides wastewater collection and conveyance from the local residences and businesses in the urbanized, unincorporated areas of Sacramento County; the cities of Elk Grove, Rancho Cordova, and Citrus Heights; portions of the city of Sacramento; and a very small area in the city of Folsom. The service area covers approximately 270 square miles and has a population of over 750,000. The smaller local pipelines that SASD operates connect to the larger regional interceptors maintained by the Sacramento Regional County Sanitation District (SRCSD, also referred to as Regional San).

The Plan Area is not within SASD’s existing service area. However, Sacramento County’s USB constitutes the sphere of influence (SOI) for the SASD. Existing development to the north and west of the Plan Area are within the SASD service area

and there is existing infrastructure in the area. Further, the Plan Area is within the study area for SASD's 2010 Sewer System Capacity Plan. The Sewer System Capacity Plan identifies future gravity mains near the Plan Area and assumed flow from an average of six equivalent single-family dwellings (ESDs) per acre in the area (SASD 2011).

Sacramento Regional County Sanitation District

SRCSD provides wastewater conveyance and treatment services to residential, commercial, and industrial customers in portions of unincorporated Sacramento County; the cities of Citrus Heights, Elk Grove, Folsom, Rancho Cordova, Sacramento, and West Sacramento; and the communities of Courtland and Walnut Grove. Wastewater travels through a system comprised of 169 miles of interceptor pipelines, 46 miles of force mains (pressurized pipes), and 11 pump stations before it reaches the Sacramento Regional Wastewater Treatment Plant (SRWTP). There, it is treated and discharged to the Sacramento River. In normal weather years, SRCSD treats an average of approximately 150 million gallons of wastewater each day (mgd) (SRCSD 2015).

The Plan Area is not currently within the service area of SRCSD; however, the USB constitutes the SOI for SRCSD. SRCSD's 2013 Interceptor Sequencing Study included in the Plan Area as part of the Sacramento County Jackson Highway Vision and assumed development of 2.9 to 3.9 ESD per gross acre (SRCSD 2013).

Sacramento Regional Wastewater Treatment Plant

Wastewater flows collected from SRCSD's interceptors are ultimately transported into the SRWTP. The SRWTP is located west of Elk Grove and is owned and managed by SRCSD. Currently, the SRWTP has a National Pollutant Discharge Elimination System (NPDES) permit issued by the Central Valley Regional Water Quality Control Board (RWQCB) for discharge of up to 181 mgd average dry-weather flow of treated effluent into the Sacramento River. The SRWTP has the potential for expansion to 218 mgd. As of 2015, the SRWTP received and treated an average of 150 mgd each day and the SRWTP discharge constituents were below permitted discharge limits specified in the NPDES permit (SRCSD 2015).

SRCSD is upgrading the SRWTP through the EchoWater Project adopted in 2011. 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. SRCSD must complete construction of the new treatment facilities to achieve permit and settlement requirements by May 2021 for ammonia and nitrate and by May 2023 for compliance with pathogen requirements. The upgrade will not, however, result in a net increase in the permitted capacity of the SRWTP (SRCSD 2015).

SRCSD expects per capita consumption to fall 25 percent over the next 20 or more years through the ongoing installation and use of water meters, as well as compliance with recent conservation mandates. As such, substantial additional conservation is expected throughout the service area, allowing the existing 181 mgd average dry-weather flow capacity to be adequate for at least 40 more years (SRCSD 2014:6-2).

Solid Waste

Sacramento County Department of Waste Management and Recycling

Sacramento County Department of Waste Management and Recycling provides solid waste and recycling services for the single-family uses within the Plan Area. Services for residential homes include weekly garbage collection, bi-weekly collection of mixed recyclables, bi-weekly collection of green waste, monthly street sweeping and one annual appointment-based bulky waste collection. Solid waste and recycling services for multi-family apartments (five units or more), commercial and business solid waste services are performed on a contract basis with franchised haulers that are permitted to provide services in Sacramento County.

Kiefer Landfill

The Waste Management and Recycling Department operates the Kiefer Landfill. 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).

Regulatory Setting

Federal

There are no federal regulations applicable to the analysis of wastewater and solid waste.

State

California Integrated Waste Management Act and CalRecycle

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 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.

Senate Bill 1016, signed into law on September 26, 2008, represents a fundamental shift in the way local jurisdictions are measured for compliance with state diversion mandates. Jurisdictions are now evaluated based on the implementation of programs that measure per capita waste disposal, rather than diversion percentage.

LOCAL

SACRAMENTO LOCAL AGENCY FORMATION COMMISSION

Local Agency Formation Commissions (LAFCos) govern the formation of new agencies, incorporation of new cities and districts, consolidation or reorganization of special districts and/or cities, as well as municipal service reviews and sphere of influence updates, and annexations of cities and special districts. The broad goals of the Sacramento LAFCo's directive are to ensure the orderly formation of local governmental agencies, to preserve agricultural and open space lands, and to discourage urban sprawl. LAFCos must, by law, create Municipal Service Reviews and update Spheres of Influence for each independent local governmental jurisdiction within their jurisdiction.

SACRAMENTO COUNTY INTEGRATED WASTE MANAGEMENT PLAN

The Sacramento County Integrated Waste Management Plan is maintained and re-approved by CalRecycle through a mandatory 5-year review cycle, most recently in May of 2014. 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 or county, respectively)
- Household Hazardous Waste Elements (by city or county, respectively)
- Non-disposal Facility Elements (by city or county, respectively)

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 and Recycling. The remaining documents are prepared and administered by each individual jurisdiction or regional agency.

SACRAMENTO REGIONAL SOLID WASTE AUTHORITY

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. The SWA regulates commercial solid waste collection by franchised haulers and offers recycling services to multi-family dwelling units.

SWA ORDINANCES

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 Construction and Demolition (C&D) 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.

SACRAMENTO COUNTY 2030 GENERAL PLAN

The following 2030 General Plan policies pertaining to wastewater and solid waste are applicable to the Project:

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-13. Public sewer systems shall not extend service into agricultural-residential areas outside the urban policy area unless the Environmental Health Department determines that there exists significant environmental or health risks created by private disposal systems serving existing development and no feasible alternatives exist to public sewer service.

PF-14. Independent community sewer systems shall not be established for new development.

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.

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.

COMMUNITY PLANS

CORDOVA COMMUNITY PLAN

The Cordova Community Plan, which was last updated in 2003, provides guidance for both new development and the redevelopment of existing land uses within the community planning area. Objectives identified in the plan that are applicable to the Project include:

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.

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.

VINEYARD COMMUNITY PLAN

The Vineyard Community Plan, which was developed in 1985, provides guidance for growth and development in the community planning area. Policies identified in the plan that are applicable to the Project include:

FU 4. Urban developers shall provide public sewer and surface water facilities and shall bear the full cost of providing these facilities within the proposed development and a fair share of any associated costs outside the development.

IMPACTS AND ANALYSIS

SIGNIFICANCE CRITERIA

Based on the CEQA Guidelines, an impact related to wastewater or solid waste is significant if implementation of the Project would:

1. Require the construction of new or the expansion of existing utility facilities that could potentially cause significant construction-related environmental effects.
2. Result in a service demand that cannot be met by existing or reasonably foreseeable future service capacity.
3. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, of otherwise impair the attainment of solid waste reduction goals.
4. Result in non-compliance with federal, state, and local management and reduction statutes and regulations related to solid waste.

ISSUES NOT DISCUSSED FURTHER

Future development of the Plan Area would convey wastewater to the SRWTP, which operates under waste discharge requirements (WDRs) issued by RWQCB. Because the SRWTP is regulated by RWQCB and would be required to ensure that its wastewater discharge to the Sacramento River meets all applicable water quality requirements, the Project would not result in wastewater that would fail to comply with the WDRs of the RWQCB. This impact is not discussed further. The potential to overburden the existing wastewater treatment facility, requiring new or expanded facilities to meet applicable treatment requirements, is discussed below.

Future development of the Plan Area would generate solid waste associated with domestic use (e.g., food waste, paper, limited medical-related waste) and construction-related waste from grading, clearing, and erecting buildings. Construction and operation of the future development in the Plan Area would follow all relevant federal, state, and local statutes and regulations associated with collection and disposal of waste generated at the site. Thus, there would be no impact related to violation of solid waste laws and regulations and this topic is not discussed further.

METHODOLOGY

The following analysis is based on the estimated population and land use plans described in Chapter 2, "Project Description," as well as applicable utility master plans. The generation rates published by the applicable oversight agencies have been applied to determine the potential volume or wastewater and solid waste produced under full buildout of the Project. This is compared to the available capacity of the infrastructure to determine if the Project can be accommodated, or if additional capacity would be needed. As indicated in Chapter 2, the Project would require annexation of the Plan Area into the SASD and SRCSD service areas.

IMPACT: ADVERSE EFFECTS ASSOCIATED WITH CONSTRUCTION OF WASTEWATER TREATMENT AND DISPOSAL INFRASTRUCTURE

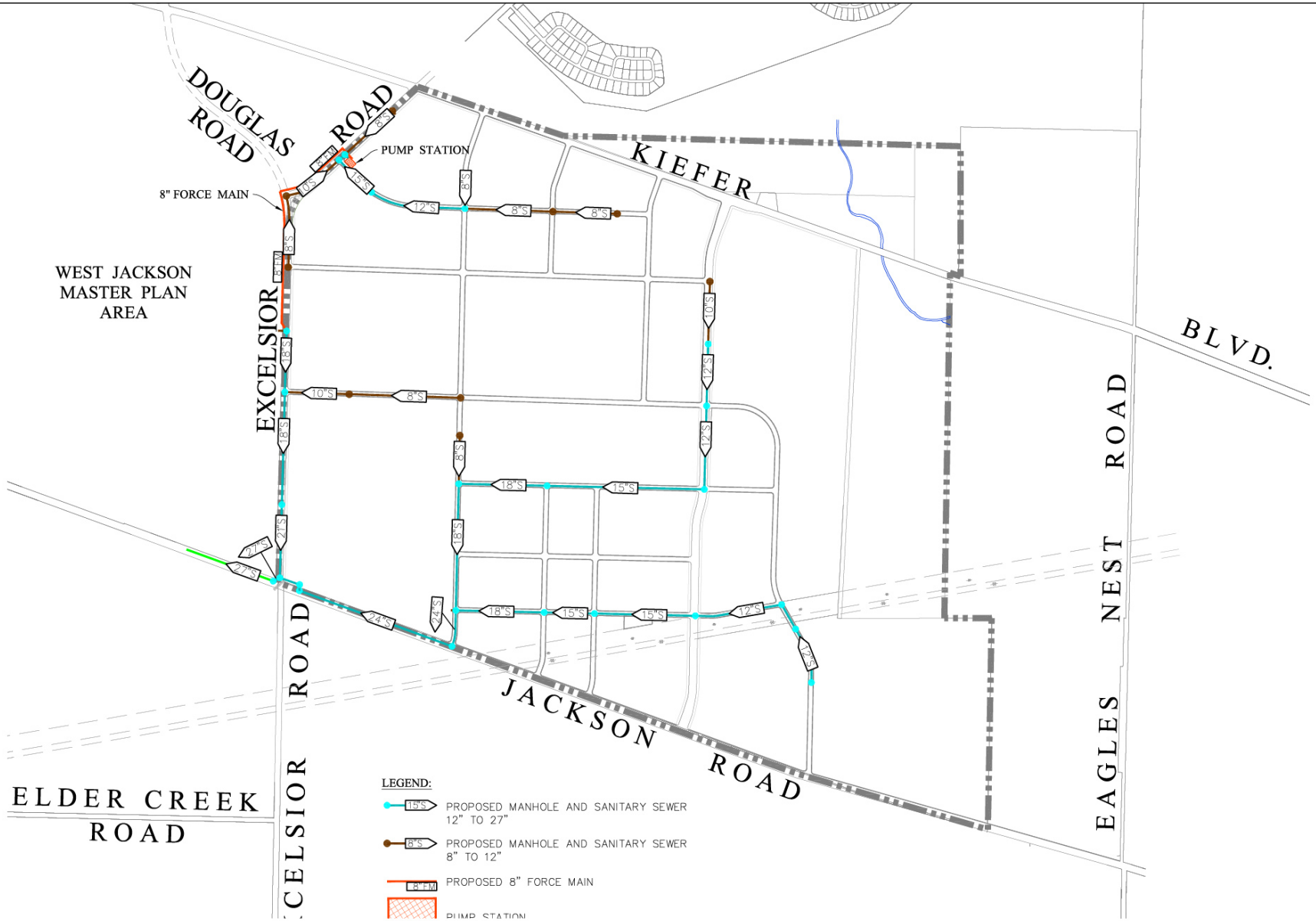
PROPOSED PROJECT

No wastewater collection or treatment facilities are currently present in the Plan Area. Existing agricultural and rural residential land uses in the Plan Area are served by individual septic systems. Development of the Project would require municipal wastewater service. SASD would be the local wastewater collection service provider for development in the Plan Area; although LAFCo would need to approve annexation of the Plan Area into SASD's service area before service is provided. The area to the north of the Plan Area is within the SASD service area and there is existing infrastructure in the area.

A Sanitary Sewer Study (Au Clair Consulting 2016) has been prepared by the Project Applicant and approved by SASD. The study provides sitting and sizing information for an internal collection network, as well as a plan to extend SASD sanitary sewer service to the Plan Area. The collection network has been designed to locate the main trunk lines on property owned by the Project Applicant or within the rights of way for Jackson Road (also referred to as Jackson Highway) and Excelsior Road.

As illustrated in Plate WU-1, the majority of the Plan Area would be serviced by an onsite gravity collection system designed to drain to the southwest from the northeast corner of the Plan Area. A pump station and force main would serve the northwest quadrant of the Plan Area where the elevation is too low to gravity flow to the system serving the balance of the Plan Area. Construction of infrastructure within the boundaries of the Plan Area has been evaluated throughout this EIR.

To provide a connection to existing SASD infrastructure, the Jackson Road trunk line would be extended for approximately 2 miles within the Jackson Road right of way from the Bradshaw Interceptor to the intersection of Jackson Road and Excelsior Road with the first phase of development (see Plate WU-2). The Sacramento County Code regulates public sewage systems within the county. The County Code includes requirements related to connection, design, and operation to ensure public safety and to lessen environmental impacts. Wastewater service for proposed development is subject to regulatory review and compliance with applicable wastewater master plans.



Source: Image prepared by Tsakopoulos Investments in 2019 for the Jackson Township Specific Plan

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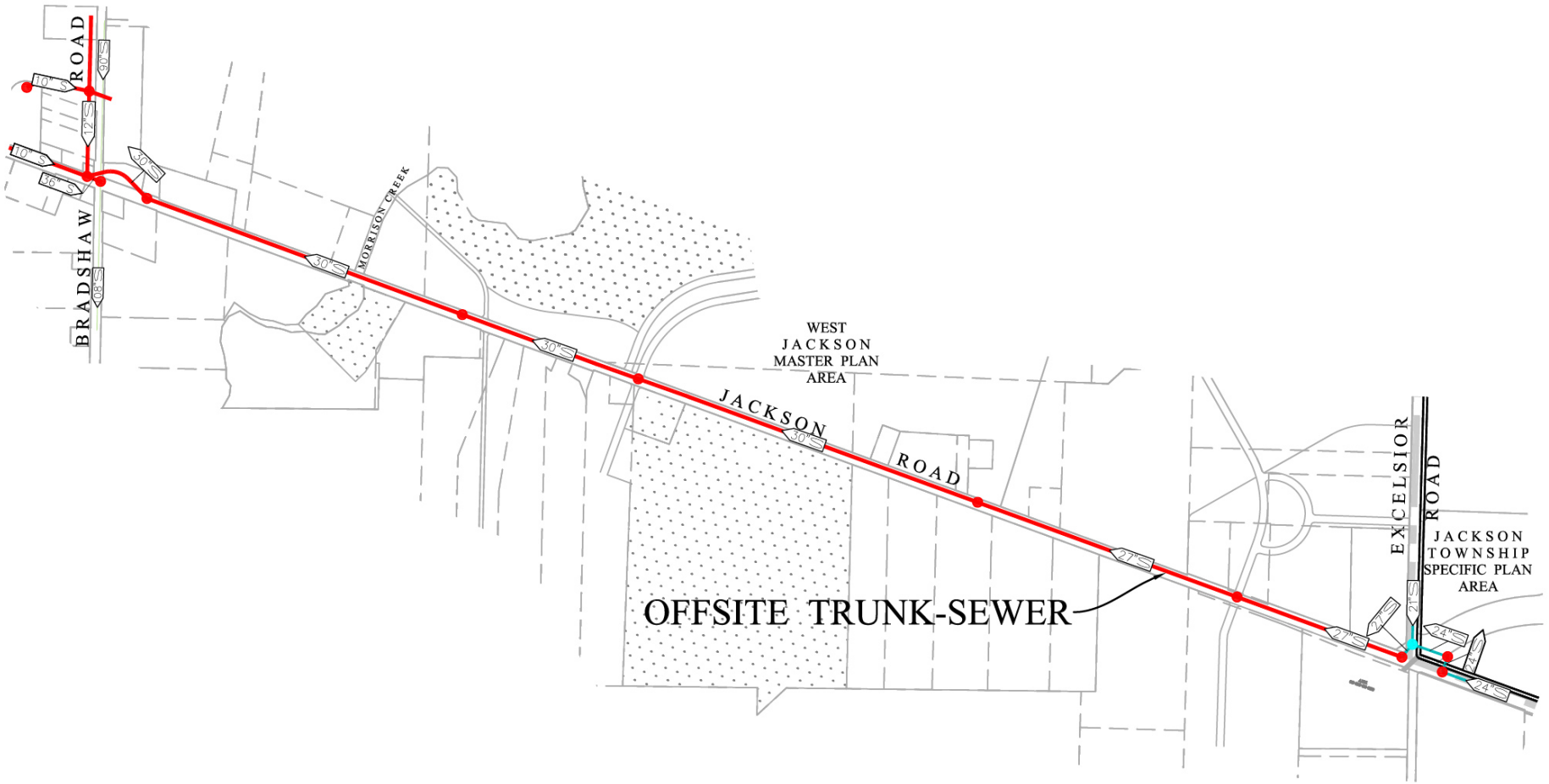
Plate WU-1: Proposed Onsite Wastewater System

ASCENT ENVIRONMENTAL



Source: Figure prepared by Au Clair Consulting in 2019 for the Jackson Township Specific Plan

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Plate WU-2: Proposed Wastewater Trunkline Extension

ASCENT ENVIRONMENTAL

For areas outside of the urbanized area, the 2010 Sewer System Capacity Plan assumed that potential densities could be similar to those projected for near-term urban development. An average density of six ESDs per acre was assumed. This is 8,346 ESDs in the 1,391 acres of the Plan Area. The Sanitary Sewer Study assumes that the Project would generate 8,836 ESDs and a peak weather wet flow of 5.96 MGD based on the proposal and SASD's Design Standards and Specifications (Au Clair Consulting 2016). The Sanitary Sewer Study demonstrates consistency with the assumptions in SASD's Sewer Capacity Plan and compliance with 2030 General Plan Policies PF-9 and PF-18.

The Sanitary Sewer Study identifies the Federal Emergency Management Agency 100-year floodplains and potential for conflict with existing land uses (including the Camellia Memorial Lawn Cemetery, three residential properties, and a gas station) as potential areas of concern associated with the trunk line extension.

Other environmental effects from the construction of offsite infrastructure could include:

- Air Quality: air pollutant and toxic air contaminant emissions from construction activities that exceed thresholds recommended by the Sacramento Metropolitan Air Quality Management District
- Archaeological, Historical, and Tribal Cultural Resources: damage or loss of significant cultural resources from construction activities
- Biological Resources: loss of habitat and direct impacts to special-status plant and animal species
- Greenhouse Gases: temporary emission of greenhouse gases during construction
- Hazards and Hazardous Materials: potential exposure or release of hazardous materials or contamination during construction
- Hydrology and Water Quality: construction-related stormwater quality impacts
- Noise: temporary excessive noise levels during construction on sensitive noise receptors
- Transportation: temporary disruption of roadways and congestion from construction activities and equipment.

The anticipated demand for sewer services and proposed on- and offsite wastewater infrastructure would be consistent with regional projections developed by SASD and Project-specific sanitary sewer plans have been reviewed and approved by SASD. Implementation of the mitigation measures identified throughout this EIR and compliance with the County Code would address areas of potential effects associated with the offsite construction of the Jackson Road trunk lines and would reduce the potential for adverse effects associated with the construction of offsite wastewater infrastructure to a **less-than-significant** level.

ALTERNATIVE 2

Alternative 2 would also require construction of the Jackson Road trunk line extension and development of an internal collection system. Impacts associated with the construction of this infrastructure would be **less than significant** because implementation of the mitigation measures identified throughout this EIR and

compliance with the County Code would address areas of potential effects associated with the offsite construction of the Jackson Road trunk tines.

Mitigation Measures

No mitigation is required in addition to the measures proposed for other ground disturbing activities associated with the Project.

Impact: Exceed the Capacity of the Wastewater Treatment Provider

Proposed Project

As discussed above, the SRWTP is permitted to treat an ADWF of 181 mgd and a daily peak wet weather flow of 392 mgd; the SRWTP currently receives and treats approximately 141 mgd (Sacramento County 2010). The Project would increase the existing treatment plant flows from 141 mgd to roughly 147 mgd (assuming a peak weather wet flow of 5.96 mgd), which is well within the SRWTP's existing 181 mgd capacity. Therefore, it is anticipated that the SRWTP would have adequate capacity to treat wastewater flows generated by future development. This impact would be **less than significant**.

Alternative 2

Alternative 2 would result in slightly less development and would likely require slightly less wastewater treatment capacity than the Project. The SRWTP would have adequate capacity to treat wastewater flows generated by future development. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

Impact: Solid Waste Services and Landfill Capacity

Proposed Project

Buildout of the Project would result in approximately 16,498 new residents. CalRecycle estimates a daily per resident disposal rate of 6 pounds. This results in an estimated generation rate of 49 tons per day upon buildout of the Project that would be collected by the County and transferred to Kiefer Landfill. Kiefer Landfill's permitted capacity is approximately 117 million cubic yards. As of 2005, the landfill had a remaining capacity of approximately 113 million cubic yards (i.e., 96 percent remaining). The estimated closure date for Kiefer Landfill is 2064. The Project would produce less than 0.5 percent of the 10,815-ton permitted daily throughput for the facility. This small increase in solid waste would not consume a substantial proportion of the available permitted capacity and would not result in the need to expand or construct new landfill facilities.

Based on the available capacity of Kiefer Landfill, the portion of the permitted capacity that the Project is estimated to require, and the estimated closure date for the landfill, the

Project would be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs. Commercial and industrial waste generated by the Project would be collected by franchise haulers and may be transported to landfills outside of the county. The impact would be **less than significant**.

Alternative 2

Based on population projections and a daily disposal rate of 6 pounds per person, Alternative 2 would generate 6 tons of solid waste per day. These solid waste generation rates are similar to, and slightly less than, those evaluated for the Project. As identified above for the Project, it is anticipated that Keifer Landfill would have adequate capacity to accept waste generated by future development. This impact would be **less than significant**.

Mitigation Measures

No mitigation is required.

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20 TRAFFIC AND CIRCULATION

INTRODUCTION

This chapter is based on information presented in the *Jackson Township Specific Plan Transportation Impact Report* (Transportation Report) prepared by DKS Associates in 2019. The full Transportation Report is included as Appendix TR-1 and provides additional detailed information related to the transportation and circulation analysis. The Transportation Report focuses on the 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 for the Project and Alternative 2.

During the Notice of Preparation (NOP) scoping process, commenters raised concerns about effects on Jackson Highway, coordination with Caltrans, bicycle and pedestrian mobility, and access to public transit. A copy of the NOP and comment letters received in response to the NOP are included in Appendix INT-1 of this EIR.

ANALYSIS SCENARIOS

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 Project impacts are measured. The existing conditions represent conditions in spring 2013.
- Existing Plus Proposed Project: analyzes the transportation and circulation effects associated with implementation and buildout of the Project. This scenario reflects buildout of Jackson Township added directly to existing (spring 2013) conditions to isolate the effects of the Project against the existing baseline. Therefore, this scenario does not account for the incremental nature of project implementation (i.e., buildout of the Project would occur over time) or changes that would occur outside the Project in the Plan Area (i.e., installation of programmed offsite transportation facilities or implementation of other development projects).
- Existing Plus Alternative 2: same analysis scope as Existing Plus Proposed Project.

JACKSON CORRIDOR PROJECTS

The Transportation Report discusses existing and cumulative transportation and circulation conditions associated with the implementation of the Project. In addition, the Transportation Report discusses the combined effects of implementing the following four master plans in the Jackson Corridor (as shown in Plate CU-3), 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. 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 Transportation Report 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 the combined Jackson Corridor Projects, and provides 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 Transportation Report 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. The transportation analyses were subsequently 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 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.

Therefore, although SacDOT identified increases in ADT within the study area from 2013 to 2016/2017, the 2013 traffic data is used and is considered valid for the purposes of this analysis because it provides the County with a consistent data set and approach for the Jackson Corridor Projects.

ENVIRONMENTAL SETTING

This section describes existing regional and local environmental conditions relevant to transportation and circulation.

PROJECT STUDY AREA

As illustrated in Plate TC-1, the Project is in unincorporated Sacramento County, generally east of the City of Sacramento, southwest of the City of Rancho Cordova, and south of Mather Airport. It is bounded to the south by Jackson Road (State Route [SR] 16), to the west by Excelsior Road, and to the east by Eagles Nest Road. The northern boundary is near the future Kiefer Boulevard.

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 TC-2 through TC-4 illustrate the traffic study area, which was developed and agreed upon by all the aforementioned jurisdictions and agencies.

EXISTING ROADWAY NETWORK

Plate TC-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 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, 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 near the Plan Area. Near the Plan Area, SR 16 is called Jackson Road or Jackson Highway, which is the southern boundary of the Jackson Township Plan Area. This segment of the facility was authorized to be relinquished to Sacramento County and the City of Rancho Cordova (east of Sunrise Boulevard) in 2014. That relinquishment process is currently underway and is currently expected to be completed in 2020. The segment of SR 16 from Highway 50 to South Watt Avenue has already been relinquished to the City of Sacramento. In Sacramento County, 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/Jackson Road intersects several major Sacramento County arterial intersections such as Bradshaw Road, Sunrise Boulevard, and Grant Line Road.

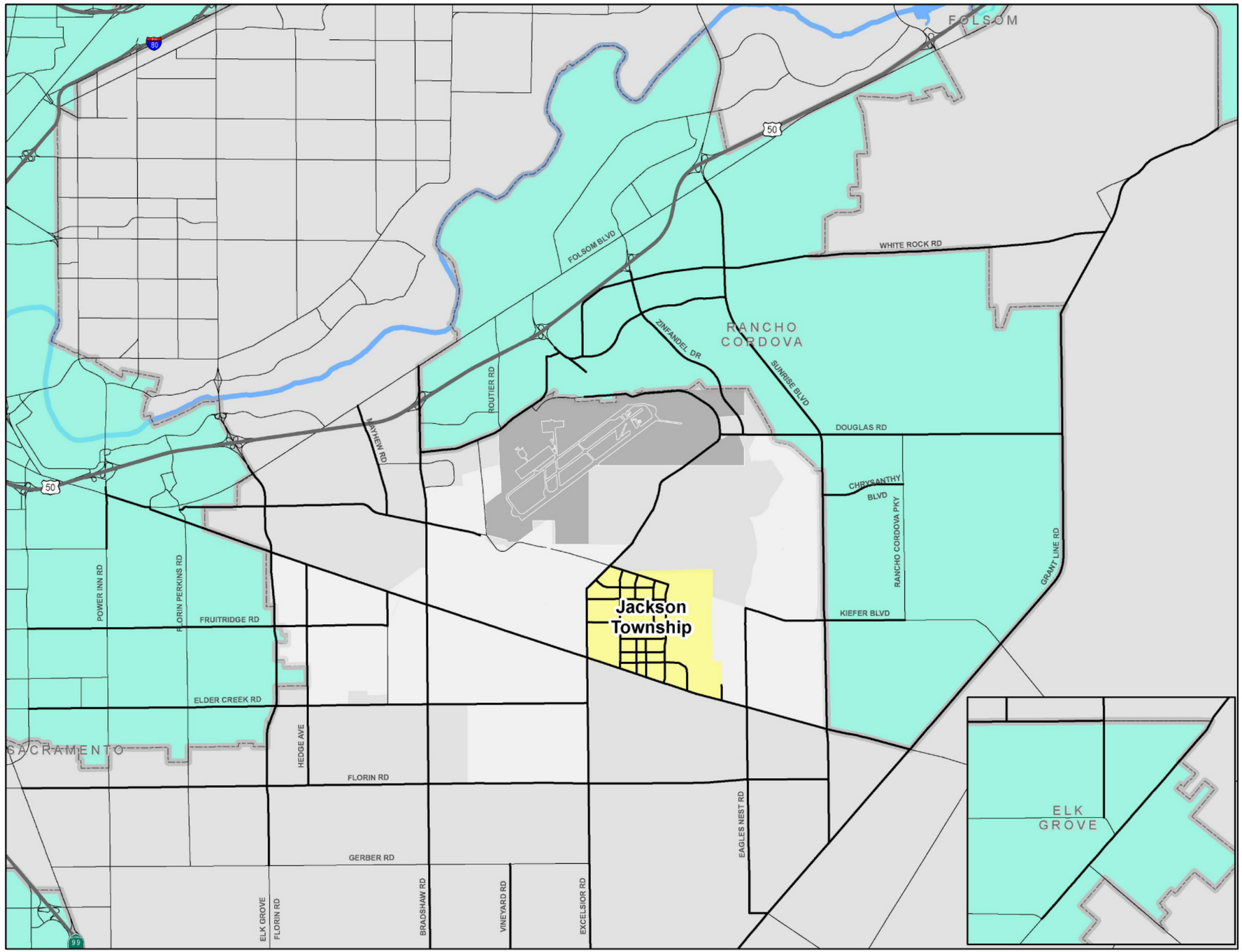
The roadway generally travels from west-northwest to east-southeast from Folsom Boulevard into Amador County. It is generally a two-lane roadway with some widening at intersections. To the west, SR 16 continues to US 50 via Folsom Boulevard and Howe Avenue in the City of Sacramento.

Local Access

Direct access to the Plan Area is provided via SR 16, Excelsior Road, and the future Kiefer Boulevard. SR 16 is described above and the other roadways providing local access are described below.

Excelsior Road is a two lane north-south roadway that forms the western boundary of the Plan Area. To the north, Excelsior Road extends into the Independence at Mather community. Beyond this community, the roadway becomes Mather Boulevard. To the south, Excelsior Road extends to Sheldon Road into the City of Elk Grove.

Kiefer Boulevard is an east-west roadway that crosses the northern portion of the 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 location. East of Mather Airport, the roadway begins at Eagles Nest Road and continues east to Jackson Road as a two-lane roadway. Although the County current owns the right-of-way, the portion of Kiefer Boulevard that crosses the northern portion of the Plan Area does not currently exist and would be implemented as part of the Project.



Legend

- JT Study Roadway Segments
- Freeways
- Other Major Roadways

Name

- Jackson Township Project
- Cities
- Mather Airport

Source: Image prepared and provided by DKS Associates in 2019

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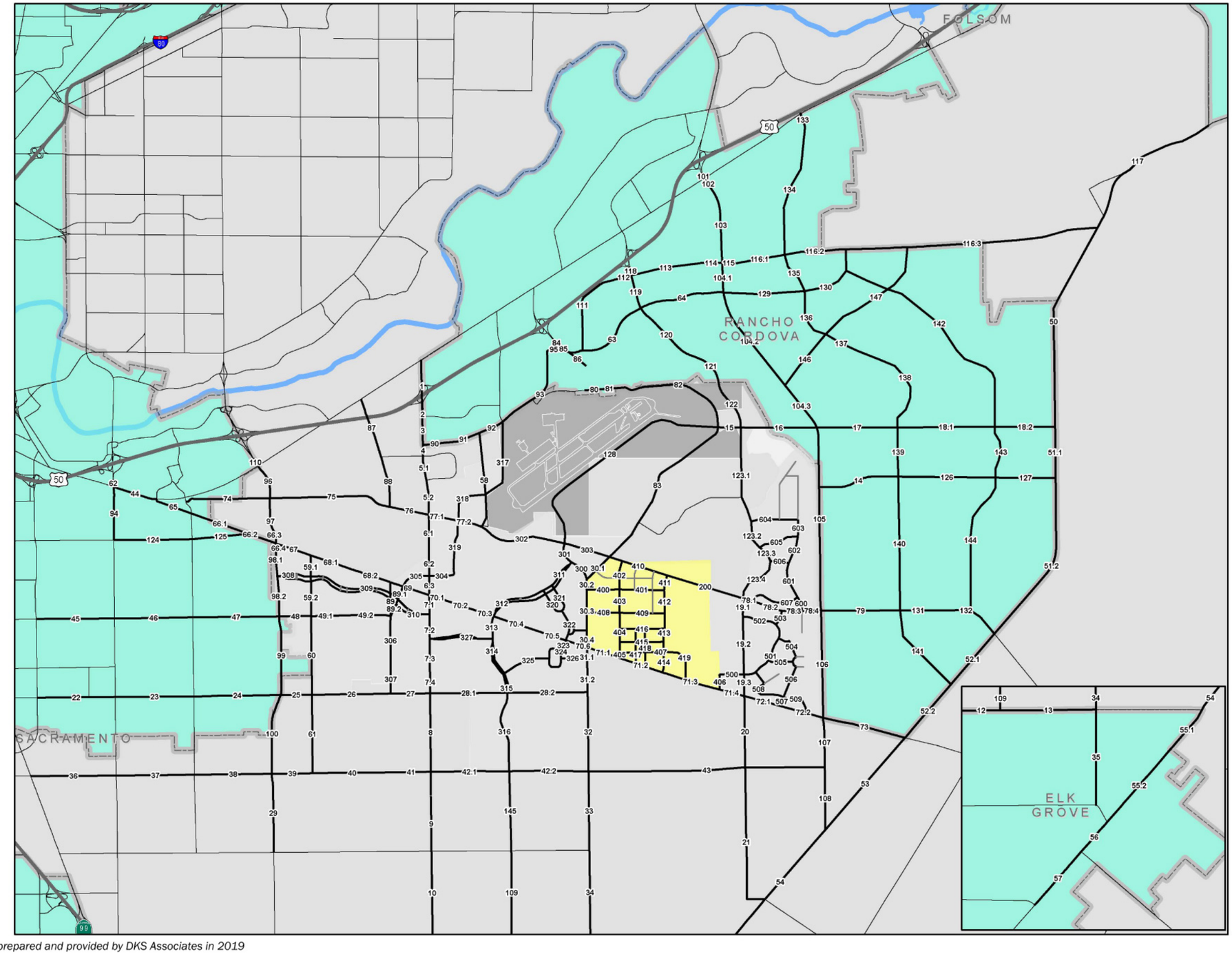
Plate TC-1: Regional Transportation Network

ASCENT ENVIRONMENTAL



Source: Image prepared and provided by DKS Associates in 2019

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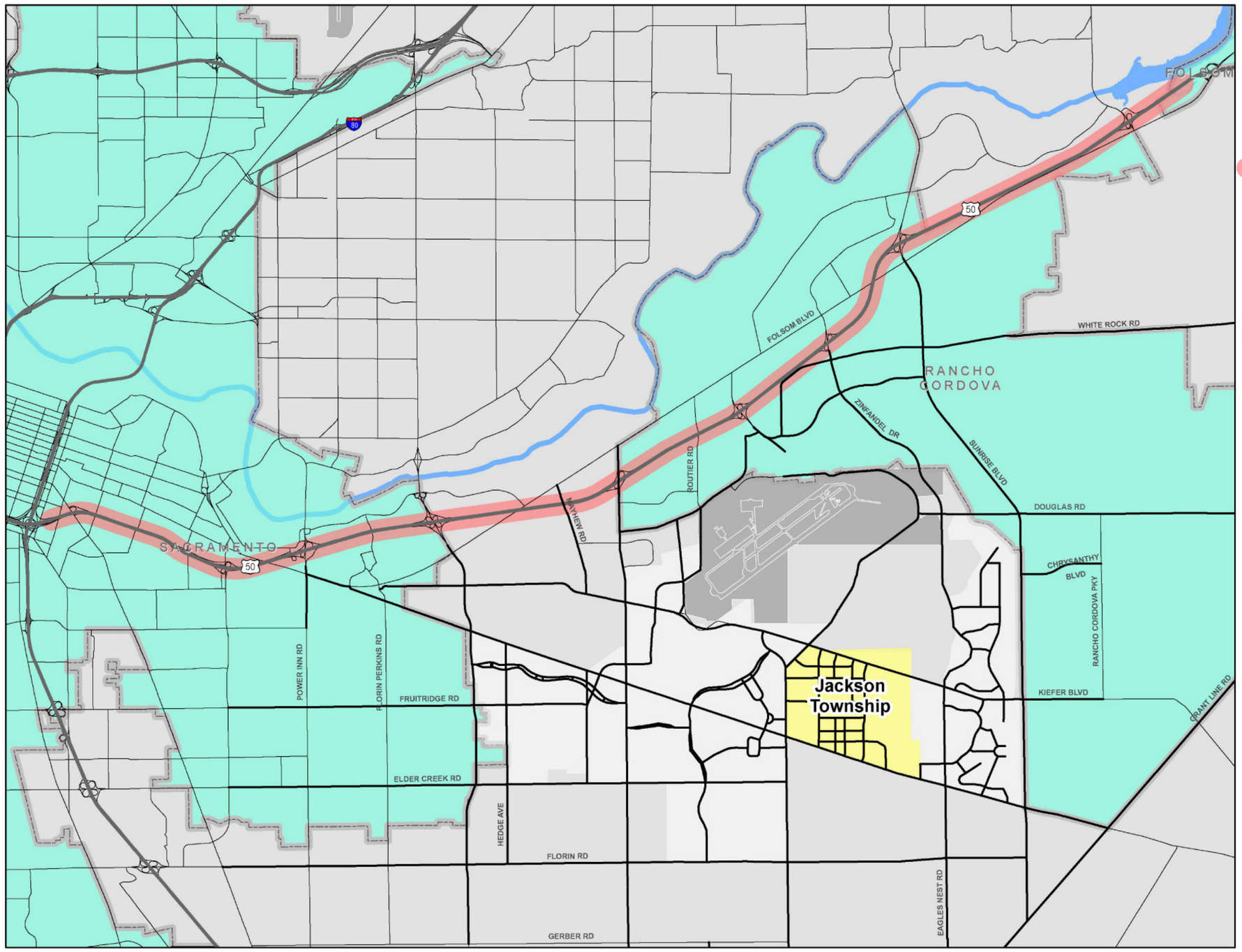
Plate TC-2: Study Area Roadway Segments

ASCENT ENVIRONMENTAL



Source: Image prepared and provided by DKS Associates in 2019

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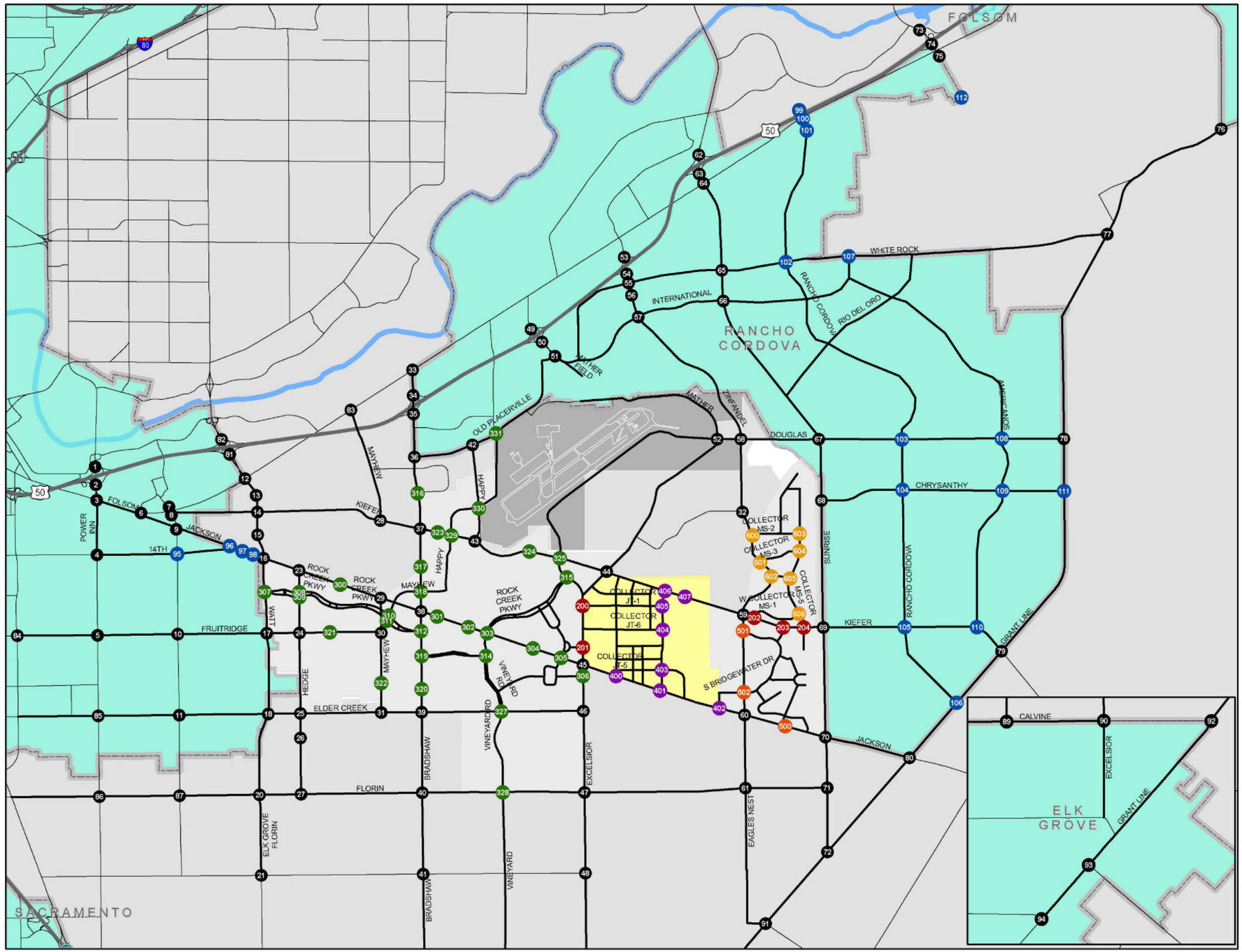
Plate TC-3: Freeway Study Area



Legend

- Existing
- Future Outside Project Boundaries
- Shared Between Two Projects
- West Jackson
- Jackson Township
- NewBridge
- Mather South
- Study Roadways
- Freeways
- Other Major Roadways
- Jackson Township Project
- Cities
- Mather Airport

Source: Image prepared and provided by DKS Associates in 2019

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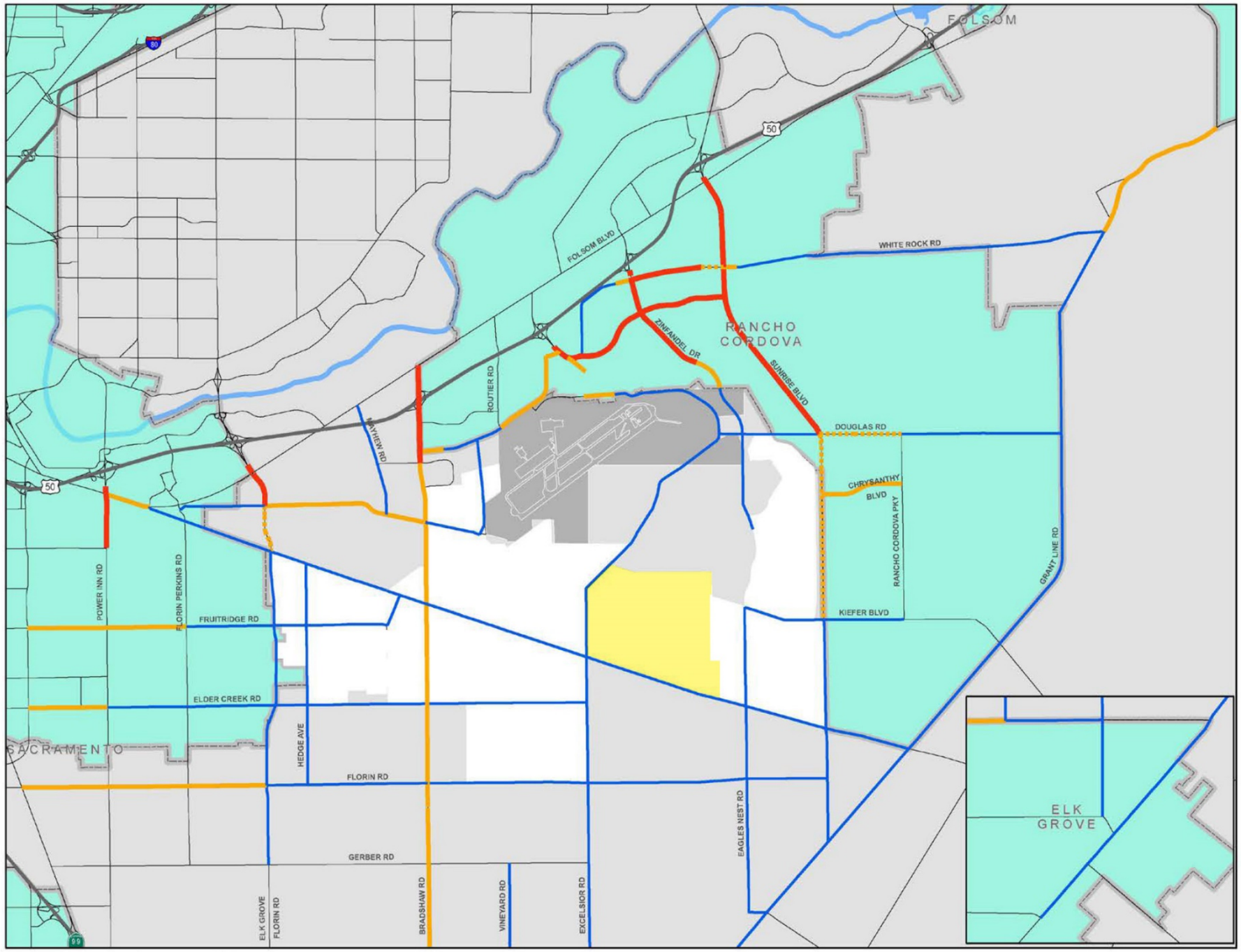
Plate TC-4: Study Area Intersections

ASCENT ENVIRONMENTAL



Legend

- 2 Lanes
- 3 Lanes
- 4 Lanes
- 5 Lanes
- 6 Lanes
- 7 Lanes
- Cities
- Mather Airport
- Jackson Township Project

Source: Image prepared and provided by DKS Associates in 2019

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Plate TC-5: Existing Conditions Roadway Network

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 (Monday through Friday) and every 30 minutes in the evening and on weekends. Blue Line and Gold Line trains operate until midnight on weekdays and 10:30 p.m. on weekends. Green Line trains only operate Monday through Friday. (Sacramento Regional Transit District 2019)

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 TC-6 illustrates selected SacRT service near the Plan Area. The SacRT Gold Line light rail service is located parallel to Folsom Boulevard north of the Jackson Township 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 Plan Area.

Existing Bicycle and Pedestrian System

Plate TC-7 illustrates the Sacramento County Bikeway Master Plan in the vicinity of the Jackson Township Plan Area, depicting existing and planned bikeways. An existing Class I bikeway (Elder Creek Trail) crosses the southern portion of the Plan Area. Future Class II Bikeways are planned on SR 16, Excelsior Road, and Kiefer Boulevard.

The pedestrian sidewalk system is incomplete within the vicinity of the Plan Area. As development 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 and daily (24-hour) roadway segment counts were collected within the study area on Tuesday, Wednesday, and Thursday in April and early May of 2013. 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.

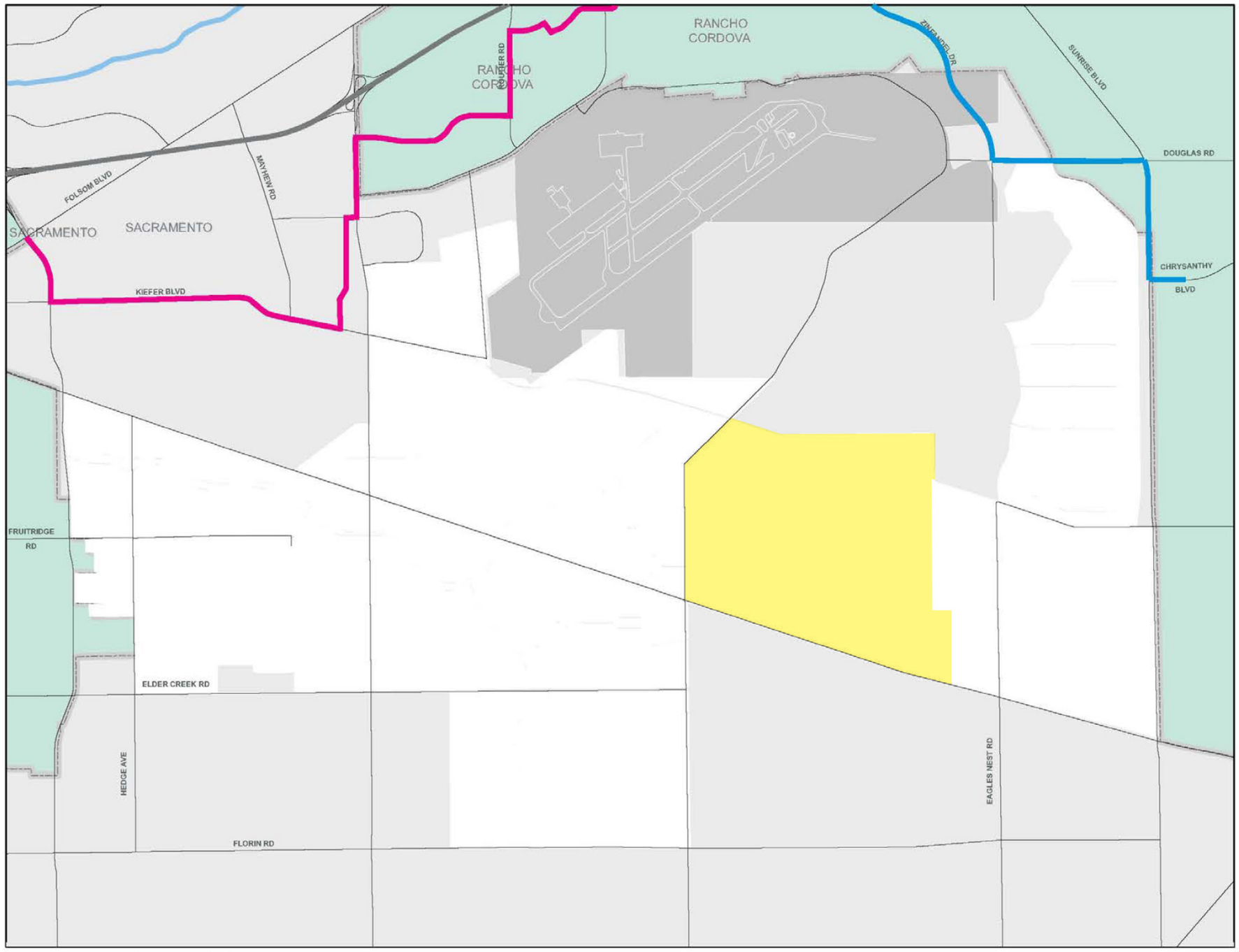
Field reconnaissance was undertaken to ascertain the traffic control and geometry of each of the traffic study area intersections, roadway segments, and freeway elements. Combined with known or projected traffic volumes, these characteristics form the basis for the calculation of LOS detailed within 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 considers typical peak hour volume profiles, as well as the effects of signalized intersections in reducing the roadway’s carrying capacity.



Source: Image prepared and provided by DKS Associates in 2019

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Plate TC-6: Existing Conditions Transit Network

Legend

Bikeway Plan On Street

On Street Existing/Future

- Existing class 2
- Existing class 3
- Existing class 3, Future class 2
- Future class 2
- Future class 3

Bikeway Plan Off Street

Off Street Exisitng/Future

- Existing class 1
- Future class 1

Jackson Township Project

Source: Image prepared and provided by DKS Associates in 2019

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Plate TC-7: Existing Bicycle Network

ASCENT ENVIRONMENTAL

Table TC-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 2019

Table TC-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 2019

Table TC-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)	4	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 2019

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 TC-4 presents the LOS criteria for signalized and unsignalized intersections based on the HCM methodology.

Table TC-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 2019

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 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 TC-5 presents the LOS criteria for the freeway mainline segments, which are divided into basic, merge/diverge, and weaving segments.

Table TC-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 farm to market roadways. While these narrow roadways have adequately served the travel demand of the past, they are not intended to serve the greater travel demands that nearby residential and commercial development may result in.

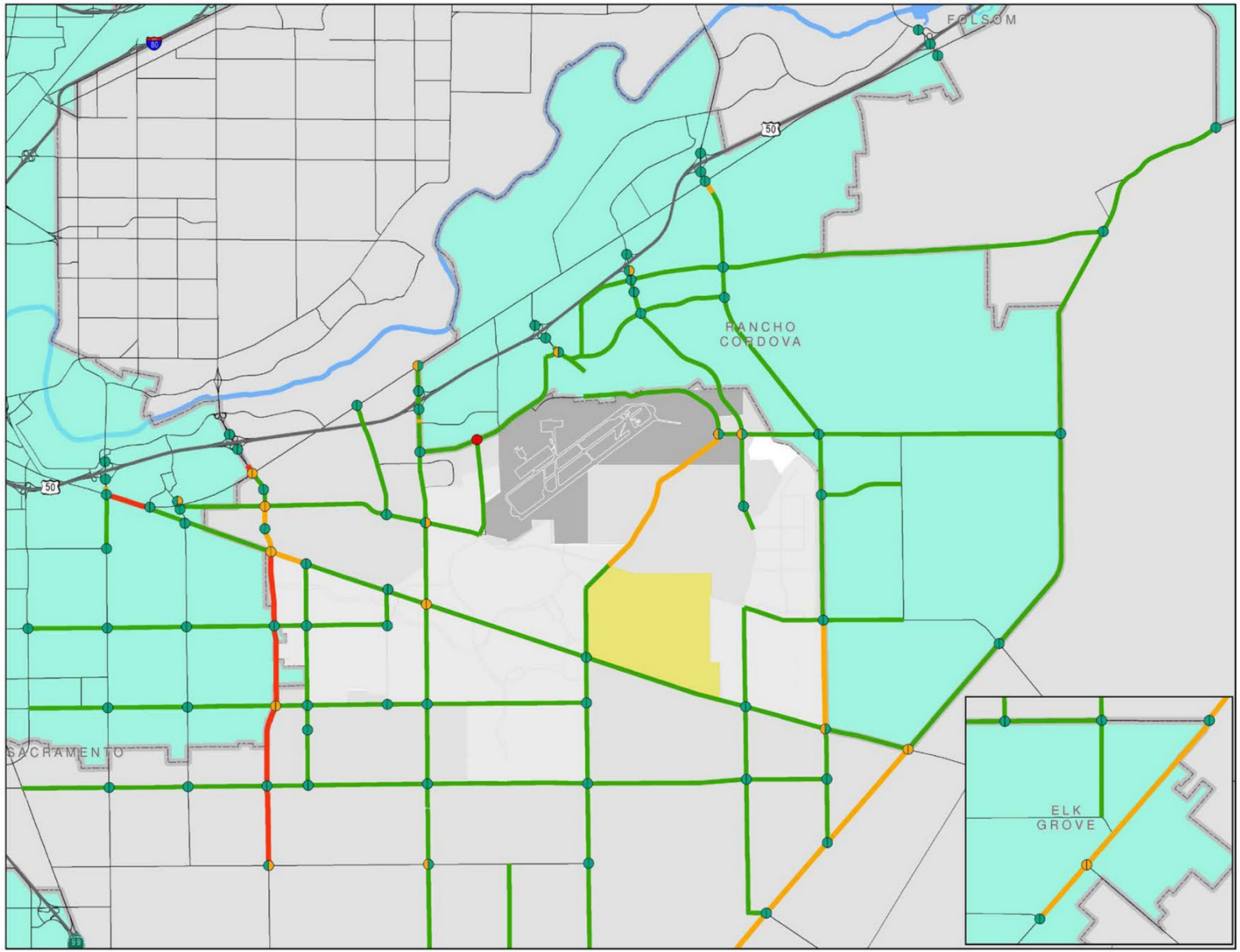
The County expects that the functionality of these roadways will change with nearby development, the increase in population, the introduction of various modes of travel in the study area, and the addition of traffic on these substandard roadways. With these changes in functionality of the roadway comes the possibility of increased interactions between varying modes of travel (i.e., pedestrians and bicyclists), as well as the increased interaction between a greater number of vehicles on substandard roads.

Existing Operating Conditions

As discussed further below and summarized in Plate TC-8, existing roadway and intersection operating conditions are generally satisfactory adjacent to the Plan Area, although deficiencies were identified on roadways providing key north to south linkage 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 TC-6 summarizes the roadway LOS, and the performance of the segment compared to the LOS thresholds of the applicable jurisdiction for the roadway segments currently operating at deficient levels. Detailed roadway segment operating condition calculations and the full list of study area roadway segment operating conditions are included in Appendix TR-1.



Source: Image prepared and provided by DKS Associates in 2019

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Plate TC-8: Existing Conditions Roadway Segment and Intersection LOS

Table TC-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 2019

INTERSECTION OPERATING CONDITIONS

Existing intersection geometry (number of approach lanes and traffic control) is illustrated in detail in Appendix TR-1.

Table TC-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 TC-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 HIGHWAY 50

Table TC-8 summarizes a.m. and p.m. peak hour US 50 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 TC-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 2019

Table TC-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 Mather Field Rd	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 Boulevard	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 2019

FREEWAY MERGE / DIVERGE / WEAVE SEGMENT OPERATING CONDITIONS

Table TC-9 summarizes a.m. and p.m. peak hour freeway operations at merge/diverge/weave segments. Detailed 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

Table TC-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	1,062	A
	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	

Direction	Location	Junction Type	A.M. Peak Hour		P.M. Peak Hour	
			Ramp Volume	LOS	Ramp Volume	LOS
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	1,550	B	800	B
	Sunrise Boulevard Exit	One-Lane Diverge	749	E	758	D
	Sunrise Boulevard Entrance	Lane Addition	2,183	**F**	1,656	D
	Zinfandel Drive Exit	One-Lane Diverge	1,034	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	1,093	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	1,236	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	1,373	D	1,188	C
	Northbound Watt Avenue Entrance	One-Lane Merge	820	D	943	C
	Southbound Watt Avenue Slip Entrance	Lane Addition/Weave	1,232	C	1,317	D
	Howe Avenue Exit	Major Diverge/Weave	1,531	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 2019

FREEWAY RAMP INTERSECTION QUEUING CONDITIONS

Table TC-10 summarizes a.m. and p.m. peak hour freeway ramp intersection queuing. None of the existing queues extend onto the freeway mainline. Detailed freeway ramp queuing analysis is included in Appendix TR-1.

Table TC-10: Existing Peak Hour Freeway Ramp Termini Queuing

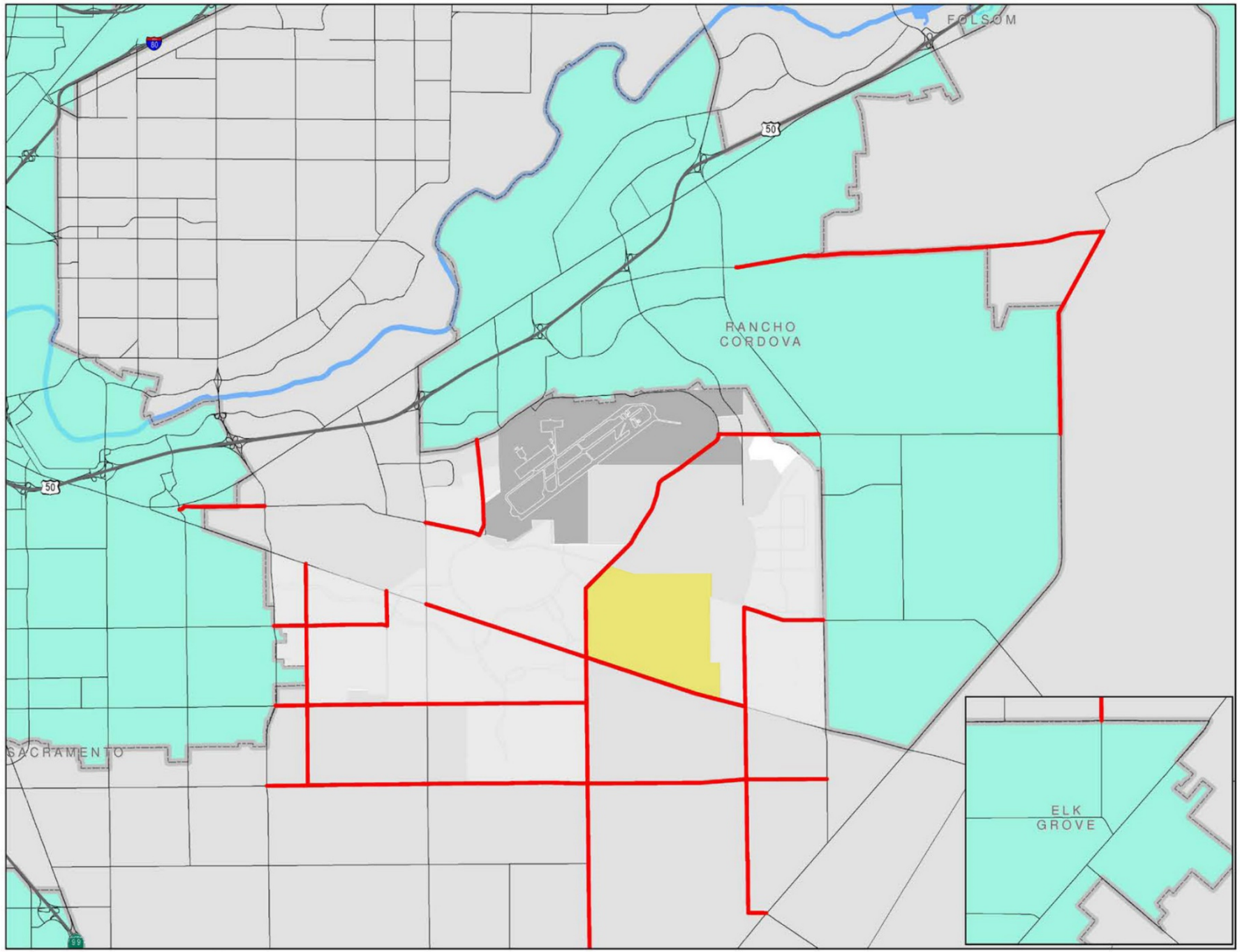
Direction	US 50 Exit Ramp	Available Storage Length (feet/lane)			Maximum Queue Length (fee/lane)					
					Existing A.M. Peak Hour			Existing P.M. Peak Hour		
		L	T	R	L	T	R	L	T	R
Eastbound US 50	Howe Avenue	765	-	765	200	-	378	224	-	247
	Watt Avenue	1,500	-	1,500	179	-	201	254	-	181
	Bradshaw Road	1,250	-	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 2019

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 TC-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 TC-11 summarizes substandard County rural roadways in the study area. Jackson Road and Excelsior Road, which bound the Plan Area to the south and west, respectively, are identified as substandard.



Source: Image prepared and provided by DKS Associates in 2019

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Plate TC-9: Existing Substandard Roadways

Table TC-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 2019

REGULATORY SETTING

FEDERAL

There are no federal laws or regulations that are relevant to potential transportation impacts of the 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 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, required the California Governor's Office of Planning and Research (OPR) to develop new CEQA guidelines that address traffic metrics under CEQA. Specifically, SB 743 required 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 which included proposed updates related to analyzing transportation

impacts pursuant to Senate Bill 743. The most recently published Technical Advisory on Evaluating Transportation Impacts (December 2018) 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. The Office of Administrative Law subsequently approved the updated CEQA Guidelines, and local agencies will have an opt-in period until July 1, 2020 to implement the updated guidelines.

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 next MTP/SCS is required to be adopted by February 2020 and is in the process of being completed. The Jackson Township Specific Plan is included as a developing community in the regional growth forecast of the MTP/SCS, and the Plan Area and number of units under the Project is consistent with the Jackson Township Specific Plan area detailed in the MTP/SCS. However, the 2016 MTP/SCS identifies the Plan Area as being located in a portion of the Blueprint growth footprint that is not identified for growth in the next 20 years (i.e., through 2036), which is inconsistent with the 2035 buildout assumed in this analysis.

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, 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 following 2030 General Plan policies pertaining to mobility, including roadways, transit, and bicycle and pedestrian facilities are applicable to the Project.

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-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 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 the analysis in this chapter:

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 citywide transportation system 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 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

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).

COMMUNITY PLANS

CORDOVA COMMUNITY PLAN

The Cordova Community Plan, which was last updated in 2003, provides guidance for both new development and the redevelopment of existing land uses within the community planning area. 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.

VINEYARD COMMUNITY PLAN

The Vineyard Community Plan, which was developed in 1985, provides guidance for growth and development in the community planning area. The following policy identified in the plan would apply to the Project:

NER-1. Encourage land use proposals which reduce reliance on the automobile by offering area residents alternative commute modes, including public transit.

SACRAMENTO COUNTY BICYCLE MASTER PLAN

The Sacramento County Bicycle Master Plan (SCBMP) (Sacramento County 2011) 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 existing SCBMP border the Plan Area on the major arterial streets west and south of the Plan Area:

- a Class II Bikeway is proposed along Excelsior Road; and
- an extension of the Class II bikeway on Jackson Road is planned from its current terminus west of the Plan Area to the Amador County line;
- an extension of the Class II bikeway on Kiefer Boulevard is planned from its current terminus near Bradshaw Road to Sunrise Boulevard.

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

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 Project would result in a significant impact related to transportation and circulation if the significance summarized below would be exceeded.

ROADWAYS SEGMENT AND INTERSECTION OPERATIONS IMPACTS

Table TC-12 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 TC-12: 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 Project would result in:

- Off-ramps with vehicle queues that extend into the ramp's deceleration area or onto the freeway;
- Project traffic increases that cause any ramp's merge / diverge LOS to be worse than the freeway's LOS;
- Project traffic increases that cause the freeway LOS to deteriorate beyond LOS threshold defined in the Caltrans Route Concept Report for the facility;

- 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 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 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 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 Project would:

- Result in inadequate emergency access.

Transportation hazards are considered significant if the Project would:

- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment).

ISSUES NOT DISCUSSED FURTHER

Impacts associated with the proximity of Mather Airport to the Plan Area are analyzed within Chapter 5, “Airport Compatibility,” and this issue is not discussed further in this section.

METHODOLOGY

This section describes the methodology used to analyze expected transportation conditions associated with implementation of the Project. The Transportation Report included as Appendix TR-1 provides detailed modeling and quantitative transportation and circulation analysis for the Project and Alternative 2.

PROJECT CHARACTERISTICS

PROJECT TRIP GENERATION

The SACSIM model was utilized to estimate transportation forecasts based on estimated trip generation of the Project alternatives. Table TC-13 and Table TC-14 summarize the person trip generation of the Project and Alternative 2, respectively.

Table TC-13: Estimated Person Trip Generation with Project Implementation

Trip Purpose	Daily Person Trip Ends
Work Trips	15,882
Non-Work Trips	99,078
All Trip Purposes	114,960

Source: DKS Associates 2019

Table TC-14: Estimated Person Trip Generation with Alternative 2 Implementation

Trip Purpose	Daily Person Trip Ends
Work Trips	15,508
Non-Work Trips	99,693
All Trip Purposes	112,200

Source: DKS Associates 2019

The Project would generate over 15,880 daily work person trip ends, and approximately 114,960 daily person trip ends for all trip purposes. Alternative 2 would generate over 15,500 daily work person trip ends, and approximately 112,200 daily person trip ends for all trip purposes.

Table TC-15 and Table TC-16 summarize the estimated mode choice of the Existing plus Project scenarios of the Project and Alternative 2, respectively. The mode choice assumes full implementation of the Project's pedestrian and bicycle systems.

Table TC-15: Mode Split Proposed Project

Mode	Percentage of Person Trips by Trip Purpose		
	Work Trips	Non-Work Trips	All Trip Purposes
Auto - SOV	84.9%	43.1%	48.9%
Auto - HOV	9.9%	39.3%	35.2%
Transit	2.4%	1.0%	1.2%
Walk	2.1%	15.7%	13.8%
Bike	0.6%	1.0%	0.9%

Notes: SOV = single-occupancy vehicle, HOV = high-occupancy vehicle
Source: DKS Associates 2019

Table TC-16: Mode Split with Alternative 2 Implementation

Mode	Percentage of Person Trips by Trip Purpose		
	Work Trips	Non-Work Trips	All Trip Purposes
Auto - SOV	84.7%	43.2%	48.9%
Auto - HOV	9.8%	39.3%	35.2%
Transit	2.2%	1.0%	1.1%
Walk	2.9%	15.7%	14.0%
Bike	0.3%	0.9%	0.8%

Notes: SOV = single-occupancy vehicle, HOV = high-occupancy vehicle
Source: DKS Associates 2019

Table TC-17 and Table TC-18 summarizes the Jackson Township Project vehicular (auto) trip generation for the Project and Alternative 2, respectively.

Table TC-17: Project Estimated Daily Vehicle Trip Generation

Trip Type		AM Peak Hour	PM Peak Hour	Daily
Total Vehicle Trip Ends		6,762	6,615	72,665
Percent Internal Trip Ends[1]		25.3%	29.1%	28.3%
Vehicle Trips	Internal to Project	854	964	10,281
	External to Project	5,055	4,687	52,103
	Total	5,909	5,651	62,384

[1] Both trip ends within the project.
Source: DKS Associates 2019

Table TC-18: Alternative 2 Estimated Daily Vehicle Trip Generation

Trip Type		AM Peak Hour	PM Peak Hour	Daily
Total Vehicle Trip Ends		6,423	6,578	70,928
Percent Internal Trip Ends[1]		24.7%	30.1%	28.7%
Vehicle Trips	Internal to Project	793	989	10,170
	External to Project	4,838	4,600	50,585
	Total	5,630	5,589	60,755

[1] Both trip ends within the Project.
Source: DKS Associates 2019

Under the Project, over 20,500 of the daily vehicle trip ends would be associated with trips with both an origin and destination within the Plan Area, making up over 28 percent of the trip ends. The internal trip ends represent over 10,000 daily vehicle trips (one-half the number of internal trip ends). The Project would generate over 52,000 external

vehicle trips that have an origin or destination inside the Plan Area, but the other end of the trip is outside the Plan Area.

Table TC-17 and Table TC-18 also shows the vehicle trips generated during the a.m. and p.m. peak hours for the Project and Alternative 2, respectively.

Alternative 2 is estimated to generate approximately 71,000 daily vehicle trip ends. The Project is estimated to generate over 72,000 daily vehicle trip ends.

It should be noted that more than one-person trip may be accommodated by a vehicle trip (e.g., carpooling). Under Alternative 2, over 20,000 of the daily vehicle trip ends would be associated with trips with both an origin and destination within the Plan Area, making up over 28 percent of the trip ends. The internal trip ends represent about 10,200 daily vehicle trips (one-half the number of internal trip ends). Alternative 2 would generate over 50,000 external vehicle trips that have an origin or destination inside the Plan Area, but the other end of the trip is outside the Plan Area.

PROJECT TRIP DISTRIBUTION

The distribution of trips associated with development on the Project was derived utilizing SACSIM and by incorporating the proposed land use and access locations associated with the Project. Plate TC-10 and Plate TC-11 illustrate the overall trip distribution under the Proposed Project and Alternative 2 scenarios, respectively. The highest percentages of traffic generated by the Project would use Jackson Road and Excelsior Road.

PROJECT TRANSPORTATION IMPROVEMENTS

ROADWAY SEGMENT AND INTERSECTION IMPROVEMENTS

The 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 TC-19 and Table TC-20 show the existing and proposed roadway geometrics assumed under the Project and Alternative 2, respectively.

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.

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 Highway corridor consistent with the intent of the County's policies.

An important consideration in the development of a transit network for the Jackson Highway corridor is that there are four major development projects proposed in the corridor. 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 Highway 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.–3:00 p.m. and 6:00 p.m.–8:00 p.m.) on weekdays. Plate TC-12 and Plate TC-13 illustrate the proposed transit system for the Project and Alternative 2, respectively. These transit networks represent 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 Chapter 21, "Summary of Impacts."

The proposed transit system for the Project is described in the Project Description chapter of this EIR and 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 Project Applicant through the Project's 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 Project. Additionally, the ultimate transit service, like the roadway system serving the Plan Area would be phased with development of the Project. The project Applicant would coordinate with SacDOT regarding implementation of the proposed transit system identified as a project condition of approval to ensure timely implementation.

PEDESTRIAN AND BICYCLE FACILITY IMPROVEMENTS

Plate TC-14 and Plate TC-15 illustrate the proposed bikeway network and plan for the Project and Alternative 2, respectively. The roadways within the Plan Area 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 Project also provides several off-street (Class I) multi-purpose trails.

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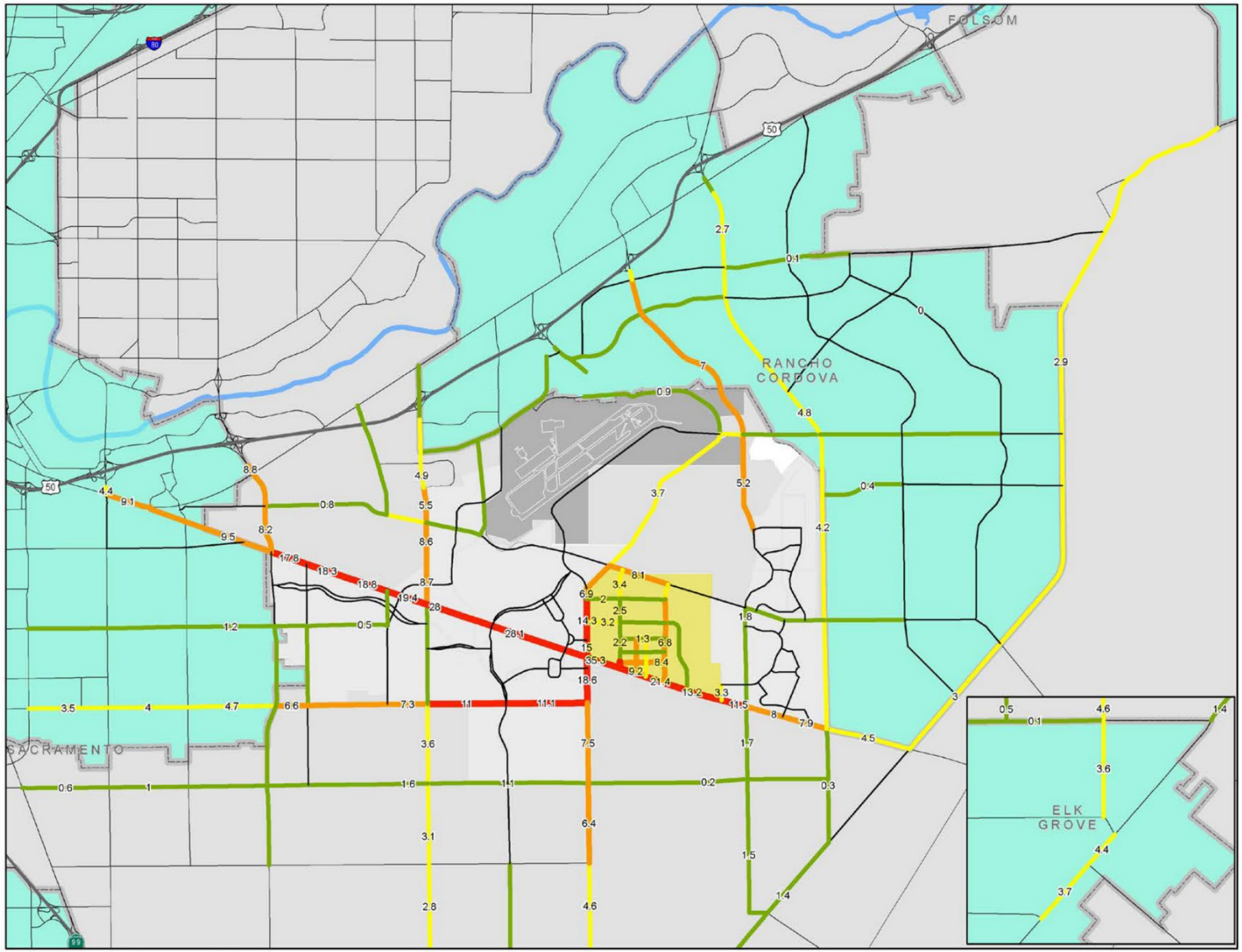

Source: Image prepared and provided by DKS Associates in 2019

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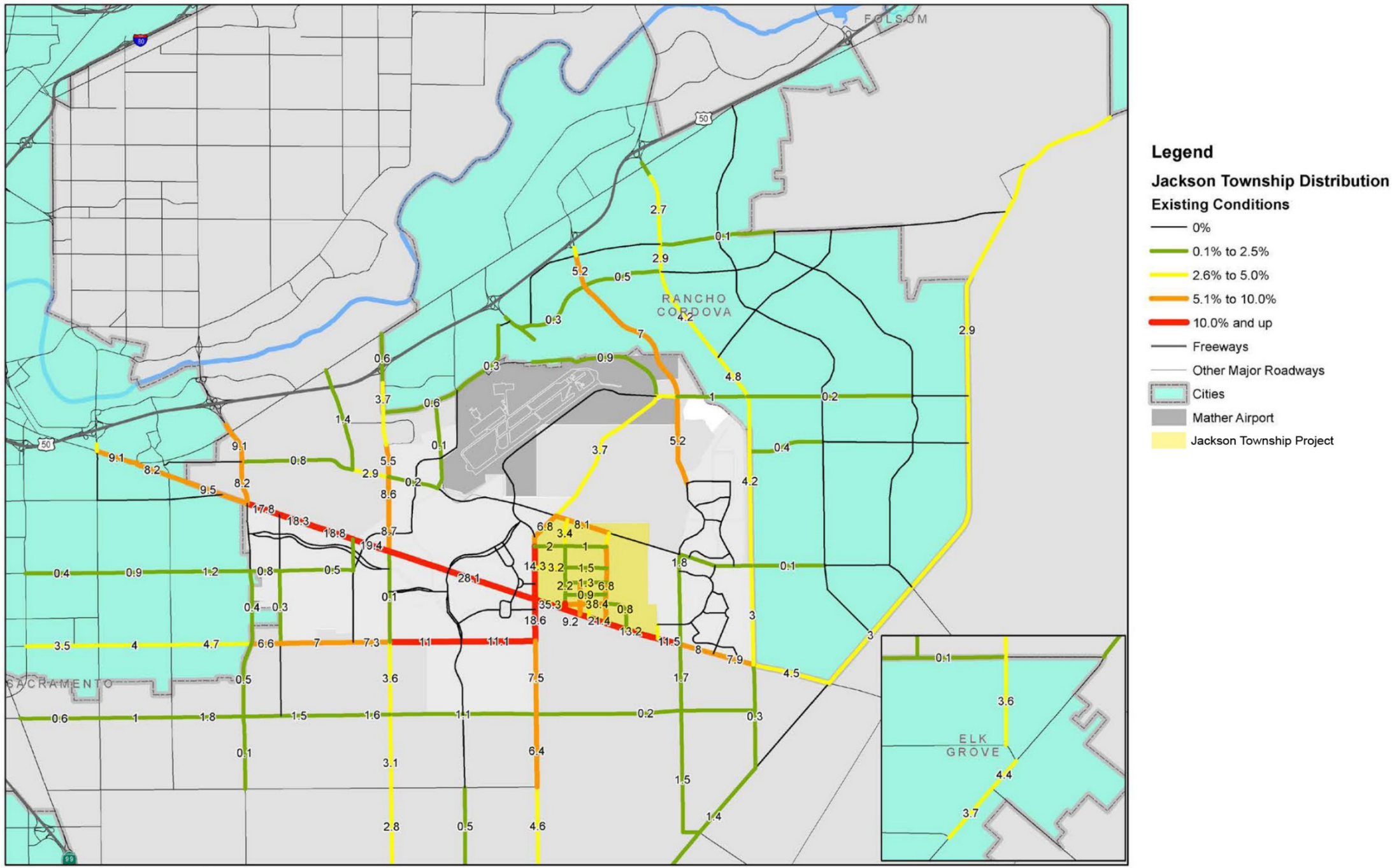
Plate TC-10: Existing Plus Proposed Project Trip Distribution



Source: Image prepared and provided by DKS Associates in 2019

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Plate TC-11: Existing Plus Alternative 2 Trip Distribution

Table TC-19: Existing and Existing Plus Proposed Project Intersection Geometrics

Intersection		Traffic Control		Existing Lane Geometrics				Existing Plus Proposed 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	⌖	⌅	⌖	⌖	⌖	⌅	⌖	⌖
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	⌖	⌅	⌖	⌖	⌖	⌅	⌖	⌖
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	↰↑⌐	⌟↓↓↘	↰↑ ⌐	↰↑ ⌐	↰↑⌐	⌟↓↓↘	↰↑ ⌐	↰↑ ⌐

Intersection		Traffic Control		Existing Lane Geometrics				Existing Plus Proposed Project Lane Geometrics			
		Existing	Existing Plus Project	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach
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	↰ ↱		↑ ↱	↰ ↑	↰ ↱		↑ ↱	↰ ↑
44	Excelsior Road & Kiefer Boulevard		Signal					↑ ↱	↓ ↳		↰ ↱
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	↟	↟	↟	↟	↟	↟	↟	↟
48	Excelsior Road & Gerber Road/Birch Ranch Drive	All-way stop	All-way stop	↟	↟	↟	↟	↟	↟	↟	↟
49	Mather Field Road & US 50 WB Ramps	Signal	Signal	↑ ↑ ↱	↲ ↓ ↓		↰ ↟	↑ ↑ ↱	↲ ↓ ↓		↰ ↟
50	Mather Field Road & US 50 EB 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 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	↰ ↑ ↑ ↱	↰ ↓ ↓ ↳	↰ ↟	↰ ↰ ↱	↰ ↑ ↑ ↱	↰ ↓ ↓ ↳	↰ ↟	↰ ↰ ↱
57	Zinfandel Drive & International Dr	Signal	Signal	↰ ↰ ↑ ↑ ↑ ↱	↰ ↓ ↓ ↳ ↳	↰ ↰ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↑ ↱	↰ ↓ ↓ ↳ ↳	↰ ↰ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↑ ↱
58	Zinfandel Drive & Douglas Road	Signal	Signal	↰ ↱	↲ ↓ ↳ ↳	↰ ↑ ↱	↰ ↑ ↱	↰ ↱	↲ ↓ ↳ ↳	↰ ↑ ↱	↰ ↑ ↱
59	Eagles Nest Road/Zinfandel Drive & Kiefer Boulevard			↱			↰	↱			↰
60	Eagles Nest Road & Jackson Road	Two-way stop	Two-way stop	↟	↟	↰ ↱	↰ ↱	↟	↟	↰ ↱	↰ ↱
61	Eagles Nest Road & Florin Road	Two-way stop	Two-way stop	↟	↟	↟	↟	↟	↟	↟	↟
62	Sunrise Boulevard & US 50 WB Ramps	Signal	Signal	↑ ↑ ↑ ↱	↲ ↓ ↓ ↓		↰ ↰ ↱ ↱	↑ ↑ ↑ ↱	↲ ↓ ↓ ↓		↰ ↰ ↱ ↱
63	Sunrise Boulevard & US 50 EB 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	↰ ↑ ↑ ↱	↰ ↓ ↳ ↳	↟	↰ ↱	↰ ↑ ↑ ↱	↰ ↓ ↳ ↳	↟	↰ ↱
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 WB Off-ramp	Signal	Signal	↰ ↰ ↑ ↑ ↑	↲ ↓ ↓ ↓ ↓	↱	↰ ↱ ↱	↰ ↰ ↑ ↑ ↑	↲ ↓ ↓ ↓ ↓	↱	↰ ↱ ↱
74	Hazel Avenue & US 50 EB Ramps	Signal	Signal		↲ ↓ ↓	↰ ↱ ↱			↲ ↓ ↓	↰ ↱ ↱	
75	Hazel Avenue & Folsom Boulevard	Signal	Signal	↰ ↱	↲ ↲ ↳ ↳	↰ ↰ ↑ ↱	↰ ↑ ↱	↰ ↱	↲ ↲ ↳ ↳	↰ ↰ ↑ ↱	↰ ↑ ↱
76	Prairie City Road & White Rock Road	Signal	Signal		↲ ↳	↰ ↑ ↑	↑ ↑ ↱		↲ ↳	↰ ↑ ↑	↑ ↑ ↱

Intersection		Traffic Control		Existing Lane Geometrics				Existing Plus Proposed Project Lane Geometrics			
		Existing	Existing Plus Project	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach
77	Grant Line Road & White Rock Road	Signal	Signal	↰ ↑ ↑	↲ ↓ ↓	↰ ↱		↰ ↑ ↑	↲ ↓ ↓	↰ ↱	
78	Grant Line Road & Douglas Road	All-way stop	Signal[1]	↰	↲	↱		↰ ↑	↲ ↓	↰ ↱	
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	↟	↲↳ ↳	↰ ↑ ↱	↰ ↑ ↱	↟	↲↳ ↳	↰ ↑ ↱	↰ ↑ ↱
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	↰ ↱	↲ ↓ ↳	↰ ↱	↟	↰ ↱	↲ ↓ ↳	↰ ↱	↟
##	Excelsior Road & Collector WJ-1/Collector JT-1		Signal					↑ ↱	↓ ↳		↰ ↱
##	Excelsior Road & Collector WJ-2/Collector JT-2		Signal					↑ ↱	↓ ↳		↰ ↱
##	Collector JT-3 & Jackson Road		Signal						↲↳	↰ ↰ ↑ ↑	↑ ↑ ↱
##	Tree View Lane & Jackson Road		Signal						↲↳ ↳	↰ ↰ ↑ ↑	↑ ↑ ↱
##	Collector JT-4 & Jackson Road		Signal						↲↳	↰ ↑ ↑	↑ ↱
##	Tree View Lane & Collector JT-5		Signal					↰ ↑ ↱	↲ ↓ ↳	↰ ↑ ↱	↰ ↑ ↱
##	Tree View Lane & Collector JT-6		Signal					↰ ↑ ↑	↲ ↓	↰ ↱	
##	Tree View Lane & Collector JT-1		Signal					↰ ↑ ↱	↲ ↓ ↳	↰ ↑ ↱	↰ ↑ ↱
##	Tree View Lane & Kiefer Boulevard		Signal					↰ ↰ ↱		↑ ↑ ↱	↰ ↰ ↑ ↑
##	HS/MS Dwy & Kiefer Boulevard		Signal					↰ ↱		↑ ↱	↰ ↑

Note: Gray shading represents changes in traffic control or approach lanes that the project is responsible to provide.

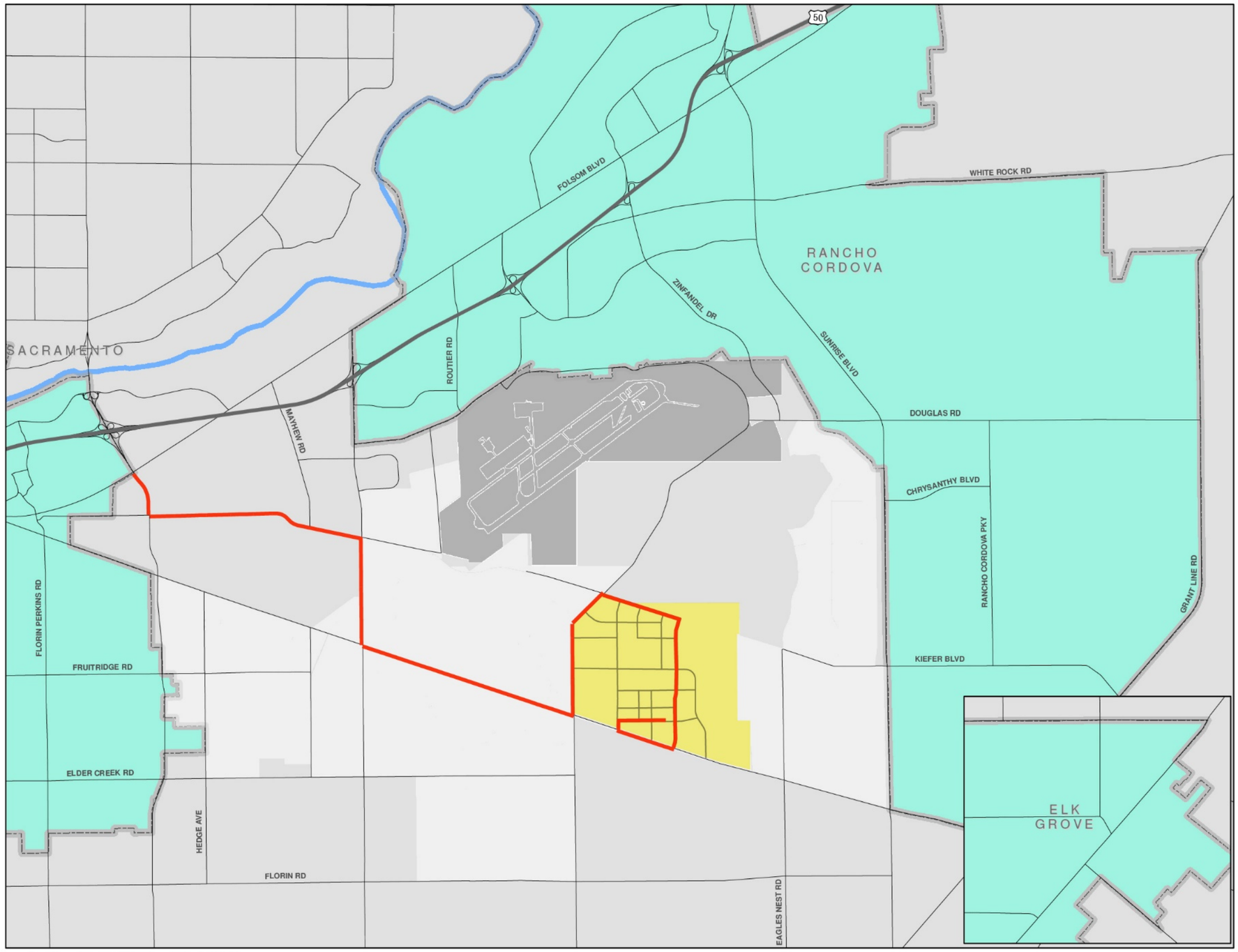
Table TC-20: Existing and Existing Plus Alternative 2 Intersection Geometrics

Intersection		Traffic Control		Existing Lane Geometrics				Existing Plus Alternative 2t 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	⅄	⅄	⅄	⅄	⅄	⅄	⅄	⅄
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	⅄	⅄	⅄	⅄	⅄	⅄	⅄	⅄
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	⅂↑⅋	⌟↓↓↘	⅂↑ ⌐	⅂↑ ⌐	⅂↑⅋	⌟↓↓↘	⅂↑ ⌐	⅂↑ ⌐

Intersection		Traffic Control		Existing Lane Geometrics				Existing Plus Alternative 2t Lane Geometrics			
		Existing	Existing Plus Project	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach
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	↰ ↱		↑ ↱	↰ ↑	↰ ↱		↑ ↱	↰ ↑
43	Happy Lane & Kiefer Boulevard				↲	↰			↲	↰	
44	Excelsior Road & Kiefer Boulevard		Signal					↑ ↱	↓ ↳		↰ ↱
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	↟	↟	↟	↟	↟	↟	↟	↟
48	Excelsior Road & Gerber Road/Birch Ranch Drive	All-way stop	All-way stop	↟	↟	↟	↟	↟	↟	↟	↟
49	Mather Field Road & US 50 WB Ramps	Signal	Signal	↑ ↑ ↱	↲ ↓ ↓		↰ ↾	↑ ↑ ↱	↲ ↓ ↓		↰ ↾
50	Mather Field Road & US 50 EB 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 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	↰ ↑ ↱	↰ ↓ ↓ ↳	↰ ↾	↰ ↰ ↱	↰ ↑ ↱	↰ ↓ ↓ ↳	↰ ↾	↰ ↰ ↱
57	Zinfandel Drive & International Dr	Signal	Signal	↰ ↰ ↑ ↑ ↱	↰ ↓ ↓ ↳ ↳	↰ ↰ ↑ ↱	↰ ↰ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↱	↰ ↓ ↓ ↳ ↳	↰ ↰ ↑ ↱	↰ ↰ ↑ ↑ ↱
58	Zinfandel Drive & Douglas Road	Signal	Signal	↰ ↱	↲ ↓ ↳ ↳	↰ ↑ ↱	↰ ↑ ↱	↰ ↱	↲ ↓ ↳ ↳	↰ ↑ ↱	↰ ↑ ↱
59	Eagles Nest Road/Zinfandel Drive & Kiefer Boulevard			↱			↰	↱			↰
60	Eagles Nest Road & Jackson Road	Two-way stop	Two-way stop	↟	↟	↰ ↱	↰ ↱	↟	↟	↰ ↱	↰ ↱
61	Eagles Nest Road & Florin Road	Two-way stop	Two-way stop	↟	↟	↟	↟	↟	↟	↟	↟
62	Sunrise Boulevard & US 50 WB Ramps	Signal	Signal	↑ ↑ ↑ ↱	↲ ↓ ↓ ↓		↰ ↰ ↱ ↱	↑ ↑ ↑ ↱	↲ ↓ ↓ ↓		↰ ↰ ↱ ↱
63	Sunrise Boulevard & US 50 EB 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	↰ ↑ ↑ ↱	↰ ↓ ↳ ↳	↟	↰ ↱	↰ ↑ ↑ ↱	↰ ↓ ↳ ↳	↟	↰ ↱
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 WB Off-ramp	Signal	Signal	↰ ↰ ↑ ↑ ↑	↲ ↓ ↓ ↓ ↓	↱	↰ ↱ ↱	↰ ↰ ↑ ↑ ↑	↲ ↓ ↓ ↓ ↓	↱	↰ ↱ ↱
74	Hazel Avenue & US 50 EB Ramps	Signal	Signal		↲ ↓ ↓	↰ ↾ ↱			↲ ↓ ↓	↰ ↾ ↱	
75	Hazel Avenue & Folsom Boulevard	Signal	Signal	↰ ↱	↲ ↲ ↰ ↳	↰ ↰ ↑ ↱	↰ ↑ ↱	↰ ↱	↲ ↲ ↰ ↳	↰ ↰ ↑ ↱	↰ ↑ ↱

Intersection		Traffic Control		Existing Lane Geometrics				Existing Plus Alternative 2t Lane Geometrics			
		Existing	Existing Plus Project	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach
76	Prairie City Road & White Rock Road	Signal	Signal								
77	Grant Line Road & White Rock Road	Signal	Signal								
78	Grant Line Road & Douglas Road	All-way stop	Signal[1]								
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								
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								
200	Excelsior Road & Collector WJ-1/Collector JT-1		Signal								
201	Excelsior Road & Collector WJ-2/Collector JT-2		Signal								
400	Collector JT-3 & Jackson Road		Signal								
401	Tree View Lane & Jackson Road		Signal								
402	Collector JT-4 & Jackson Road		Signal								
403	Tree View Lane & Collector JT-5		Signal								
404	Tree View Lane & Collector JT-6		Signal								
405	Tree View Lane & Collector JT-1		Signal								
406	Tree View Lane & Kiefer Boulevard		Signal								
407	HS/MS Dwy & Kiefer Boulevard		Signal								

Note: Gray shading represents changes in traffic control or approach lanes that the project is responsible to provide.



Source: Image prepared and provided by DKS Associates in 2019

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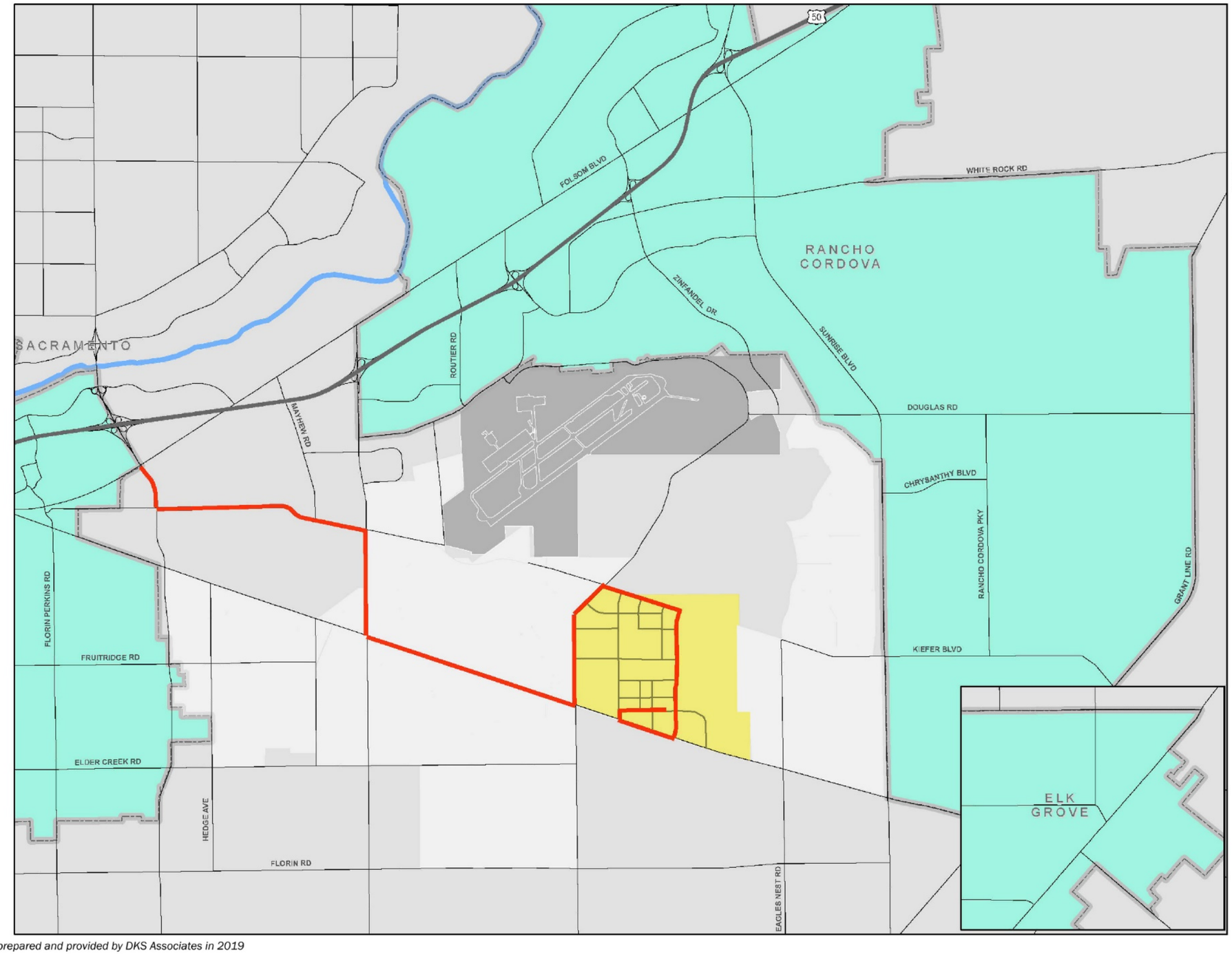
Plate TC-12: Project Transit Network Existing Plus Proposed Project



Legend

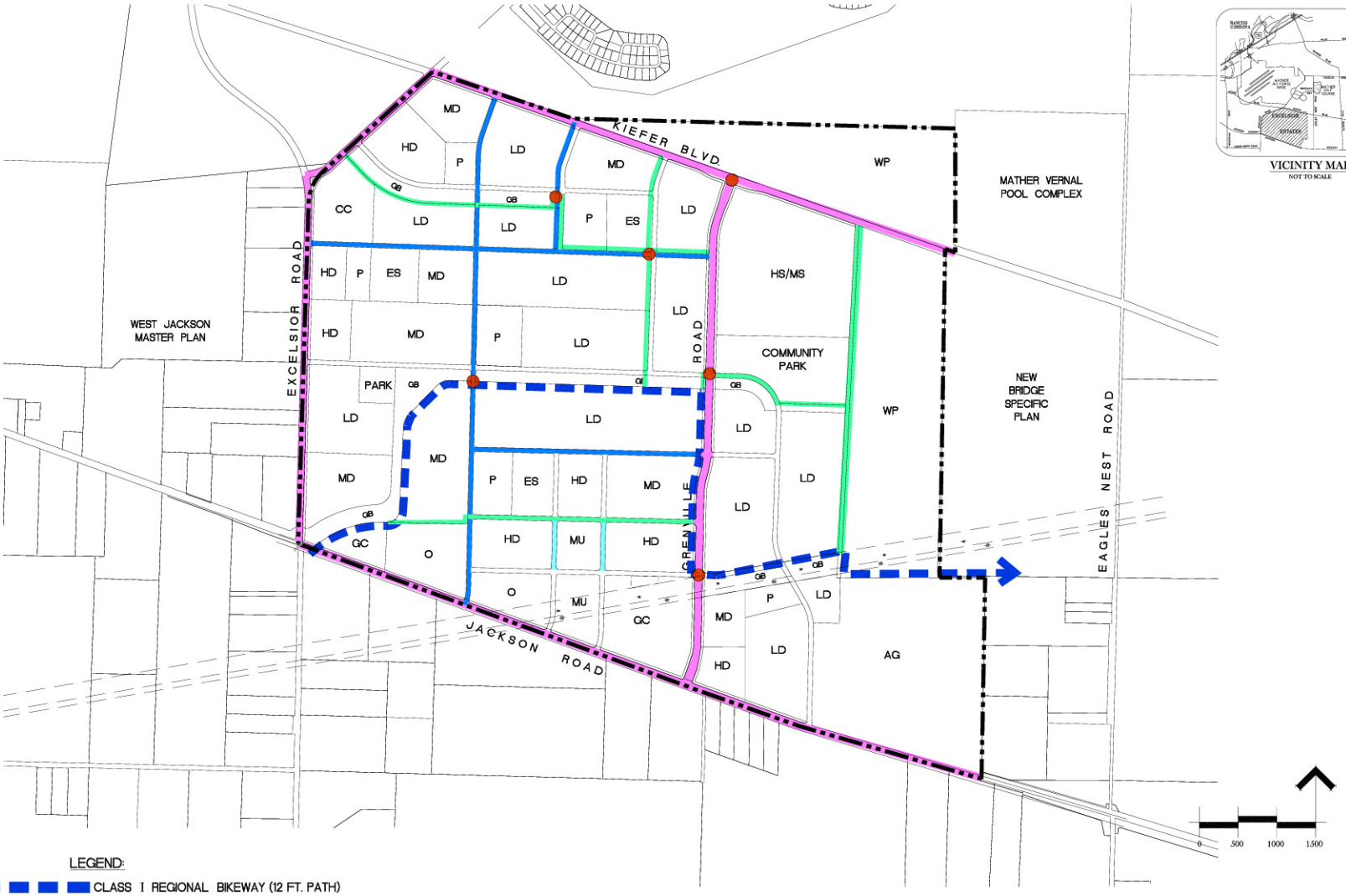
- Kiefer Jackson Local Route
- Cities
- Mather Airport
- Jackson Township Project

Source: Image prepared and provided by DKS Associates in 2019

X15010101.09 060

Plate TC-13: Project Transit Network Existing Plus Alternative 2

ASCENT ENVIRONMENTAL



LEGEND:

- CLASS I REGIONAL BIKEWAY (12 FT. PATH)
- CLASS I BIKEWAY (10 FT. OFF-STREET BIKE PATH)
- CLASS II BIKEWAY (ON-STREET BIKE PATH)
- CLASS I AND II BIKEWAY (ON-STREET OFF-STREET BIKE PATH)
- CLASS II ONE SIDE ONLY
- CONTROLLED CLASS 1 PATH CROSSING (AT SIGNAL, 4-WAY STOP OR PED-ACTIVATED SIGNAL)

Source: Figure provided by Tsakopoulos Investments in 2019.

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Plate TC-14: Proposed Bikeway Master Plan Proposed Project

ASCENT ENVIRONMENTAL

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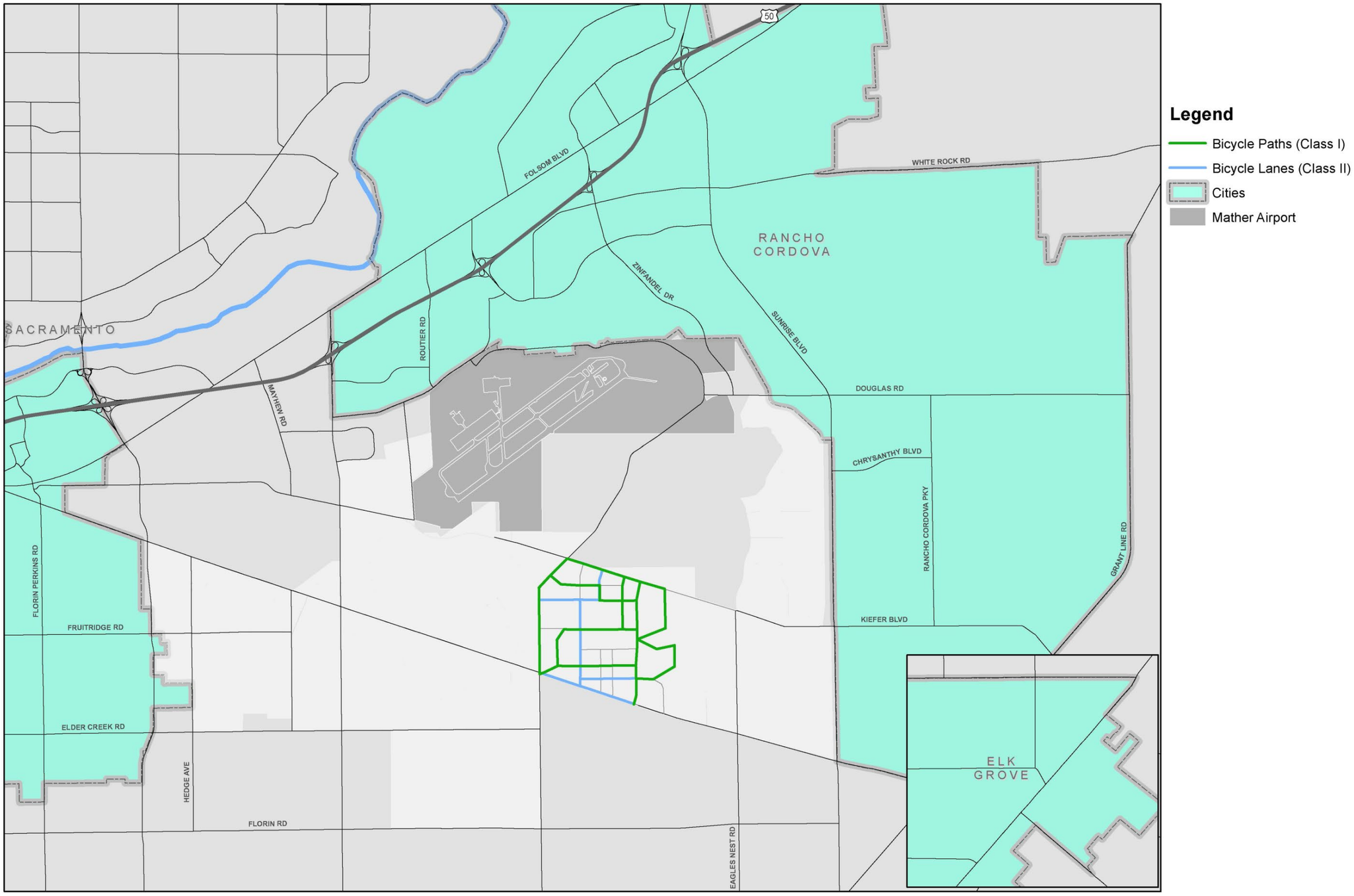

Plate TC-15: Proposed Bikeway Master Plan Alternative 2

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). 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 2030 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.

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 are noted as so in the applicable tables in the impact analysis.

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 2030 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 the2030 General Plan or deviate from the typical intersection geometry. In other cases where the roadway is already constructed to the full 2030 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.

Roadway Functionality Analysis

Based on 2030 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 Jackson Township 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.

VMT Analysis

OPR and the State Natural Resources Agency submitted updated CEQA Guidelines to the Office of Administrative Law for final approval to implement SB 743. The guidelines indicated that VMT would be the primary metric used to identify transportation impacts. The guidelines have been formally adopted; however, 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 Alternative 2 - SSHCP-Consistent Wetland Preserve

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 can 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 Plan Area, results in overall VMT (and VMT per capita) generated by the Plan Area, respectively.

Table TC-21 shows the estimated VMT per capita under Existing Plus Project (Alternative 2) conditions.

Table TC-21: Estimated VMT per Capita

Scenario	Population	VMT	VMT/Capita
Existing plus Alternative 2			
Alternative 2	14,597	297,769	20.4
Remainder of Region	2,214,577	Varies	18.5
Total Region	Varies	Varies	18.6

As shown in Table TC-21, approximately 14,600 people are anticipated to generate over 297,769 VMT per day. That equates to an average of 20.4 VMT per capita per day, higher than the predicted 18.6 VMT per capita average for the region as a whole.

JACKSON CORRIDOR DEVELOPMENT PROJECTS TRANSPORTATION MITIGATION STRATEGY

Sacramento County General Plan Policy CI-9 establishes LOS E as the acceptable threshold for capacity and operational impacts for urban roadways and intersections. 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 projects potentially economically infeasible.

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 Transportation Report 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 needed to support all proposed Jackson Corridor Projects. This alternative approach provides a mechanism to equally assign mitigation responsibility to all 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 Highway corridor, the Tool can estimate the vehicle trips that would be generated, where those new vehicle trips would be distributed, and 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, 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 occurs in the Jackson Highway 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 Transportation Report. While the traffic study determined the transportation impacts of full build out of the Jackson Township 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 Transportation Report 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 Transportation Report' cumulative impact analysis (see Appendix TR-1). 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 Highway corridor 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 Highway corridor 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. 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 was adopted by the Board of Supervisors on April 9, 2019.

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.

The Jackson Corridor Development Projects Transportation Mitigation Strategy has been conceptually adopted by the Board of Supervisors and is included as Appendix TR-2. The Transportation Mitigation Strategy is described generally below:

> This Transportation Mitigation Strategy ("Strategy") shall apply to all development projects within the following Jackson Highway Corridor Specific Plan areas:
>
> a. West Jackson Highway Master Plan
> b. Jackson Township Specific Plan
> c. Newbridge Specific Plan
> d. Mather South Community Master Plan
>
> Development projects within the plan areas are responsible for implementing roadway segment and intersection improvements that are required to mitigate impacts to the transportation network, as set forth in each project's approved environmental documents and conditions of approval. It is the intent of Sacramento County that impacts to the transportation network be mitigated concurrent with the implementation of the impacting development project. This Strategy will guide the identification, delivery and construction of the regional "Existing plus Project" and "Existing plus Multiple Projects" roadway segment and intersection improvements that will be required to be built with each incremental development project within the above plan areas.
>
> **FINANCING OF IMPROVEMENTS TO MITIGATE TRANSPORTATION NETWORK IMPACTS**
>
> 1. Build Improvements will be funded through revenue generated from roadway impact fee programs that have been established by or pursuant to plan area financing plans. Funding for Build Improvements may also

include other transportation infrastructure funding sources, such as Measure A Sales Tax revenues and State and Federal funding programs.

2. The plan area fee programs have recognized Measure A Sales Tax revenues, State and Federal funding programs, and other funding sources that are currently programmed and the adopted roadway impact fees are based on the availability of these funds. It is anticipated that improvement projects utilizing such funding sources will be delivered and constructed by the County. The availability and expenditure of these funds for Build Improvements shall be subject to the requirements applicable to the specific funding source from which they are received.
3. Cost estimates for Build Improvements shall be as set forth in the applicable plan area financing plans and/or the area wide finance document.
4. Any credits or reimbursements due from the construction of Build Improvements shall be in accordance with the applicable fee program or finance plan.

DETERMINING A DEVELOPMENT INCREMENT'S BUILD IMPROVEMENTS

5. It is the intent of Sacramento County that impacts to the transportation network be mitigated concurrent with the implementation of the impacting development and that the size of the improvements are commensurate with the size and impact of development and the available funding. The County will determine Build Improvements considering the various improvements identified by the Dynamic Implementation Tool (Tool), the estimated cost of the identified improvements, the Fee Increment, and the availability of other funds. (See Appendix B for a hypothetical example.)
6. Each Development Increment will have a Fee Increment based on the size of the Development Increment. The Fee Increment is calculated by multiplying the fee rates per DUE for the regional roadway component set forth in the applicable plan area roadway impact fee program by the number of DUEs, as follows:
    a. For Development Increments with 300 or more DUEs, calculation of the Fee Increment shall be based on the actual number of DUEs.
    b. For Development Increments with fewer than 300 DUEs, calculation of the Fee Increment shall be based on 300 DUEs. The Director may grant an exemption to the requirements of subsection (b) to Development Increments that are independent development projects and not a phase or subset of a larger project or Development Increment. In such a scenario, the Director shall determine how the Development Increment will satisfy its obligation to mitigate transportation impacts generated by that Development Increment, including, but not limited to, the following:
        i. Constructing Build Improvements identified by the Tool and based on a Fee Increment that utilizes the Development Increment's actual number of DUEs;

   ii. ii. A payment of the Development Increment's full Fee Increment, in lieu of constructing Build Improvements, prior to issuance of the first building permit; or
   iii. Payment of the plan area roadway impact fees at time of building permit issuance.
7. The Tool may also be utilized to develop a conceptual set of Build Improvements for the plan area or a Development Increment during the entitlement process to inform the project proponents and the Board of Supervisors. However, the actual Build Improvements required to be constructed by a Development Increment shall be determined by the process described in sections 8 and 9 and may deviate from the conceptual set of Build Improvements previously developed due to a Development Increment's changed circumstances or progress, or changes to the transportation network and/or the Department of Transportation's priority needs.
8. The Build Improvements that the Development Increment will be required to construct shall be determined using the Tool. The Tool will utilize the actual number of DUEs in the Build Increment. The development proponent is responsible for requesting the Tool analysis sufficiently in advance of their Development Increment to allow for timely execution of the agreement described in section 9 and delivery of their Build Improvements as described in section 15.
9. A written agreement between the County and project proponent shall be required to identify the specific Build Improvements assigned to the project and set a date by which construction of the Build Improvements by the project proponent shall commence, or a date for in-lieu payment by the project proponent per section 13 shall occur. The Build Improvements identified by the Tool and the proposed timing of construction may change any time prior to execution of the agreement. The agreement shall be executed prior to recordation of a final small lot subdivision map for a residential Development Increment or initiation of a building permit application for a non-residential Development Increment. If construction is not initiated by the project proponent or the in-lieu payment is not made by the date specified in the agreement, the County, at its discretion, may require different Build Improvements based on changed circumstances or progress, or changes to the transportation network and/or the Department of Transportation's priority needs.

CREDITS, REIMBURSEMENTS, AND THE COST OF BUILD IMPROVEMENTS

10. A credit and/or reimbursement agreement will likely be needed for each Development Increment that must construct Build Improvements due to the timing of the construction and its acceptance by the County relative to when building permit fees must be paid. Any credit or reimbursement shall be provided in accordance with the associated fee program or finance plan requirements from which the credit or reimbursement is due.
11. When the Development Increment is fewer than 300 DUEs, the Development Increment may be assigned Build Improvements whose cost

estimates exceed the fee revenues generated by the actual number of DUEs, as described in section 6. The Development Increment shall be responsible for funding and constructing the Build Improvements assigned by the County, including those improvements which costs exceed the amount of fee revenues generated by the Development Increment's actual number of DUEs. Credit or reimbursement shall be due for the additional eligible costs per the applicable plan area fee program.

12. Constructed Build Improvement costs are unlikely to exactly match the Fee Increment. Lower costs will result in the creation of reserve funding; higher cost Build Improvements will require funds from the reserve, increased funding from the Development Increment, and/or other County funding. It is the County's intent to establish reserve funding to help manage these differences by allocating the Fee Increment as follows: Build Improvements would be assigned based on a target of eighty percent (80%) of the Fee Increment in addition to any other funds the County makes available for that Build Improvement; the remaining (20%) would be placed in reserve to be applied to other transportation mitigation measures (including other assigned Build Improvements) associated with implementation of other development projects in the plan area and other Jackson Highway Corridor plan areas, as determined by the Director. It is anticipated that while the Development Increment's Fee Increment generally will be allocated as noted above, the listed percentages will be adjusted as necessary to conform to Build Improvement costs and address the Department of Transportation's priority needs. The County shall not assign Build Improvements with estimated costs exceeding one hundred percent (100%) of the Fee Increment in addition to any other funds (including available reserve funds noted above). Appendix B includes a hypothetical example of possible Build Improvement scenarios.

IMPLEMENTING A DEVELOPMENT INCREMENT'S BUILD IMPROVEMENTS

13. In lieu of constructing the Build Improvements, the Director may accept an upfront payment up to 100 percent of the full amount of the Fee Increment if the Build Improvements will be constructed by the County or another party. Payment shall be made to the County prior to the recordation of any final map for residential development or issuance of any building permit for non-residential development Increment. This payment shall be considered as satisfying the requirements of section 15.
14. If the project proponent chooses to fund the Build Improvements through a Community Facilities District (CFD) or similar public finance mechanism, the CFD or similar public finance mechanism must be formed prior to the recordation of a small lot final map for a residential Development Increment or issuance of any building permit for a nonresidential Development Increment. The formation shall occur regardless of whether the Build Improvements will be constructed concurrent with the Development Increment or an in-lieu amount will be paid up front. An

advanced funding agreement with the County for CFD establishment costs must be executed prior to initiation of CFD formation.

15. The delivery and construction of the Build Improvements shall proceed as follows to ensure completion in a timely manner:
    a. The improvement plans for the Build Improvements shall be approved, and construction bonds shall be posted, prior to the recordation of any final map for a residential Development Increment or issuance of any building permit for nonresidential Development Increment.
    b. For residential Development Increments, construction of the Build Improvements shall commence by the date identified in the agreement described in section 9 and prior to twenty-five percent (25%) build-out of the Development Increment (as measured by the number of building permit issuances). Build-out of the Development Increment may proceed beyond this percentage if the project proponent demonstrates, to the satisfaction of the Director, that construction has been delayed due to circumstances beyond the project proponent's control and will commence within a time frame acceptable to the Director.
    c. If a residential Development Increment is a phase or a subset of a larger development project, a future phase shall not proceed beyond twenty-five percent (25%) build-out of the Development Increment (as measured by the number of building permit issuances) until construction of the Build Improvements assigned to an earlier Development Increment has been substantially completed, as defined in the most recent version of the Sacramento County Standard Construction Specifications, or the project proponent demonstrates, to the satisfaction of the Director, that construction of the Build Improvements for the earlier Development Increment is progressing at an acceptable rate. For large development projects consisting of multiple Development Increments and Build Improvements, the County and project proponent may enter into an implementation agreement specifying the terms and conditions for the delivery and construction of said Build Improvements.
    d. For non-residential Development Increments, construction shall commence by the date identified in the agreement described in section 9 and be completed prior to County's issuance of a certificate of occupancy, unless otherwise approved by the Director.

ADMINISTRATION AND UPDATE OF THE STRATEGY

16. The Department of Transportation will manage this Strategy and the Tool. The costs to manage, maintain, update, and conduct Tool analysis, and all other related administrative work tasks, shall be funded by all development projects within the Jackson Highway Corridor plan areas. Funding to support the above efforts will be either in the form of application fees or a development agreement between the County and each project proponent.

17. This Strategy and its components, including the Tool, shall be reviewed and updated as needed, but no less frequently than every five years or at key planning events undertaken by the County including, but not limited to, General Plan updates, and updates to the Jackson Highway Corridor plan area master plans or specific plans. The review and update of this Strategy and the Tool shall include, but not be limited to, land use changes, revisions to the proposed and completed transportation network, changes in the costs of the Build Improvements, changes in associated escalation values due to inflation, and the securing of new funding sources to supplement the costs of improvements. A project proponent may appeal a determination by Department of Transportation staff concerning the application of this Strategy to its project by submitting a written request for the Director's review. If the project proponent is dissatisfied with the Director's decision following such review, the project proponent may appeal the decision to the County Board of Supervisors by filing a notice of appeal with the Clerk of the Board within fifteen (15) days of the date of the Director's decision. The notice of appeal shall include payment of the applicable appeal fee and the following information: (a) a complete description of the factual basis for the appeal; (b) the legal basis for the appeal; and (c) the remedy sought by the project proponent. The Clerk of the Board shall calendar a hearing on the appeal and notify the person filing the appeal of the date, time and place of such hearing. During the hearing, the project proponent shall be afforded the opportunity to present oral and documentary evidence and offer testimony from any concerned parties as may be necessary for the Board to take action. The Board may affirm, reverse, or modify the decision of the Director. The action of the Board on any such appeal shall be final and conclusive (Sacramento County 2019).

IMPACT: IMPACTS TO ROADWAY SEGMENT OPERATIONS

New roadways would be constructed and existing roadways would be widened as part of the Project. The Project includes a proposed amendment to the General Plan Transportation Diagram that would accelerate upgrade of Excelsior Road and Kiefer Boulevard as four-lane arterials and Jackson Highway as a thoroughfare to pre-2030, rather than post-2030 adjacent to the Plan Area. In addition, Grenville Drive (formerly Treeview Lane) would traverse the Plan Area north to south and would be constructed with both four- lane and two-lane segments. These roadway improvements would benefit traffic conditions within the entire study area.

The analysis provided in the Transportation Report provides a static picture of project-related impacts based on the baseline plus Project, baseline plus Alternative 2, cumulative plus Project, and cumulative plus Alternative 2 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.

Proposed Project

Table TC-22 summarizes the results of the operations analysis for the traffic study area roadway segments that would exceed the applicable LOS and V/C thresholds under Existing Plus Project conditions. The table includes the number of lanes assumed with the implementation of the 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.

Considering the consistent development assumptions detailed above requiring all Jackson Corridor Projects to construct roadway improvements, and as shown in Table TC-22, the addition of vehicle trips generated by Project buildout would result in the exceedance of applicable LOS and V/C thresholds along 13 roadway segments. This impact would be **significant**.

As shown in Table TC-23, implementation of Mitigation Measures TR-1, TR-2, and TR-3 would result in fair share payments toward improvements that would reduce the roadway segment impacts of the Project. 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 Project to implement. The shaded table cells under the “Level of Service” heading indicate those locations that would continue to exceed applicable LOS standards after mitigation. The “LOS Impact with Mitigation” column shows whether a mitigation measure successfully mitigates the impact or not. Detailed operations calculations and the full list of study area facility operating conditions are included in Appendix TR-1.

As shown in Table TC-23, 10 of the 13 roadway segments would operate acceptably with implementation of mitigation. Mitigation would generally involve improvements within the alignment or widening of the roadway. Because three of the study area roadway segments have reached the maximum number of lanes allowed under the General Plan, there is no additional feasible mitigation to improve the LOS along these roadway segment to an acceptable level. The construction-related impacts of these improvements have been programmatically evaluated within the scope of the technical sections of this Draft EIR and construction would generally result in a similar program of mitigation required for the Project. However, it is acknowledged that some site-specific impacts may occur, the details of which are unknown at this time.

Further, while implementation of Mitigation Measures TR-1, TR-2, and TR-3 would result in fair share payment toward improvements that would reduce impacts to 10 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 three roadway segment 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 the Project Applicant and the County, it cannot be guaranteed that significant impacts to roadway segments would be reduced to a less-than-significant level at the time of phased development. Therefore, this impact is concluded to be **significant and unavoidable**.

Table TC-22: Existing Plus Proposed Project Deficient Roadway Segment Operations

ID	Roadway	Segment		Existing					Existing Plus Proposed Project				
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	V/C Ratio	LOS	Travel Lanes	Facility Type[1]	Forecasted Volume	V/C Ratio	LOS
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	15,734	0.87	D	2	Arterial M	17,400	0.97	E
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	37,516	1.04	F	4	Arterial M	40,090	1.11	F
56	Grant Line Rd	Sheldon Rd	Wilton Rd	2	Rural S	17,459	0.87	E	2	Rural S	19,560	0.98	E
57	Grant Line Rd	Wilton Rd	Bond Rd	2	Rural S	16,064	0.80	E	2	Rural S	18,070	0.90	E
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	53,849	1.00	E	6	Arterial M	55,120	1.02	F
67	Jackson Rd	South Watt Ave	Hedge Ave	2	Arterial M	17,060	0.95	E	2	Arterial M	23,280	1.29	F
68	Jackson Rd	Hedge Ave	Mayhew Rd	2	Arterial M	12,616	0.70	C	2	Arterial M	19,660	1.09	F
69	Jackson Rd	Mayhew Rd	Bradshaw Rd	2	Arterial M	14,996	0.83	D	2	Arterial M	21,730	1.21	F
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	2	Arterial M	13,030	0.72	C	2	Arterial M	26,090	1.45	F
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	2	Rural Hwy	13,306	0.58	D	2	Rural Hwy	14,680	0.64	E
83	Mather Blvd-Excelsior Rd	Douglas Rd	Kiefer Blvd	2	Res Collector F	6,751	0.84	E	2	Res Collector F	8,760	1.10	F
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	2	Arterial M	16,894	0.94	E	2	Arterial M	19,180	1.07	F
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	65,242	1.09	F	6	Arterial H	67,710	1.13	F

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide.

V/C – Volume to Capacity Ratio, LOS = Level of Service

[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

Bold values do not meet LOS policy. Red values with light gray shading indicate project impacts.

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Table TC-23: Existing Plus Proposed Project Roadway Segment Operations with Mitigation

ID	Roadway	Segment		Existing Plus Proposed Project					Mitigated Existing Plus Proposed Project						
		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
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	17,400	0.97	E	4	Arterial M	0.48	A	No		
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	40,090	1.11	F	4	Arterial M	1.11	F	Yes		Maximum General Plan lanes
56	Grant Line Rd	Sheldon Rd	Wilton Rd	2	Rural S	19,560	0.98	E	4	Arterial M	0.54	A	No		
57	Grant Line Rd	Wilton Rd	Bond Rd	2	Rural S	18,070	0.90	E	4	Arterial M	0.50	A	No		
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	55,120	1.02	F	6	Arterial M	1.02	F	Yes		Maximum General Plan lanes
67	Jackson Rd	South Watt Ave	Hedge Ave	2	Arterial M	23,280	1.29	F	4	Arterial M	0.65	B	No		
68	Jackson Rd	Hedge Ave	Mayhew Rd	2	Arterial M	19,660	1.09	F	4	Arterial M	0.55	A	No		
69	Jackson Rd	Mayhew Rd	Bradshaw Rd	2	Arterial M	21,730	1.21	F	4	Arterial M	0.60	B	No		
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	2	Arterial M	26,090	1.45	F	4	Arterial M	0.72	C	No		
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	2	Rural Hwy	14,680	0.64	E	4	Arterial M	0.41	A	No		
83	Mather Blvd-Excelsior Rd	Douglas Rd	Kiefer Blvd	2	Res Collector F	8,760	1.10	F	2	Res Collector F	0.85	E	No	Construct Douglas Road extension[3]	
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	2	Arterial M	19,180	1.07	F	4	Arterial M	0.53	A	No		
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	67,710	1.13	F	6	Arterial H	1.13	F	Yes		Maximum General Plan lanes

Note: Gray shading represents changes in travel lanes or facility type that the project is responsible to provide.
V/C – Volume to Capacity Ratio, LOS = Level of Service
[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.
[3]. Offsite regional roadways identified as mitigation in the Transportation Report are included in the Transportation Mitigation Strategy. Construction responsibility is not specifically assigned to individual specific plans at this time.
Bold values do not meet LOS policy. Red values with light gray shading indicate project impacts.

ALTERNATIVE 2

Table TC-24 summarizes the results of the operations analysis for the traffic study area roadway segments that would be deficient under Existing Plus Alternative 2 conditions. The table includes the number of lanes assumed with the implementation of Alternative 2, 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.

Considering the consistent development assumption detailed above, and as shown in Table TC-24, the addition of vehicle trips generated by project buildout would result in the exceedance of applicable LOS and V/C thresholds along thirteen roadway segments. This impact would be **significant**.

Similar to the Project, implementation of Mitigation Measures TR-1, TR-2, and TR-3 would result in construction of and/or fair share payments toward improvements that would reduce the roadway segment impacts of Alternative 2. Detailed operations calculations and the full list of study area facility operating conditions are included in Appendix TR-1.

As shown in Table TC-25, 10 of the 13 roadway segments would operate acceptably with implementation of mitigation. Mitigation would generally involve improvements within the alignment or widening of the roadway. However, because three of the study area roadway segments have reached the maximum number of lanes allowed under the General Plan, there is no additional feasible mitigation to improve the LOS along these roadway segment to an acceptable level. The construction-related impacts of these improvements have been programmatically evaluated within the scope of the technical sections of this Draft EIR and construction would generally result in a similar program of mitigation required for the project. However, it is acknowledged that some site-specific impacts may occur, the details of which are unknown at this time.

Further, while implementation of Mitigation Measures TR-1, TR-2, and TR-3 would result in fair share payment toward improvements that would reduce impacts to 10 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 three roadway segment 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 the Project Applicant 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 TC-24: Existing Plus Alternative 2 Deficient Roadway Segment Operations

ID	Roadway	Segment		Existing					Existing Plus Alternative 2)				
		From	To	Travel Lanes	Facility Type[1]	Daily Volume	V/C Ratio	LOS	Travel Lanes	Facility Type[1]	Forecasted Volume	V/C Ratio	LOS
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	15,734	0.87	D	2	Arterial M	17,230	0.96	**E**
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	37,516	1.04	**F**	4	Arterial M	40,230	1.12	**F**
56	Grant Line Rd	Sheldon Rd	Wilton Rd	2	Rural S	17,459	0.87	**E**	2	Rural S	19,430	0.97	**E**
57	Grant Line Rd	Wilton Rd	Bond Rd	2	Rural S	16,064	0.80	**E**	2	Rural S	18,030	0.90	**E**
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	53,849	1.00	E	6	Arterial M	55,140	1.02	**F**
67	Jackson Rd	South Watt Ave	Hedge Ave	2	Arterial M	17,060	0.95	E	2	Arterial M	23,820	1.32	**F**
68	Jackson Rd	Hedge Ave	Mayhew Rd	2	Arterial M	12,616	0.70	C	2	Arterial M	20,130	1.12	**F**
69	Jackson Rd	Mayhew Rd	Bradshaw Rd	2	Arterial M	14,996	0.83	D	2	Arterial M	21,940	1.22	**F**
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	2	Arterial M	13,030	0.72	C	2	Arterial M	26,390	1.47	**F**
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	2	Rural Hwy	13,306	0.58	D	2	Rural Hwy	15,070	0.66	**E**
83	Mather Blvd-Excelsior Rd	Douglas Rd	Kiefer Blvd	2	Res Collector F	6,751	0.84	E	2	Res Collector F	8,680	1.09	**F**
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	2	Arterial M	16,894	0.94	**E**	2	Arterial M	19,040	1.06	**F**
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	65,242	1.09	**F**	6	Arterial H	67,620	1.13	**F**

Note: Gray shading indicates changes in travel lanes or facility type that the project is responsible to provide.

V/C – Volume to Capacity Ratio, LOS = Level of Service

[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

Bold values do not meet LOS policy. **Red** values with light gray shading indicate project impacts.

MITIGATION MEASURES

TR-1: Jackson Corridor Transportation Mitigation Strategy Participation

The Project Applicant 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) and shown in Table TC-23 and Table TC-25 for the Proposed Project and Alternative 2, respectfully. The Project Applicant shall enter into an agreement at the time of Project approval to use the Tool to identify improvements for each phase or development increment of the Project. The project Applicant shall also agree that required improvements will be constructed concurrent with each phase. For subsequent projects or phases with less than 300 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 300 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 Project Applicant shall, at the time of Project approval, enter into an agreement acknowledging 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.

TR-3: Roadway Segment Mitigation

The Project Applicant shall implement the set of improvements assigned to the project by the Tool (Mitigation Measure TR-1). Where feasible, the number of roadway lanes would be 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.

Table TC-25: Existing Plus Alternative 2 Roadway Segment Operations with Mitigation

ID	Roadway	Segment		Existing Plus Proposed Project					Mitigated Existing Plus Alternative 2)						
		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
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	17,230	0.96	E	4	Arterial M	0.48	A	No		
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	40,230	1.12	F	4	Arterial M	1.12	F	Yes		Maximum General Plan lanes
56	Grant Line Rd	Sheldon Rd	Wilton Rd	2	Rural S	19,430	0.97	E	4	Arterial M	0.54	A	No		
57	Grant Line Rd	Wilton Rd	Bond Rd	2	Rural S	18,030	0.90	E	4	Arterial M	0.50	A	No		
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	55,140	1.02	F	6	Arterial M	1.02	F	Yes		Maximum General Plan lanes
67	Jackson Rd	South Watt Ave	Hedge Ave	2	Arterial M	23,820	1.32	F	4	Arterial M	0.66	B	No		
68	Jackson Rd	Hedge Ave	Mayhew Rd	2	Arterial M	20,130	1.12	F	4	Arterial M	0.56	A	No		
69	Jackson Rd	Mayhew Rd	Bradshaw Rd	2	Arterial M	21,940	1.22	F	4	Arterial M	0.61	B	No		
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	2	Arterial M	26,390	1.47	F	4	Arterial M	0.73	C	No		

ID	Roadway	Segment		Existing Plus Proposed Project					Mitigated Existing Plus Alternative 2)						
		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	2	Rural Hwy	15,070	0.66	E	4	Arterial M	0.42	A	No		
83	Mather Blvd-Excelsior Rd	Douglas Rd	Kiefer Blvd	2	Res Collector F	8,680	1.09	F	2	Res Collector F	0.85	E	No	Construct Douglas Road extension	
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	2	Arterial M	19,040	1.06	F	4	Arterial M	0.53	A	No		
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	67,620	1.13	F	6	Arterial H	1.13	F	Yes		Maximum General Plan lanes

Note: Gray shading represents changes in travel lanes or facility type that the project is responsible to provide.

V/C – Volume to Capacity Ratio, LOS = Level of Service

[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.

Bold values do not meet LOS policy. Red values with light gray shading indicate project impacts.

IMPACT: IMPACTS TO INTERSECTION OPERATIONS

PROPOSED PROJECT

Tables TR-26 summarizes the results of the operations analysis for intersections within the traffic study area that are projected to operate at a deficient LOS under Existing Plus Project conditions. Detailed intersection operations calculations and the full list of study area intersection operating conditions are included in Appendix TR-1.

The traffic analysis assumed that the Project would construct several improvements to intersections internal to, or on the boundary of the Plan Area. The timing of such intersection improvements would affect whether or not there could be temporary impacts during phasing and before full buildout of the Project.

Signal warrant analysis was also conducted for all unsignalized intersections along Jackson Road, and other unsignalized intersections near the Plan Area. Detailed signal warrant calculation sheets are included in Appendix TR-1. With implementation of the Project, the following unsignalized intersections would experience traffic volumes resulting in one or more traffic signal warrants being met:

- Mayhew Road and Jackson Road
- Happy Lane and Old Placerville Road
- Excelsior Road and Elder Creek Road
- Excelsior Road and Florin Road
- Mather Boulevard and Douglas Road
- Eagles Nest Road and Jackson Road
- Excelsior Road and Calvine Road

As shown in Table TC-26, 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**.

As identified in Table TC-27, implementation of Mitigation Measures TR-1, TR-2, and TR-4 would result in fair share payments toward improvements that would reduce all roadway intersection impacts of the Project. Detailed intersection operations calculations and the full list of study area intersection operating conditions for the Project are included in Appendix TR-1.

Mitigation would generally involve improvements within the alignment or widening of the roadway. The construction-related impacts of these improvements have been programmatically evaluated within the scope of the technical sections of this Draft EIR and construction would generally result in a similar program of mitigation required for the project. However, it is acknowledged that some site-specific impacts may occur, the details of which are unknown at this time.

Table TC-26: Existing Plus Proposed Project Deficient Intersection Operations

Intersection		AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Proposed Project			LOS Impact	Existing			Existing Plus Proposed Project			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
18	S. Watt Avenue & Elder Creek Road	Signal	E	62.7	Signal	E	80.0	Yes	Signal	E	68.8	Signal	E	79.1	Yes
25	Hedge Avenue & Elder Creek Road	All-way stop	C	15.9	All-way stop	F	62.2	Yes	All-way stop	B	11.6	All-way stop	C	23.1	No
	Northbound Through - Left Turn		*D*	*27.6*		*F*	*50.0*			*D*	*34.0*		*E*	*48.9*	
	Northbound Right Turn		*B*	*11.8*		*C*	*18.0*			*C*	*15.0*		*C*	*15.3*	
	Southbound		*C*	*18.3*		*D*	*30.3*			*C*	*24.9*		*D*	*32.7*	
	Eastbound Left Turn		*A*	*8.9*		*A*	*9.3*			*A*	*8.4*		*A*	*9.3*	
	Westbound Left Turn		*A*	*8.3*		*A*	*9.4*			*A*	*9.3*		*A*	*9.3*	
38	Bradshaw Road & Jackson Road	Signal	E	73.1	Signal	F	158.7	Yes	Signal	E	59.4	Signal	E	77.3	No
42	Happy Lane & Old Placerville Road	Two-way stop	A	7.3	Two-way stop	B	11.8	Yes	Two-way stop	A	4.7	Two-way stop	B	12.8	Yes
	Northbound Left Turn		*F*	*64.8*		*F*	*215.4*			*F*	*95.9*		*F*	*>300*	
	Northbound Right Turn		*D*	*30.6*		*D*	*31.3*			*C*	*15.4*		*C*	*19.9*	
	Westbound Left Turn		*B*	*10.2*		*B*	*10.6*			*B*	*10.1*		*B*	*10.7*	
45	Excelsior Road & Jackson Road	Signal	D	36.7	Signal	F	171.2	Yes	Signal	D	40.3	Signal	F	134.9	Yes
46	Excelsior Road & Elder Creek Road	Two-way stop	A	3.5	Two-way stop	F	62.0	Yes	Two-way stop	A	2.7	Two-way stop	F	101.5	Yes
	Northbound Left Turn		*A*	*7.5*		*A*	*8.1*			*A*	*8.0*		*A*	*8.8*	
	Eastbound		*C*	*18.6*		*F*	*>300*			*B*	*12.3*		*F*	*>300*	
47	Excelsior Road & Florin Road	All-way stop	C	24.9	All-way stop	F	173.9	Yes	All-way stop	B	12.5	All-way stop	F	72.7	Yes

Intersection		AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Proposed Project			LOS Impact	Existing			Existing Plus Proposed Project			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
52	Mather Boulevard & Douglas Road	All-way stop	E	39.3	All-way stop	F	80.1	Yes	All-way stop	C	15.5	All-way stop	C	17.0	No
60	Eagles Nest Road & Jackson Road	Two-way stop	A	2.3	Two-way stop	F	83.6	Yes	Two-way stop	A	3.6	Two-way stop	C	23.3	Yes
	Northbound		*C*	*22.0*		*F*	*>300*			*C*	*23.8*		*F*	*271.8*	
	Southbound		*B*	*13.9*		*C*	*15.7*			*C*	*22.0*		*E*	*41.0*	
	Eastbound Left Turn		*A*	*8.8*		*B*	*10.3*			*A*	*7.9*		*A*	*8.0*	
	Westbound Left Turn		*A*	*7.9*		*A*	*8.1*			*A*	*8.7*		*A*	*8.9*	
80	Grant Line Road & Jackson Road	Signal	E	74.0	Signal	F	80.8	Yes	Signal	E	78.9	Signal	E	68.2	No
90	Excelsior Road & Calvine Rd	All-way stop	C	16.6	All-way stop	E	43.9	Yes	All-way stop	B	13.0	All-way stop	C	20.3	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.

Table TC-27: Existing Plus Proposed Project Intersection Operations with Mitigation

Intersection		AM Peak Hour							PM Peak Hour						
		Existing Plus Proposed Project			LOS Impact	Mitigated Existing Plus Proposed Project			Existing Plus Proposed Project			LOS Impact	Mitigated Existing Plus Proposed Project		
		Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)
18	S. Watt Avenue & Elder Creek Road	Signal	E	80.0	Yes	Signal	D	45.0	Signal	E	79.1	Yes	Signal	D	37.3
25	Hedge Avenue & Elder Creek Road	All-way stop	F	62.2	Yes	Signal	B	18.8	All-way stop	C	23.1	No	Signal	C	24.6
29	Mayhew Road & Jackson Road	Two-way stop	A	1.8	Yes	Signal	B	18.9	Two-way stop	A	0.8	No	Signal	B	14.6
	Northbound Through - Left Turn		*F*	*50.0*						*E*	*48.9*				
	Northbound Right Turn		*C*	*18.0*						*C*	*15.3*				
	Southbound		*D*	*30.3*						*D*	*32.7*				
	Eastbound Left Turn		*A*	*9.3*						*A*	*9.3*				
	Westbound Left Turn		*A*	*9.4*						*A*	*9.3*				
38	Bradshaw Road & Jackson Road	Signal	F	158.7	Yes	Signal	E	79.7	Signal	E	77.3	No	Signal	D	45.5
42	Happy Lane & Old Placerville Road	Two-way stop	B	11.8	Yes	Signal	C	31.7	Two-way stop	B	12.8	Yes	Signal	C	25.6
	Northbound Left Turn		*F*	*215.4*						*F*	*>300*				
	Northbound Right Turn		*D*	*31.3*						*C*	*19.9*				
	Westbound Left Turn		*B*	*10.6*						*B*	*10.7*				
45	Excelsior Road & Jackson Road	Signal	F	171.2	Yes	Signal	E	59.6	Signal	F	134.9	Yes	Signal	D	54.1
46	Excelsior Road & Elder Creek Road	Two-way stop	F	62.0	Yes	Signal	B	10.2	Two-way stop	F	101.5	Yes	Signal	D	42.0
	Northbound Left Turn		*A*	*8.1*						*A*	*8.8*				
	Eastbound		*F*	*>300*						*F*	*>300*				

Intersection		AM Peak Hour							PM Peak Hour						
		Existing Plus Proposed Project			LOS Impact	Mitigated Existing Plus Proposed Project			Existing Plus Proposed Project			LOS Impact	Mitigated Existing Plus Proposed Project		
		Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)
47	Excelsior Road & Florin Road	All-way stop	F	173.9	Yes	Signal	D	50.7	All-way stop	F	72.7	Yes	Signal	D	36.6
52	Mather Boulevard & Douglas Road	All-way stop	F	80.1	Yes	Signal			All-way stop	E	44.0	No	Signal		
60	Eagles Nest Road & Jackson Road	Two-way stop	F	83.6	Yes	Signal	C	26.5	Two-way stop	C	23.3	Yes	Signal	C	26.9
	Northbound		*F*	*>300*						*F*	*271.8*				
	Southbound		*C*	*15.7*						*E*	*41.0*				
	Eastbound Left Turn		*B*	*10.3*						*A*	*8.0*				
	Westbound Left Turn		*A*	*8.1*						*A*	*8.9*				
80	Grant Line Road & Jackson Road	Signal	F	80.8	Yes	Signal	C	27.6	Signal	E	68.2	Yes	Signal	C	30.4
90	Excelsior Road & Calvine Rd	All-way stop	E	43.9	Yes	Signal	D	36.7	All-way stop	C	20.3	No	Signal	C	32.5

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.

While implementation of Mitigation Measures TR-1, 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 the Project Applicant 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**.

ALTERNATIVE 2

Table TR-28 summarizes the results of the operations analysis for intersections within the traffic study area for Alternative 2. 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 Alternative 2 would construct several improvements to intersections internal to, or on the boundary of the Jackson Township Project. The timing of implementation of such intersection improvements would affect whether or not impacts would exist at some time before full buildout of the Alternative 2.

Signal warrant analysis was also conducted for all unsignalized intersections along Jackson Road, and other unsignalized intersections near the Plan Area. Detailed signal warrant calculation sheets are included in Appendix TR-1.

With implementation of Alternative 2, the following unsignalized intersections would experience traffic volumes resulting in one or more traffic signal warrants being met:

- Happy Lane and Old Placerville Road
- Excelsior Road and Elder Creek Road
- Excelsior Road and Florin Road
- Mather Boulevard and Douglas Road
- Eagles Nest Road and Jackson Road
- Excelsior Road and Calvine Road

As shown in Table TC-28, the addition of vehicle trips generated by buildout of Alternative 2 would result in the exceedance of applicable LOS and delay thresholds. This impact would be **significant**.

Table TC-28: Existing Plus Alternative 2 Intersection Operations

Intersection		AM Peak Hour							PM Peak Hour						
		Existing			Existing Plus Alternative 2			LOS Impact	Existing			Existing Plus Alternative 2			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
18	S. Watt Avenue & Elder Creek Road	Signal	E	62.7	Signal	E	71.3	Yes	Signal	E	68.8	Signal	E	75.9	Yes
38	Bradshaw Road & Jackson Road	Signal	E	73.1	Signal	F	130.6	Yes	Signal	E	59.4	Signal	E	70.7	No
	Northbound Left Turn		*F*	*64.8*		*F*	*199.7*			*F*	*95.9*		*F*	*>300*	
	Northbound Right Turn		*D*	*30.6*		*E*	*35.5*			*C*	*15.4*		*C*	*19.7*	
	Westbound Left Turn		*B*	*10.2*		*B*	*10.9*			*B*	*10.1*		*B*	*10.5*	
45	Excelsior Road & Jackson Road	Signal	D	36.7	Signal	F	167.1	Yes	Signal	D	40.3	Signal	F	108.0	Yes
46	Excelsior Road & Elder Creek Road	Two-way stop	A	3.5	Two-way stop	F	56.2	Yes	Two-way stop	A	2.7	Two-way stop	E	44.8	Yes
	Northbound Left Turn		*A*	*7.5*		*A*	*7.8*			*A*	*8.0*		*A*	*8.9*	
	Eastbound		*C*	*18.6*		*F*	*251.5*			*B*	*12.3*		*F*	*148.1*	
47	Excelsior Road & Florin Road	All-way stop	C	24.9	All-way stop	F	173.7	No	All-way stop	B	12.5	All-way stop	F	67.7	Yes
52	Mather Boulevard & Douglas Road	All-way stop	E	39.3	All-way stop	F	84.8	Yes	All-way stop	C	15.5	All-way stop	C	18.7	No
60	Eagles Nest Road & Jackson Road	Two-way stop	A	2.3	Two-way stop	F	96.3	Yes	Two-way stop	A	3.6	Two-way stop	C	20.0	Yes
	Northbound		*C*	*22.0*		*F*	*>300*			*C*	*23.8*		*F*	*216.4*	
	Southbound		*B*	*13.9*		*C*	*15.6*			*C*	*22.0*		*E*	*47.7*	
	Eastbound Left Turn		*A*	*8.8*		*B*	*10.3*			*A*	*7.9*		*A*	*8.1*	
	Westbound Left Turn		*A*	*7.9*		*A*	*8.3*			*A*	*8.7*		*A*	*8.9*	
80	Grant Line Road & Jackson Road	Signal	E	74.0	Signal	F	96.0	Yes	Signal	E	78.9	Signal	E	70.7	No
90	Excelsior Road & Calvine Rd	All-way stop	C	16.6	All-way stop	E	36.2	Yes	All-way stop	B	13.0	All-way stop	C	20.9	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.

As identified in Table TC-29, implementation of Mitigation Measures TR-1, TR-2, and TR-4 would result in fair share payments toward improvements that would reduce all roadway intersection impacts of Alternative 2 to a less-than-significant level. Mitigation would generally involve improvements within the alignment or widening of the roadway. The construction-related impacts of these improvements have been programmatically evaluated within the scope of the technical sections of this Draft EIR and construction would generally result in a similar program of mitigation required for the project. However, it is acknowledged that some site-specific impacts may occur, the details of which are unknown at this time.

While implementation of Mitigation Measure TR-1, 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 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 the Project Applicant 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**.

Mitigation Measures

TR-4: Intersection Operations Impacts

> The Project Applicant shall implement the set of intersection improvements assigned to the project by the Tool (Mitigation Measure TR-1) and shown in Table TC-27 and Table TC-29 for the Proposed Project and Alternative 2, respectfully. Where feasible, the number of roadway lanes 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 would propose alternative mitigation measures. 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 TC-29: Existing Plus Alternative 2 Intersection Operations with Mitigation

Intersection		A.M. Peak Hour							P.M. Peak Hour						
		Existing Plus Alternative 2			LOS Impact	Mitigated Existing Plus Alternative 2			Existing Plus Alternative 2			LOS Impact	Mitigated Existing Alternative 2		
		Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)
18	S. Watt Avenue & Elder Creek Road	Signal	E	71.3	Yes	Signal	D	41.6	Signal	E	75.9	Yes	Signal	D	36.4
38	Bradshaw Road & Jackson Road	Signal	F	130.6	Yes	Signal	E	69.4	Signal	E	70.7	No	Signal	D	41.0
42	Happy Lane & Old Placerville Road	Two-way stop	B	11.5	Yes	Signal	C	35.0	Two-way stop	B	14.9	Yes	Signal	C	24.9
	Northbound Left Turn		*F*	*199.7*						*F*	*>300*				
	Northbound Right Turn		*E*	*35.5*						*C*	*19.7*				
	Westbound Left Turn		*B*	*10.9*						*B*	*10.5*				
45	Excelsior Road & Jackson Road	Signal	F	167.1	Yes	Signal	E	63.0	Signal	F	108.0	Yes	Signal	D	45.4
46	Excelsior Road & Elder Creek Road	Two-way stop	F	56.2	Yes	Signal	D	41.2	Two-way stop	E	44.8	Yes	Signal	C	31.0
	Northbound Left Turn		*A*	*7.8*						*A*	*8.9*				
	Eastbound		*F*	*251.5*						*F*	*148.1*				
47	Excelsior Road & Florin Road	All-way stop	F	173.7	Yes	Signal	B	16.4	All-way stop	F	67.7	Yes	Signal	B	11.9
52	Mather Boulevard & Douglas Road	All-way stop	F	84.8	Yes	Signal	A	9.0	All-way stop	C	18.7	No	Signal	B	11.3
60	Eagles Nest Road & Jackson Road	Two-way stop	F	96.3	Yes	Signal	C	26.0	Two-way stop	C	20.0	Yes	Signal	C	26.5
	Northbound		*F*	*>300*						*F*	*216.4*				
	Southbound		*C*	*15.6*						*E*	*47.7*				
	Eastbound Left Turn		*B*	*10.3*						*A*	*8.1*				
	Westbound Left Turn		*A*	*8.3*						*A*	*8.9*				
80	Grant Line Road & Jackson Road	Signal	F	96.0	Yes	Signal	D	41.8	Signal	E	70.7	Yes	Signal	C	32.4
90	Excelsior Road & Calvine Rd	All-way stop	E	36.2	Yes	Signal	C	21.2	All-way stop	C	20.9	No	Signal	C	31.2

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.

IMPACT: FREEWAY FACILITY IMPACTS

PROPOSED PROJECT

FREEWAY SEGMENTS

Table TC-30 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 TC-30, with implementation of the Project, Caltrans' threshold of significance (5 percent V/C increase) would not be exceeded along any of the freeway segments analyzed.

FREEWAY RAMP INTERSECTION QUEUING

Table TC-31 summarizes a.m. and p.m. peak hour freeway ramp intersection queuing. As shown in Table TC-31, implementation of the 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.

FREEWAY MERGE / DIVERGE / WEAVE SEGMENTS

Table TC-32 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**.

Implementation of Mitigation Measure TR-5 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 are unknown at this time; thus, if implemented it cannot be assured that the implementation of Mitigation Measure TR-5 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.

Table TC-30: Existing Plus Proposed Project Freeway Segment Operations

Direction	Location	Existing				Existing Plus Proposed 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	7,137	C	6,501	C
	Stockton Boulevard to 59th Street	7,470	F	7,228	F	7,553	F	7,307	F
	59th Street to 65th Street	6,767	D	6,641	D	6,851	D	6,711	D
	65th Street to Howe Avenue	7,962	D	7,562	D	8,042	D	7,632	D
	Howe Avenue to Watt Avenue	7,405	D	7,602	D	7,434	D	7,718	D
	Watt Avenue to Bradshaw Road	7,935	D	7,176	C	7,954	D	7,284	C
	Bradshaw Rd to Mather Field Rd	7,725	F	7,366	C	7,690	F	7,378	C
	Mather Field Rd to Zinfandel Drive	7,275	C	7,224	C	7,258	C	7,238	C
	Zinfandel Drive to Sunrise Blvd	5,121	C	6,649	F	5,205	C	6,681	F
	Sunrise Boulevard to Hazel Avenue	4,985	C	5,323	F	5,054	C	5,341	F
West-bound US 50	Hazel Avenue to Sunrise Boulevard	6,068	D	4,370	C	6,114	D	4,411	C
	Sunrise Blvd to Zinfandel Drive	7,502	D	4,762	C	7,521	D	4,823	C
	Zinfandel Drive to Mather Field Rd	7,548	C	5,765	B	7,572	C	5,728	B
	Mather Field Rd to Bradshaw Road	7,859	F	6,939	D	7,870	F	6,877	D
	Bradshaw Road to Watt Avenue	7,550	F	6,466	D	7,564	F	6,554	D
	Watt Avenue to Howe Avenue	7,376	F	5,106	F	7,343	F	5,177	F
	Howe Avenue to 65th Street	8,157	F	7,407	F	8,186	F	7,470	F
	65th Street to 59th Street	8,278	F	7,358	F	8,304	F	7,426	F
	59th Street to Stockton Boulevard	9,115	D	7,945	F	9,154	D	8,017	F
	Stockton Boulevard to SR 99 / SR 51	8,546	D	8,136	F	8,573	D	8,186	F

Bold values denote level of service "F" conditions. Red shaded values indicate project impacts.

Source: DKS Associates 2019.

Table TC-31: Existing Plus Proposed Project 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	89	-	250	119	-	127
	Watt Avenue	1,500	-	1,500	163	-	228	252	-	242
	Bradshaw Road	1,250	-	1,250	87	-	303	75	-	215
	Mather Field Road	1,385	-	1,385	104	-	327	115	-	70
	Zinfandel Drive	1,025	1,025	1,025	196	707	651	443	368	176
	Sunrise Boulevard	1,695	-	1,695	136	-	90	175	-	52
	Hazel Avenue	1,310	-	1,310	163	-	38	130	-	6
Westbound US-50	Hazel Avenue	1,995		1,995	262		44	149		202
	Sunrise Boulevard	1,540	-	1,540	60	-	64	110	-	146
	Zinfandel Drive	1,065	-	1,065	165	-	50	76	-	86
	Mather Field Road	1,335	-	1,335	248	-	184	102	-	48
	Bradshaw Road	1,330	-	1,330	89	-	48	119	-	13
	Watt Avenue	1,480	-	1,480	167	-	524	92	-	430
	Howe Avenue	1,355	1,355	1,355	126	412	87	167	412	187

Red shaded values indicate project impacts.

L = left turn movement, T = through movement, R = right turn movement

Source: DKS Associates, 2018.

Table TC-32: Existing Plus Proposed Project Freeway Merge/Diverge/Weave Segment Operations

Direction	Location	Junction Type	Existing				Existing Plus Proposed 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
East-bound US 50	Northbound 65th Street Slip Entrance	Weave	765	D	653	C	771	D	637	C
	Howe Avenue / Hornet Drive Exit		1,631		1,417		1,684		1,353	
	Southbound Howe Avenue Loop Entrance	One-Lane Merge	484	C	881	C	485	C	853	C
	Northbound Howe Avenue Slip Entrance	One-Lane Merge	419	C	431	C	435	C	426	C
	Watt Avenue Exit	Two-Lane Diverge	1,317	B	1,634	B	1,330	B	1,629	B
	Watt Avenue Entrance	One-Lane Merge	2,134	F	1,724	D	2,134	F	1,721	D
	Bradshaw Road Exit	Two-Lane Diverge	1,520	B	1,228	B	1,538	B	1,294	B
	Southbound Bradshaw Road Loop Entrance	One-Lane Merge	220	C	422	C	228	C	397	C
	Northbound Bradshaw Road Slip Entrance	One-Lane Merge	971	C	918	C	921	C	920	C
	Mather Field Road Exit	Two-Lane Diverge	1,266	B	1,062	A	1,266	B	1,092	A
	Southbound Mather Field Road Loop Entrance	One-Lane Merge	125	C	101	B	133	C	100	B
	Northbound Mather Field Road Slip Entrance	Weave	317	F	816	C	325	F	841	C
	Zinfandel Drive Exit		2,932		1,452		2,938		1,472	
	Southbound Zinfandel Drive Loop Entrance	One-Lane Merge	182	B	129	C	177	B	128	C
	Northbound Zinfandel	One-Lane Merge	348	B	540	C	471	B	574	C

Direction	Location	Junction Type	Existing				Existing Plus Proposed 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
	Drive Slip Entrance									
	Sunrise Boulevard Exit	Major Diverge	1,773	C	1,959	D	1,799	C	1,975	D
	Sunrise Boulevard Entrance	One-Lane Merge	992	C	889	D	1,002	C	892	D
	Hazel Avenue Exit	Two-Lane Diverge	933	B	1,541	C	961	B	1,544	C
	Hazel Avenue Entrance	Weave	804	C	945	C	799	C	947	C
	Aerojet Road Exit		241		55		241		51	
West-bound US 50	Hazel Avenue Exit	Two-Lane Diverge	631	A	869	A	653	A	874	A
	Northbound Hazel Avenue Loop Entrance	One-Lane Merge	160	B	600	B	164	B	601	B
	Southbound Hazel Avenue Slip Entrance	One-Lane Merge	1,550	B	800	B	1,574	B	820	B
	Sunrise Boulevard Exit	One-Lane Diverge	749	E	758	D	745	E	763	D
	Sunrise Blvd Entrance	Lane Addition	2,183	F	1,656	D	2,189	F	1,672	D
	Zinfandel Drive Exit	One-Lane Diverge	1,034	E	608	C	1,037	E	680	C
	Northbound Zinfandel Drive Loop Entrance	Lane Addition	585	B	1,197	B	606	B	1,173	B
	Southbound Zinfandel Drive Slip Entrance	One-Lane Merge	442	C	561	B	445	C	557	B
	Mather Field Road Exit	One-Lane Drop	1,093	C	556	A	1,119	C	588	A
	Northbound Mather Field Road Loop Entrance	One-Lane Merge	515	B	861	B	514	B	895	B
	Southbound Mather Field Road Slip Entrance	One-Lane Merge	387	B	380	B	386	B	358	B
	Bradshaw Road Exit	Two-Lane Diverge	1,236	B	1,327	B	1,276	B	1,278	B

Direction	Location	Junction Type	Existing				Existing Plus Proposed 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
	Northbound Bradshaw Road Loop Entrance	One-Lane Merge	914	D	910	C	967	D	962	C
	Southbound Bradshaw Road Slip Entrance	One-Lane Merge	338	D	590	C	333	D	645	C
	Watt Avenue Exit	Major Diverge	1,373	D	1,188	C	1,345	D	1,205	C
	Northbound Watt Avenue Entrance	One-Lane Merge	820	D	943	C	782	D	938	C
	Southbound Watt Avenue Slip Entrance	Lane Addition / Weave	1,232	C	1,317	D	1,195	C	1,322	F
	Howe Avenue Exit	Major Diverge / Weave	1,531	D	1,419		1,530	D	1,462	
	Northbound Howe Avenue Loop Entrance	One-Lane Merge	654	D	602	C	659	D	621	C
	Southbound Howe Avenue Slip Entrance	One-Lane Merge	574	C	574	C	572	C	566	C

Bold values denote level of service “F” conditions.

Red shaded values indicate project impacts.

Source: DKS Associates, 2018.

ALTERNATIVE 2

FREEWAY SEGMENTS

Table TC-33 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 TC-33, with implementation of Alternative 2, the Caltrans' threshold of significance (5 percent V/C increase) would not be exceeded along any of the freeway segments analyzed.

FREEWAY RAMP INTERSECTION QUEUING

Table TC-34 summarizes a.m. and p.m. peak hour freeway ramp intersection queuing. As shown in Table TC-34, implementation of Alternative 2 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.

FREEWAY MERGE / DIVERGE / WEAVE SEGMENTS

Table TC-35 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**.

Implementation of Mitigation Measure TR-5 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 under Alternative 2. 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 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 for Alternative 2.

Table TC-33: Existing Plus Alternative 2 Freeway Segment Operations

Direction	Location	Existing				Existing Plus Alternative 2			
		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	7,156	C	6,475	C
	Stockton Boulevard to 59th Street	7,470	F	7,228	F	7,564	F	7,290	F
	59th Street to 65th Street	6,767	D	6,641	D	6,856	D	6,689	D
	65th Street to Howe Avenue	7,962	D	7,562	D	8,084	D	7,611	D
	Howe Avenue to Watt Avenue	7,405	D	7,602	D	7,477	D	7,711	D
	Watt Avenue to Bradshaw Road	7,935	D	7,176	C	8,002	D	7,284	C
	Bradshaw Rd to Mather Field Rd	7,725	F	7,366	C	7,712	F	7,407	C
	Mather Field Rd to Zinfandel Drive	7,275	C	7,224	C	7,268	C	7,264	C
	Zinfandel Drive to Sunrise Blvd	5,121	C	6,649	F	5,289	C	6,708	F
	Sunrise Boulevard to Hazel Avenue	4,985	C	5,323	F	5,132	C	5,366	F
West- bound US 50	Hazel Avenue to Sunrise Boulevard	6,068	D	4,370	C	6,121	D	4,481	C
	Sunrise Blvd to Zinfandel Drive	7,502	D	4,762	C	7,540	D	4,902	C
	Zinfandel Drive to Mather Field Rd	7,548	C	5,765	B	7,551	C	5,710	B
	Mather Field Rd to Bradshaw Road	7,859	F	6,939	D	7,857	F	6,869	D
	Bradshaw Road to Watt Avenue	7,550	F	6,466	D	7,522	F	6,556	D
	Watt Avenue to Howe Avenue	7,376	F	5,106	F	7,326	F	5,165	F
	Howe Avenue to 65th Street	8,157	F	7,407	F	8,182	F	7,469	F
	65th Street to 59th Street	8,278	F	7,358	F	8,281	F	7,413	F
	59th Street to Stockton Boulevard	9,115	D	7,945	F	9,125	D	8,008	F
	Stockton Boulevard to SR 99 / SR 51	8,546	D	8,136	F	8,536	D	8,194	F

Bold values denote level of service "F" conditions. Red shaded values indicate project impacts.

Source: DKS Associates 2019

Table TC-34: Existing Plus Alternative 2 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	84	-	247	117	-	130
	Watt Avenue	1,500	-	1,500	176	-	213	245	-	219
	Bradshaw Road	1,250	-	1,250	91	-	306	84	-	203
	Mather Field Road	1,385	-	1,385	98	-	337	116	-	70
	Zinfandel Drive	1,025	1,025	1,025	194	708	660	471	398	208
	Sunrise Boulevard	1,695	-	1,695	139	-	95	172	-	56
	Hazel Avenue	1,310	-	1,310	168	-	41	156	-	7
Westbound US-50	Hazel Avenue	1,995		1,995	272		47	157		224
	Sunrise Boulevard	1,540	-	1,540	64	-	61	118	-	133
	Zinfandel Drive	1,065	-	1,065	167	-	51	90	-	122
	Mather Field Road	1,335	-	1,335	249	-	186	104	-	49
	Bradshaw Road	1,330	-	1,330	91	-	50	118	-	13
	Watt Avenue	1,480	-	1,480	167	-	538	92	-	438
	Howe Avenue	1,355	1,355	1,355	126	412	89	169	412	175

Red shaded values indicate project impacts.

L = left turn movement, T = through movement, R = right turn movement

Source: DKS Associates 2019

Table TC-35: Existing Plus Alternative 2 Freeway Merge/Diverge/Weave Segment Operations

Direction	Location	Junction Type	Existing				Existing Plus Alternative 2			
			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	771	D	636	C
	Howe Avenue / Hornet Drive Exit		1,631		1,417		1,681		1,354	
	Southbound Howe Avenue Loop Entrance	One-Lane Merge	484	C	881	C	485	C	853	C
	Northbound Howe Avenue Slip Entrance	One-Lane Merge	419	C	431	C	435	C	426	C
	Watt Avenue Exit	Two-Lane Diverge	1,317	B	1,634	B	1,333	B	1,641	B
	Watt Avenue Entrance	One-Lane Merge	2,134	F	1,724	D	2,143	F	1,739	D
	Bradshaw Road Exit	Two-Lane Diverge	1,520	B	1,228	B	1,572	B	1,284	B
	Southbound Bradshaw Road Loop Entrance	One-Lane Merge	220	C	422	C	224	C	425	C
	Northbound Bradshaw Road Slip Entrance	One-Lane Merge	971	C	918	C	923	C	910	C
	Mather Field Road Exit	Two-Lane Diverge	1,266	B	1,062	A	1,275	B	1,092	A
	Southbound Mather Field Road Loop Entrance	One-Lane Merge	125	C	101	B	134	C	100	B
	Northbound Mather Field Road Slip Entrance	Weave	317	F	816	C	325	F	828	C
	Zinfandel Drive Exit		2,932		1,452		2,945		1,471	
	Southbound Zinfandel Drive Loop Entrance	One-Lane Merge	182	B	129	C	176	B	132	C
	Northbound Zinfandel Drive Slip	One-Lane	348	B	540	C	562	B	591	C

Direction	Location	Junction Type	Existing				Existing Plus Alternative 2			
			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	Merge								
	Sunrise Boulevard Exit	Major Diverge	1,773	C	1,959	D	1,821	C	1,954	D
	Sunrise Boulevard Entrance	One-Lane Merge	992	C	889	D	1,011	C	870	D
	Hazel Avenue Exit	Two-Lane Diverge	933	B	1,541	C	993	B	1,555	C
	Hazel Avenue Entrance	Weave	804	C	945	C	803	C	949	C
	Aerojet Road Exit		241		55		242		58	
Westbound US 50	Hazel Avenue Exit	Two-Lane Diverge	631	A	869	A	686	A	877	B
	Northbound Hazel Avenue Loop Entrance	One-Lane Merge	160	B	600	B	166	B	595	B
	Southbound Hazel Avenue Slip Entrance	One-Lane Merge	1,550	B	800	B	1,608	B	868	B
	Sunrise Boulevard Exit	One-Lane Diverge	749	E	758	D	729	E	780	D
	Sunrise Blvd Entrance	Lane Addition	2,183	F	1,656	D	2,186	F	1,685	D
	Zinfandel Drive Exit	One-Lane Diverge	1,034	E	608	C	1,060	E	764	C
	Northbound Zinfandel Drive Loop Entrance	Lane Addition	585	B	1,197	B	599	B	1,194	B
	Southbound Zinfandel Drive Slip Entrance	One-Lane Merge	442	C	561	B	437	C	533	B
	Mather Field Road Exit	One-Lane Drop	1,093	C	556	A	1,110	C	575	A
	Northbound Mather Field Road Loop Entrance	One-Lane Merge	515	B	861	B	511	B	889	B

Direction	Location	Junction Type	Existing				Existing Plus Alternative 2			
			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
	Southbound Mather Field Road Slip Entrance	One-Lane Merge	387	B	380	B	390	B	370	B
	Bradshaw Road Exit	Two-Lane Diverge	1,236	B	1,327	B	1,277	B	1,266	B
	Northbound Bradshaw Road Loop Entrance	One-Lane Merge	914	D	910	C	932	D	959	C
	Southbound Bradshaw Road Slip Entrance	One-Lane Merge	338	D	590	C	334	D	633	C
	Watt Avenue Exit	Major Diverge	1,373	D	1,188	C	1,357	D	1,209	C
	Northbound Watt Avenue Entrance	One-Lane Merge	820	D	943	C	803	D	936	C
	Southbound Watt Avenue Slip Entrance	Lane Addition / Weave	1,232	C	1,317	D	1,211	C	1,313	F
	Howe Avenue Exit	Major Diverge / Weave	1,531	D	1,419		1,549	D	1,467	
	Northbound Howe Avenue Loop Entrance	One-Lane Merge	654	D	602	C	665	D	621	C
	Southbound Howe Avenue Slip Entrance	One-Lane Merge	574	C	574	C	575	C	569	C

Bold values denote level of service "F" conditions.
Red shaded values indicate project impacts.
Source: DKS Associates 2019

Mitigation Measures

TR-5: Freeway Capacity Improvements

- To minimize to westbound US 50 weave between Watt Avenue and Howe Avenue, the Project Applicant or subsequent developer(s) 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 or subsequent developer(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).

  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.

Impact: Bicycle and Pedestrian Impacts

Proposed Project

The Project would not remove any existing or planned bicycle or pedestrian facilities. Additionally, it would include the provision of new bicycle and pedestrian facilities throughout the Plan Area, and between the Plan Area and other nearby land uses. As detailed in the Project Transportation Improvements section of this chapter (beginning

on page 20-53) and Plates TC-14 and 20-15, the Project would provide sidewalks and on-street (Class II) bike lanes on all collector, arterial and thoroughfare roadways. The Project would also provide 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 Project vicinity in conformance with County design standards. Additionally, circulation and access to all proposed public spaces would 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**.

Implementation of Mitigation Measure TR-6 would ensure that the new pedestrian and bicycle facilities 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**.

ALTERNATIVE 2

As detailed in the Project Transportation Improvements section of this chapter (beginning on page 20-53) and Plate TC-15, Alternative 2 would provide sidewalks and on-street (Class II) bike lanes on all collector, arterial and thoroughfare roadways. Alternative 2 would also provide several off-street (Class I) multi-purpose trails. 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**.

Implementation of Mitigation Measure TR-6 would ensure that the new pedestrian and bicycle facilities 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**.

MITIGATION MEASURES

TR-6: Bicycle and Pedestrian Improvements

> Before approval of any tentative map, the Project Applicant or subsequent developer(s) 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 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.

IMPACT: TRANSIT IMPACTS

PROPOSED PROJECT

Public transit is not currently provided to, or in the vicinity of, the Plan Area. As detailed in the Project Transportation Improvements section of this chapter (beginning on page 20-53), a conceptual transit system to serve the Jackson Corridor Projects (including the Jackson Township 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 systems would be a condition of approval for the Project and was assumed as an attribute of the Project that was included in the traffic modeling and analysis in the Transportation Report. The assumed transit routes and service frequency would be required at full development of the Project, and service would be phased as described in Chapter 2, "Project Description." Because adequate transit facilities would be provided as development occurs, the Project would have **less-than-significant** impacts on the transit facilities.

ALTERNATIVE 2

Alternative 2 would include transit service, as envisioned in the joint transit planning process, that meets the County's requirements for service. Because adequate transit facilities would be provided as development occurs, Alternative 2 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: 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.

IMPACT: ROADWAY FUNCTIONALITY IMPACTS

PROPOSED PROJECT

Table TC-36 summarizes the results of the rural roadway segment functionality analysis. This table includes the number of lanes assumed with the implementation of the 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

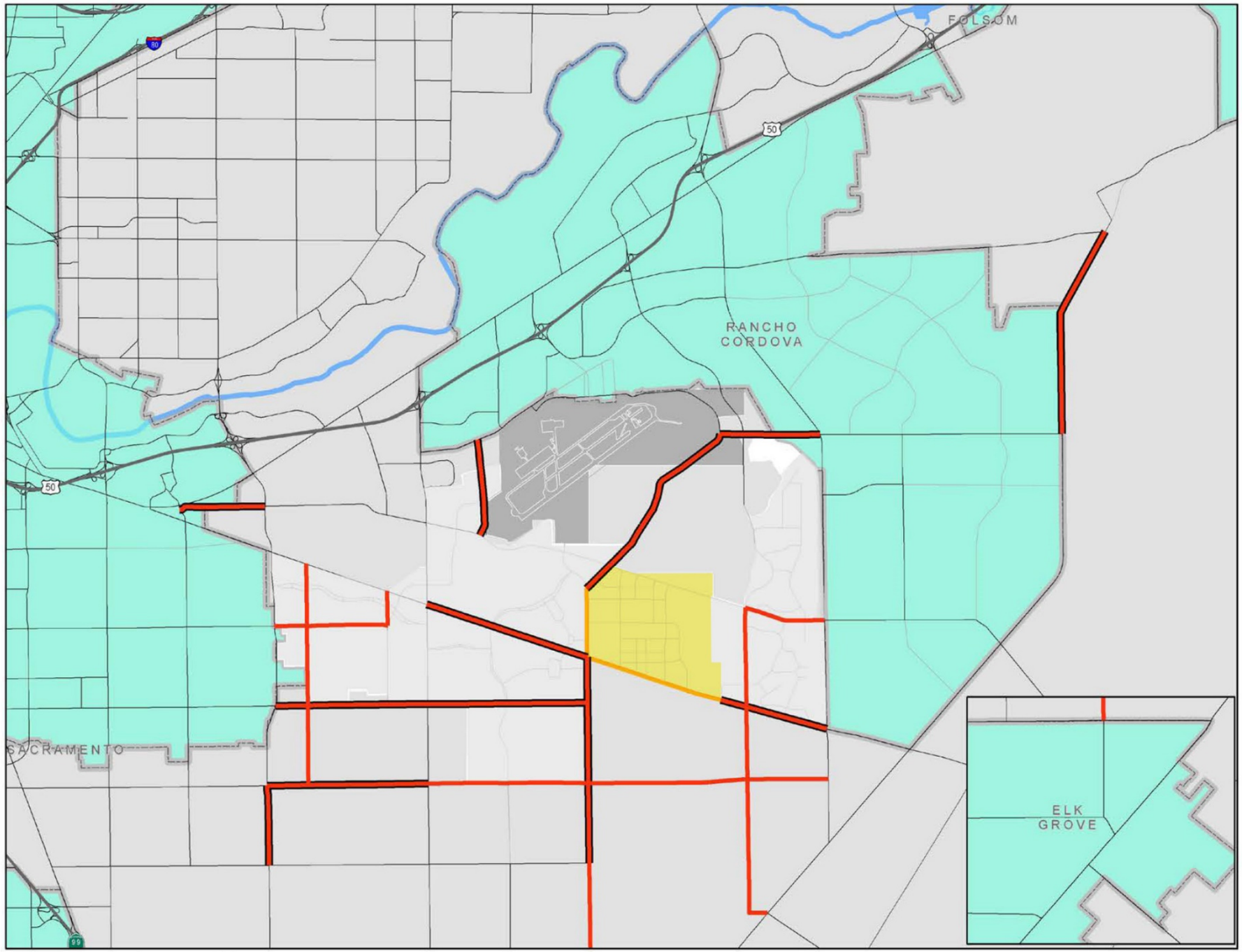
roadways and widened roadways that are assumed to be included within the Project. The “Substandard” heading indicates whether a roadway meets the County standards requiring 12-foot wide travel lanes with 6-foot wide shoulders. If the project makes improvements to a roadway segment such as widening, it 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 TC-16 depicts the location of the segments along which functionality impacts would occur.

As stated above, the traffic analysis assumed that the Project would construct several travel lanes on roadway segments that are internal to, or on the boundary of the project site, 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 buildout of the Project.

As shown in Table TC-36, implementation of the Project would result in functionality impacts along 19 roadway segments within the Project study area. Thus, this impact would be **significant**.

Table TC-37 summarizes improvements projected to be required for the Project based on the status of current development in the area. Table TC-37 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.

As shown in Table TC-37, implementation of Mitigation Measures TR-1, TR-2, and TR-8 would result in fair share payment toward improvements that would reduce the impacts of the Project. However, it cannot be guaranteed that all of these improvements would be implemented concurrent with the phasing of development proposed for the 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 the Project Applicant and the County, it cannot be guaranteed that significant impacts to roadway functionality 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 prepared and provided by DKS Associates in 2019

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Plate TC-16: Existing Plus Proposed Project Functionality Impacts

Table TC-36: Proposed Project Functionality Impacts

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				Existing Plus Proposed Project			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Substandard? [1]	Forecasted Volume	Functionality Impact? [2]
15	Douglas Rd	Mather Blvd	Zinfandel Dr	County	2	23	Yes	6,635	2	Yes	7,390	Yes
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	Rancho Cordova/ County	2	23	Yes	8,369	2	Yes	9,210	Yes
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	County	2	20	Yes	740	2	Yes	1,850	No
20	Eagles Nest Rd	Jackson Rd	Florin Rd	County	2	<21	Yes	517	2	Yes	1,850	No
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	County	2	<21	Yes	189	2	Yes	1,410	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	County	2	23	Yes	5,576	2	Yes	9,060	Yes
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	County	2	23	Yes	5,797	2	Yes	9,390	Yes
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	County	2	23	Yes	5,355	2	Yes	9,400	Yes
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	County	2	23	Yes	2,158	2	Yes	10,340	Yes
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	County	2	22	Yes	3,716	2	Yes	15,060	Yes
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	County	2	<21	Yes	5,075	2	Yes	16,560	Yes
32	Excelsior Rd	Elder Creek Rd	Florin Rd	County	2	<21	Yes	4,203	2	Yes	7,220	Yes
33	Excelsior Rd	Florin Rd	Gerber Rd	County	2	<21	Yes	5,423	2	Yes	7,580	Yes
34	Excelsior Rd	Gerber Rd	Calvine Rd	County	2	<21	Yes	4,229	2	Yes	5,220	No
39	Florin Rd	South Watt Ave	Hedge Ave	County	2	22	Yes	7,718	2	Yes	9,910	Yes
40	Florin Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	6,312	2	Yes	9,010	Yes
41	Florin Rd	Mayhew Rd	Bradshaw Rd	County	2	22	Yes	6,317	2	Yes	9,080	Yes
42	Florin Rd	Bradshaw Rd	Excelsior Rd	County	2	22	Yes	3,478	2	Yes	5,910	No
43	Florin Rd	Excelsior Rd	Sunrise Blvd	County	2	22	Yes	3,835	2	Yes	4,690	No
48	Fruitridge Rd	South Watt Ave	Hedge Ave	City of Sacramento/ County	2	22	Yes	2,890	2	Yes	2,940	No
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	1,790	2	Yes	1,440	No
50	Grant Line Rd	White Rock Rd	Douglas Rd	Rancho Cordova/ County	2	22	Yes	7,189	2	Yes	8,310	Yes
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	County	2	22	Yes	4,635	2	Yes	6,700	Yes

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				Existing Plus Proposed Project			
		From	To		Travel Lanes	Pavement (ft)	Substandard? [1]	Existing Volume	Travel Lanes	Substandard? [1]	Forecasted Volume	Functionality Impact? [2]
59	Hedge Ave	Jackson Rd	Fruitridge Rd	County	2	22	Yes	3,061	2	Yes	2,640	No
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	City of Sacramento/ County	2	22	Yes	3,737	2	Yes	3,960	No
61	Hedge Ave	Elder Creek Rd	Florin Rd	County	2	22	Yes	2,722	2	Yes	3,010	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	County	2	26	Yes	13,030	2	Yes	26,090	Yes
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	County	2	26	Yes	10,478	4	No	32,180	Yes[3]
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	City of Sacramento/ County	2	22	Yes	4,616	2	Yes	4,860	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	County	2	22	Yes	4,618	2	Yes	5,620	No
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	County	2	22	Yes	656	2	Yes	1,790	No
83	Mather Blvd-Excelsior Rd[4]	Douglas Rd	Kiefer Blvd	County	2	22	Yes	6,751	2	Yes	8,760	Yes
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	County	2	22	Yes	1,616	2	Yes	1,260	No
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	Rancho Cordova/ County	2	20	Yes	2,490	2	Yes	2,230	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	County	2	<21	Yes	2,848	2	Yes	6,870	Yes

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.

[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.

Red text with light gray shading indicate project impacts.

Table TC-37: Proposed Project Functionality Impacts with Mitigation

ID	Roadway	Segment		Existing Plus Proposed Project				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Substandard? [1]	Forecasted Volume	Functionality Impact? [2]		
15	Douglas Rd	Mather Blvd	Zinfandel Dr	2	Yes	7,390	Yes	Widen to County standards [5]	No
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	2	Yes	9,210	Yes	Widen to County standards [5]	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	2	Yes	9,060	Yes	Widen to County standards [5]	No
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	2	Yes	9,390	Yes	Widen to County standards [5]	No
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	2	Yes	9,400	Yes	Widen to County standards [5]	No
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	2	Yes	10,340	Yes	Widen to County standards [5]	No
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	2	Yes	15,060	Yes	Widen to County standards [5]	No
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	2	Yes	16,560	Yes	Widen to County standards [5]	No
32	Excelsior Rd	Elder Creek Rd	Florin Rd	2	Yes	7,220	Yes	Widen to County standards [5]	No
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Yes	7,580	Yes	Widen to County standards [5]	No
39	Florin Rd	South Watt Ave	Hedge Ave	2	Yes	9,910	Yes	Widen to County standards [5]	No
40	Florin Rd	Hedge Ave	Mayhew Rd	2	Yes	9,010	Yes	Widen to County standards [5]	No
41	Florin Rd	Mayhew Rd	Bradshaw Rd	2	Yes	9,080	Yes	Widen to County standards [5]	No
50	Grant Line Rd	White Rock Rd	Douglas Rd	2	Yes	8,310	Yes	Widen to County standards [5]	No
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	2	Yes	6,700	Yes	Widen to County standards [5]	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	2	Yes	26,090	Yes	Widen to County standards [5]	No

ID	Roadway	Segment		Existing Plus Proposed Project				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Substandard? [1]	Forecasted Volume	Functionality Impact? [2]		
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	4	No	32,180	Yes[3]	Widen to County standards [5]	No
83	Mather Blvd-Excelsior Rd[4]	Douglas Rd	Kiefer Blvd	2	Yes	8,760	Yes	Widen to County standards [5]	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	2	Yes	6,870	Yes	Widen to County standards [5]	No

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.

[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.

Red text with light gray shading indicate project impacts.

ALTERNATIVE 2

Table TC-38 summarizes the results of the rural roadway segment functionality analysis. As stated above, the traffic analysis assumed that Alternative 2 would construct several travel lanes on roadway segments that are internal to, or on the boundary of the Plan Area, and the entire roadway segment would be reconstructed to County standards. The timing of implementation of these additional traffic lanes on internal or boundary roadway segments would affect whether or not impacts would occur at some point before full buildout of Alternative 2. Plate TC-17 depicts the location of the segments along which functionality impacts would occur.

As shown in Table TC-38, implementation of Alternative 2 would result in functionality impacts along 19 roadway segments within the project study area. Thus, this impact would be **significant**.

Consistent with the Project, implementation of Mitigation Measures TR-1, TR-2, and TR-8 would result in fair share payment toward improvements that would reduce the impacts of Alternative 2 as shown in Table TC-39. However, it cannot be guaranteed that all these improvements would be implemented concurrent with the phasing of development proposed for Alternative 2 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 the Project Applicant and the County, it cannot be guaranteed that significant impacts to roadway functionality would be reduced to a less-than-significant at the time of development. Therefore, this impact is concluded to be **significant and unavoidable**.

MITIGATION MEASURES

TR-8. Roadway Functionality Improvements

> The Project Applicant shall implement Mitigation Measure TR-1 and TR-2 and the associated functionality improvements shown in Table TC-37 and Table TC-39 for the Proposed Project and Alternative 2, respectively. The Project 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 would include widening the deficient rural roadway segments to County standards.
>
> 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.

IMPACT: EMERGENCY ACCESS AND HAZARDOUS DESIGN FEATURE IMPACTS

PROPOSED PROJECT

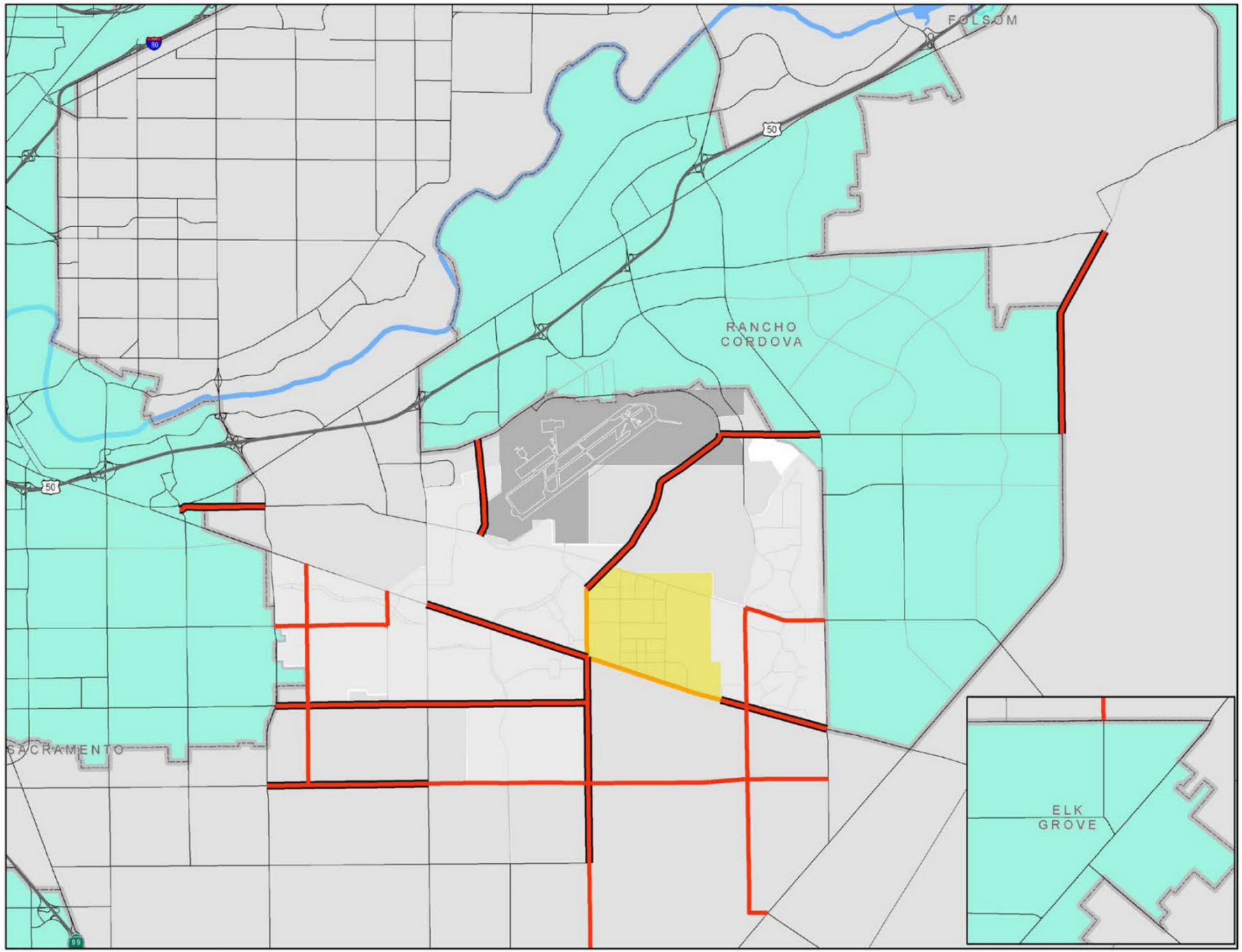
The Project would provide new roadway connections, which would provide for improved emergency access and connections within the area, and would not result in modifications to the existing roadway network such that emergency access along existing roadways would be impaired. The Project would be designed to meet all the design and safety standards established by the County which requires coordination with Sacramento Metro Fire District to ensure that the design of local roads would 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. Therefore, the Project would have **less-than-significant** impacts on emergency access and response, and safety associated with design features.

ALTERNATIVE 2

Alternative 2 would result in new and improved roadway connections that meet all the design and safety standards established by the County 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. Therefore, the Alternative 2 would have **less-than-significant** impacts on emergency access and safety associated with design features.

MITIGATION MEASURES

No mitigation is required.



Source: Image prepared and provided by DKS Associates in 2019

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Plate TC-17: Existing Plus Alternative 2 Functionality Impacts

Table TC-38: Alternative 2 Functionality Impacts

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				Existing Plus Alternative 2)			
		From	To		Travel Lanes	Pavement (ft)	Substandard[1]?	Existing Volume	Travel Lanes	Substandard[1]?	Forecasted Volume	Functionality Impact[2]?
15	Douglas Rd	Mather Blvd	Zinfandel Dr	County	2	23	Yes	6,635	2	Yes	7,660	Yes
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	Rancho Cordova/ County	2	23	Yes	8,369	2	Yes	8,990	Yes
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	County	2	20	Yes	740	2	Yes	1,960	No
20	Eagles Nest Rd	Jackson Rd	Florin Rd	County	2	<21	Yes	517	2	Yes	1,650	No
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	County	2	<21	Yes	189	2	Yes	1,230	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	County	2	23	Yes	5,576	2	Yes	8,730	Yes
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	County	2	23	Yes	5,797	2	Yes	9,010	Yes
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	County	2	23	Yes	5,355	2	Yes	9,020	Yes
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	County	2	23	Yes	2,158	2	Yes	9,780	Yes
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	County	2	22	Yes	3,716	2	Yes	13,870	Yes
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	County	2	<21	Yes	5,075	2	Yes	15,650	Yes
32	Excelsior Rd	Elder Creek Rd	Florin Rd	County	2	<21	Yes	4,203	2	Yes	6,850	Yes
33	Excelsior Rd	Florin Rd	Gerber Rd	County	2	<21	Yes	5,423	2	Yes	7,580	Yes
34	Excelsior Rd	Gerber Rd	Calvine Rd	County	2	<21	Yes	4,229	2	Yes	5,350	No
39	Florin Rd	South Watt Ave	Hedge Ave	County	2	22	Yes	7,718	2	Yes	9,520	Yes
40	Florin Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	6,312	2	Yes	8,640	Yes
41	Florin Rd	Mayhew Rd	Bradshaw Rd	County	2	22	Yes	6,317	2	Yes	8,680	Yes
42	Florin Rd	Bradshaw Rd	Excelsior Rd	County	2	22	Yes	3,478	2	Yes	5,340	No
43	Florin Rd	Excelsior Rd	Sunrise Blvd	County	2	22	Yes	3,835	2	Yes	4,390	No
48	Fruitridge Rd	South Watt Ave	Hedge Ave	City of Sacramento/ County	2	22	Yes	2,890	2	Yes	2,560	No
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	1,790	2	Yes	1,190	No
50	Grant Line Rd	White Rock Rd	Douglas Rd	Rancho Cordova/ County	2	22	Yes	7,189	2	Yes	8,530	Yes
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	County	2	22	Yes	4,635	2	Yes	6,610	Yes

ID	Roadway	Segment		Jurisdiction	Existing Substandard Roadways				Existing Plus Alternative 2)			
		From	To		Travel Lanes	Pavement (ft)	Substandard[1]?	Existing Volume	Travel Lanes	Substandard[1]?	Forecasted Volume	Functionality Impact[2]?
59	Hedge Ave	Jackson Rd	Fruitridge Rd	County	2	22	Yes	3,061	2	Yes	2,570	No
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	City of Sacramento/ County	2	22	Yes	3,737	2	Yes	3,880	No
61	Hedge Ave	Elder Creek Rd	Florin Rd	County	2	22	Yes	2,722	2	Yes	2,990	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	County	2	26	Yes	13,030	2	Yes	26,390	Yes
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	County	2	26	Yes	10,478	4	No	32,560	Yes[3]
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	City of Sacramento/ County	2	22	Yes	4,616	2	Yes	4,770	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	County	2	22	Yes	4,618	2	Yes	5,580	No
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	County	2	22	Yes	656	2	Yes	1,940	No
83	Mather Blvd-Excelsior Rd[4]	Douglas Rd	Kiefer Blvd	County	2	22	Yes	6,751	2	Yes	8,680	Yes
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	County	2	22	Yes	1,616	2	Yes	990	No
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	Rancho Cordova/ County	2	20	Yes	2,490	2	Yes	2,410	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	County	2	<21	Yes	2,848	2	Yes	6,860	Yes

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.

[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.

Red text with light gray shading indicate project impacts.

Table TC-39: Alternative 2 Functionality Impacts with Mitigation

ID	Roadway	Segment		Existing (Alternative 2				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Substandard?[1]	Forecasted Volume	Functionality Impact?[2]		
15	Douglas Rd	Mather Blvd	Zinfandel Dr	2	Yes	7,660	Yes	Widen to County standards [5]	No
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	2	Yes	8,990	Yes	Widen to County standards [5]	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	2	Yes	8,730	Yes	Widen to County standards [5]	No
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	2	Yes	9,010	Yes	Widen to County standards [5]	No
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	2	Yes	9,020	Yes	Widen to County standards [5]	No
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	2	Yes	9,780	Yes	Widen to County standards [5]	No
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	2	Yes	13,870	Yes	Widen to County standards [5]	No
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	2	Yes	15,650	Yes	Widen to County standards [5]	No
32	Excelsior Rd	Elder Creek Rd	Florin Rd	2	Yes	6,850	Yes	Widen to County standards [5]	No
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Yes	7,580	Yes	Widen to County standards [5]	No
39	Florin Rd	South Watt Ave	Hedge Ave	2	Yes	9,520	Yes	Widen to County standards [5]	No
40	Florin Rd	Hedge Ave	Mayhew Rd	2	Yes	8,640	Yes	Widen to County standards [5]	No
41	Florin Rd	Mayhew Rd	Bradshaw Rd	2	Yes	8,680	Yes	Widen to County standards [5]	No
50	Grant Line Rd	White Rock Rd	Douglas Rd	2	Yes	8,530	Yes	Widen to County standards [5]	No
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	2	Yes	6,610	Yes	Widen to County standards [5]	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	2	Yes	26,390	Yes	Widen to County standards [5]	No

ID	Roadway	Segment		Existing (Alternative 2				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Substandard?[1]	Forecasted Volume	Functionality Impact?[2]		
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	4	No	32,560	Yes[3]	Widen to County standards [5]	No
83	Mather Blvd-Excelsior Rd[4]	Douglas Rd	Kiefer Blvd	2	Yes	8,680	Yes	Widen to County standards [5]	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	2	Yes	6,860	Yes	Widen to County standards [5]	No

Red text with light gray shading indicate project impacts.

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.

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.

21 SUMMARY OF IMPACTS AND THEIR DISPOSITION

SUMMARY OF IMPACTS BY SIGNIFICANCE DETERMINATION

The following provides a summary of the conclusions reached in the evaluation of the Project in Chapters 4 through 20 of this draft environmental impact report (EIR). For a tabulated summary of the effects of the Project and Alternative 2, applicable mitigation, and significance determinations, refer to Table ES-1 in the Executive Summary.

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 4 through 20 of this Draft EIR identifies significant impacts in aesthetics, agricultural resources, air quality, biological resources, hydrology and water quality, noise, and traffic and circulation that remain significant and unavoidable after mitigation.

AESTHETICS

DEGRADATION OF EXISTING VISUAL CHARACTER OR QUALITY

While the Project includes adoption of Design Guidelines and Development Standards (Appendices B and A of the Jackson Township Specific Plan, respectively) 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 character would be permanent and drastic, regardless of whether or not the new development community would be visually appealing. To sensitive viewer groups, particularly area residents, this could be perceived as a substantial degradation. Design guidelines and policies that would guide the visual characteristics of development are already required for the Project. The Project also includes a large open space preserve. No other feasible mitigation is available to reduce the magnitude of visual changes that would occur.

NEW SOURCES OF LIGHT

Although upward and spillover lighting would be minimized due to the strict lighting standards that would be adopted as part of the Project, implementation of the Project would introduce a substantial amount of new lighting to an area that is currently rural and largely unlit, thereby adversely affecting nighttime views of the Plan Area. Further, although it is anticipated that the Sacramento Raceway property would eventually be developed and converted to urban uses (which would reduce spillover lighting from that property), this parcel is currently a non-participating property that may remain in its current state during project buildout. The tall light standards that light the racetrack and buildings could have a negative effect on proposed land uses. There is no mitigation available to reduce this impact because the Project Applicant and the County do not have ownership control of the property.

Agricultural Resources

Convert Protected Onsite Farmland to Non-Agricultural Uses

Implementation of the Project would convert approximately 3 acres of Prime Farmland located near the center of the Plan Area, and 79 acres of Farmland of Local Importance to non-agricultural use. This represents roughly 11 percent of the average annual conversion of Important Farmland in Sacramento County. Implementation of Mitigation Measure AG-1 would require preservation of Farmland at a 1:1 ratio, consistent with Policy AG-5 of Sacramento County's 2030 General Plan. While this mitigation would require preservation of existing agricultural lands, but new agricultural soils will not be created. There would be a substantial net-loss of agricultural production within Sacramento County because of the Project.

Air Quality

Operational Emissions of Criteria Pollutants and Precursors

Development of the 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 an Air Quality Mitigation Plan (AQMP) which would be verified by the Sacramento Metropolitan Air Quality Management District (SMAQMD). To achieve the 35 percent reduction target, the plan would introduce traffic calming measures, electric vehicle infrastructure, building energy efficiency design features, and high efficiency appliances and lighting. However, emissions of ROG, NO_X, PM_{10}, and $PM_{2.5}$ could remain in exceedance of the SMAQMD mass emissions thresholds for operation. The Project and Alternative 2 are expected to generate emissions of NO_X and PM_{10} at levels above the applicable operational thresholds of significance following compliance with SMAQMD's AQMP requirement. No additional, feasible mitigation has been identified reduce these emissions to a level that would not exceed these criteria.

Projects that emit criteria air pollutants in exceedance of SMAQMDs thresholds would contribute to the regional degradation of air quality within the Plan Area that could result in adverse human health impacts. Acute exposure to criteria air pollutants can cause coughing, chest pain, shortness of breath, eye and throat irritation, lung scarring, and may aggravate preexisting cardiovascular and respiratory illness (e.g., asthma). Chronic exposure to criteria pollutants may result in permanent lung and heart impairment, chronic coughing, cancer, decreased immune function in children, and premature death. As explained in Chapter 6, "Air Quality," the scientific and regulatory community has not

yet developed a tool to map or locate where human health impacts may occur from implementation of the Project.

CONSISTENCY WITH AN APPLICABLE AIR QUALITY PLAN

The Clean Air Plan, or State Implementation Plan (SIP), for attaining the federal 1-hour ozone standard in the Sacramento Air Basin includes assumptions and allowances for growth and development in the region and details the control measures and Best Management Practices that must be used for the region to make progress toward attainment. The current SIP is based on the 2016 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS); however, the land use pattern in the 2016 and current MTP/SCS show the Plan Area as a "developing community" and "blueprint growth footprint not identified for development in the MTP/SCS planning period." Application of the provisions of Mitigation Measures AQ-1a and AQ-1b would reduce construction emissions to below SMAQMD's thresholds of significance; however, Mitigation Measure AQ-2 would not produce sufficient reductions in NO_X and PM_{10} such that the SMAQMD operational mass emissions thresholds would be met. Based on SMAQMD guidance, projects that emit criteria air pollutants and ozone precursors in exceedance of these thresholds would have a cumulatively considerable impact to regional air quality and would not be consistent with regional or statewide plans (e.g., SIP).

BIOLOGICAL RESOURCES

LOSS OF HABITAT FOR VERNAL POOL INVERTEBRATES

While the Project would avoid some vernal pools, swales and seasonal wetlands by including some of these features in the wetland preserve, the Project nonetheless would result in the loss of suitable and occupied vernal pool invertebrate habitat within the Plan Area, and death of federally listed vernal pool fairy shrimp and vernal pool tadpole shrimp in occupied habitat. While implementation of Mitigation Measure BR-1 would result in compensation for loss of habitat, it is unlikely that compensation would occur within the Mather Core Recovery Area or within designated critical habitat because there is a limited amount of habitat available in the core area and a large proportion of it has already been developed or is planned for development, or is already spoken for as mitigation for other planned development. There are currently no mitigation banks that service Sacramento County with credits available to fully cover the loss of habitat resulting from Project implementation.

Alternatively, the Project Applicant may seek and obtain coverage under the South Sacramento Habitat Conservation Plan (SSHCP), by implementing Mitigation Measure BR-2. This mitigation measure would reduce potentially significant impacts on vernal pool invertebrates to less than significant with mitigation because this measure would require the Project Applicant to participate in the SSHCP reserve system through fee payment or land dedication to offset habitat loss and implement onsite avoidance and minimization measures. The SSHCP, once fully implemented, would provide an alternative strategy to conservation and recovery of these species in the region, in a coordinated manner.

LOSS OF WETLANDS AND OTHER WATERS

The proposed Wetland Preserve is intended to allow for onsite compensation for some of the Project-related loss of onsite wetlands and waters. As part of the creation of the wetland preserve conservation easements would be placed over the preserve area to ensure that the area is set aside as a conservation area in perpetuity. Fill of wetlands and other waters within the Plan Area would constitute a substantial reduction in the quantity of wetlands and other waters in the region. Mitigation Measures would reduce impacts to wetlands and other waters, but perhaps not to a less-than-significant level. Permits for dredge and fill of wetlands and other waters would be acquired and the mitigation required by USACE would need to meet a no-net-loss standard for acreage. However, the loss of 41.38 acres of wetlands and 5.65 acres of other waters on Applicant-owned parcels and additional loss on non-participating properties is a substantial loss, especially when considered in the context of the regional rate and acreage of habitat losses. Creating compensatory wetlands cannot be guaranteed to fully replace the functions of wetlands lost and temporal losses would occur unless all impacts could be mitigated through purchase of fully functioning, established, in-kind wetlands from an approved mitigation bank. 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.

Alternatively, the Project Applicant may obtain coverage under the SSHCP and implement Mitigation Measure BR-2. Implementing Mitigation Measure BR-2 would result in mitigation of the loss of wetlands and other waters on Applicant-owned Parcels and additional loss on non-participating properties in the coordinated and interconnected SSHCP reserve system. By mitigating all project impacts on wetlands and other waters within the reserve system and meeting all Avoidance and Minimization Measures in the SSHCP, the impacts to wetlands and other waters would be reduced to less-than-significant with mitigation.

SOUTH SACRAMENTO HABITAT CONSERVATION PLAN CONSISTENCY

The Project could result in conflicts with the SSHCP should that Plan be implemented. Currently, the SSHCP has been adopted by the County and is being implemented. The Project is specifically addressed in the SSHCP (County of Sacramento et al. 2018) and approximately 225 acres of onsite preserve and a specific Avoidance and Minimization Measure related to changes to the channel of Elder Creek are identified as requirements for inclusion of the Project under the SSHCP. Furthermore, the proposed preserve in the Plan Area is part of Core Preserve C2 (County of Sacramento et al. 2018) which is a key part of the SSHCP Conservation Strategy. As proposed, the Project would include 214.3 acres of wetland preserve, which does not meet the 225 acres of preservation within the Plan Area that is part of the SSHCP Conservation Strategy. In addition, the Project would not strictly conform to the requirements for stream channel re-routing, widening, or deepening set forth in the SSHCP. However, Appendix K to the SSHCP includes a variance to Avoidance and Minimization Measure STREAM-5 for the Project that would also apply to these alternatives, and Mitigation Measures BR-18 through BR-20 would reduce this inconsistency by requiring permits from the appropriate regulatory agencies and the implementation of Avoidance and

Minimization Measures included in those permits. While implementation of Mitigation Measures BR-18 through BR-20 would reduce project inconsistencies with the SSHCP related to Elder Creek, the smaller preserve area would remain inconsistent with the SSHCP Conservation Strategy.

HYDROLOGY AND WATER QUALITY

FLOODING OF BEACH STONE LAKES

The Plan Area is located approximately 16 miles upstream of the Beach Stone Lakes (BSL area), within the Morrison Creek Stream Group that contributes runoff to the BSL area. An assessment of the Project's potential to exacerbate the existing flooding conditions indicates that the Project would result in a minimal increase in floodplain depth (less than 0.5 inch) that could potentially affect a small number of existing structures (12 total) in the BSL area. The County has adopted and levied the Beach Stone Lake Flood Volume Mitigation Fee to address the contribution of upstream projects to flooding impacts in the BSL area. Development projects in the Morrison Creek Stream Group are required to pay fees that fund the County's efforts in the area. Mitigation Measure HYD-4 requires payment into the County's BSL mitigation fund, which provides financial assistance to the programs the County has in place to reduce the cumulative flooding impact. However, flooding impacts may still occur in the BSL area.

NOISE

CONSTRUCTION NOISE

Construction activity associated with the development of land uses included in the Project, as well as Project-related infrastructure, would result in construction noise. Nighttime construction activity associated with project implementation could result in impacts to sensitive receptors. 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 activities comply with the County's noise standards. However, even with implementation of Mitigation Measure NOI-1, some construction activity could still exceed the County's construction noise standard of 50 L_{eq} dB and 70 L_{max} dB during nighttime hours (10:00 p.m. and 7:00 a.m). It is estimated that the noise level reductions achieved by this set of measures (i.e., up to 10 dB), specifically the restriction on the use of pile drivers during nighttime hours and use of temporary noise curtains, would result in construction noise levels as high as approximately 83 L_{eq} dB and 87 L_{max} dB at 25 feet. Such construction activity would exceed the County's construction exterior noise standard of 50 L_{eq} dB and 70 L_{max} dB during nighttime hours (10:00 p.m. and 7:00 a.m). In addition, based on the relationship between exterior and interior noise standards, interior noise standards would also be exceeded.

OPERATIONAL TRAFFIC NOISE

Project implementation would result in the generation of new vehicle trips from the development of new land uses in the Plan Area. Traffic noise levels along the section of Excelsior Road where traffic noise increases would exceed Sacramento County's transportation noise standard would increase from 61 dB L_{dn} under existing conditions to 66 dB L_{dn} under existing plus Project conditions. There are several sensitive receptors (single-family residential units) along this portion of Excelsior Road that would experience an increase in traffic noise levels above 65 dB L_{dn} as a result of project implementation.

Mitigation Measure NOI-3 could reduce traffic noise levels along affected roadways. However, it is not known whether the mitigation measure would fully reduce traffic noise levels along affected roadways to below Sacramento County's transportation noise standard of 65 dB L_{dn} because there is no guarantee that residents would accept the offer of a sound barrier. Mitigation Measures NOI-4 would reduce the traffic noise levels between 4 to 6 dB along this segment of Excelsior Road, resulting in a noise level of 60 to 62 dB L_{dn} and below Sacramento County's transportation noise standard of 65 dB L_{dn}. However, implementation of Mitigation Measures NOI-4 would occur during the next repaving of this roadway segment or during any roadway widening project that would occur on this roadway segment. As a result, the traffic noise impact occurring on this roadway segment (Excelsior Road between Jackson Road [also referred to as Jackson Highway] and Elder Creek Road) may occur before Mitigation Measures NOI-4 is implemented, resulting in an impact to sensitive receptors along this roadway segment.

STATIONARY NOISE SOURCES

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-16 in Chapter 2, "Project Description") provides the 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 that would include stationary equipment and/or new noise generating activity areas could be located in close proximity to existing and/or 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-7) during nighttime hours. As discussed, the Sacramento County Design Guidelines include design policies encouraging applicants to consider noise impacts in the siting of new loading docks and place loading docks away from residential areas, and use architectural and landscaping strategies to reduce noise impacts.

Mitigation Measure NOI-5 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. Mitigation Measure NOI-6 would serve to reduce exposure to existing sensitive receptors from proposed stationary noise sources including mechanical equipment and loading dock

areas through site design features and site-specific constraints from stationary noise sources. Mitigation Measure NOI-7 would require that noise-sensitive land uses that would be exposed to noise from the Sacramento Raceway above applicable standards be designed in such a way to reduce noise exposure to these land uses. However, it is not guaranteed that the site design of these land uses would reduce noise exposure from the Sacramento Raceway to the below the County's applicable standards. No additional feasible mitigation is available to reduce this impact.

SUBSTANTIAL INCREASE IN EXISTING AMBIENT NOISE LEVELS

Project land uses that 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. Implementation of Mitigation Measure NOI-8 would require the Project Applicant to offer the owners of residences along affected roadway segments 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 applicable to noise sensitive land uses along affected roadway segments. 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 sound barrier. Mitigation Measure NOI-9 would reduce incremental traffic noise level increases along affected roadways using rubberized asphalt. However, it is not known whether Mitigation Measure NOI-9 would reduce the incremental traffic noise increase on ambient noise levels.

TRAFFIC AND CIRCULATION

ROADWAY SEGMENT OPERATIONS

The Project would generate new vehicle trips and would exceed applicable level of service (LOS) and V/C thresholds along six roadway segments. 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, because their implementation is not subject to the responsibility of just the Project Applicant and/or the County, it cannot be guaranteed that significant impacts to roadway segments would be reduced to a less-than-significant level at the time of phased development.

INTERSECTION OPERATIONS

The addition of vehicle trips generated by Project buildout would result in the exceedance of applicable LOS and delay thresholds. Implementation of Mitigation Measures TR-1, TR-2, and TR-4 would result in fair share payments toward improvements that would reduce all roadway intersection impacts of the Project. However, because the timing of implementation of all required improvements cannot be guaranteed and their implementation is not subject to the responsibility of just Project Applicant and/or 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.

FREEWAY FACILITIES

Due to the addition of Project-related traffic to the freeway network, Westbound Watt Avenue to Howe Avenue weave would experience merge/diverge LOS worse than the freeway's LOS during the p.m. peak hour. Implementation of Mitigation Measure TR-5 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 are unknown at this time; thus, if implemented it cannot be assured that the implementation of Mitigation Measure TR-5 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.

ROADWAY FUNCTION

The Project would result in functionality impacts along 19 roadway segments within the Project study area. Implementation of Mitigation Measures TR-1, TR-2, and TR-8 would result in fair share payment toward improvements that would reduce the impacts of the Project. However, it cannot be guaranteed that all these improvements would be implemented concurrent with the phasing of development proposed for the 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 the Project Applicant and/or the County, it cannot be guaranteed that significant impacts to roadway functionality would be reduced to a less-than-significant at the time of development.

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.

AIR QUALITY

CONSTRUCTION EMISSIONS OF CRITERIA AIR POLLUTANTS AND PRECURSORS

Construction activities associated with the 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.

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 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 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.

AIRPORT COMPATIBILITY

SAFE AND EFFICIENT USE OF NAVIGABLE AIRSPACE

The Project includes standards and guidelines that encourage consistency with the CLUP. With implementation of Mitigation Measure AC-1, upon acceptance of completed applications for development within the Plan Area, the County would send the Project information to the ALUC for consistency review. Sacramento Area Council of Governments (SACOG) staff would identify the land use compatibility standards that apply to the project and determine whether the project is compatible, compatible subject to specific conditions, or incompatible. A formal consistency review would be subsequently transmitted to the County. If the project is determined to be incompatible with the CLUP, it cannot be approved by the County unless action is taken to overrule the ALUC determination. The overrule action is subject to the requirement for making specific findings. This review process would ensure that development would not interfere with the safe and efficient use of navigable air space.

Biological Resources

Special-Status Plants

Project implementation would result in removal of suitable vernal pool habitat for special-status vernal pool plants and Sanford's arrowhead. The loss of 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. However, the implementation of Mitigation Measures BR-3 and BR-4 would reduce impacts on special-status plants through survey, avoidance, or where avoidance is not feasible, transplantation or compensatory mitigation. In addition, should the Project Applicant seek and obtain coverage under the SSHCP, implementation of Mitigation Measure BR-2 would reduce impacts on special-status plants through survey and avoidance or compensatory mitigation on an established SSHCP Preserve.

Habitat for Valley Elderberry Longhorn Beetle

Elderberry shrubs are the host plant for valley elderberry longhorn beetle. No elderberry shrubs have been found on the Applicant-owned property; however, the non-participating properties have not been surveyed and elderberry shrubs may be present in those areas. Should elderberry shrubs occur on the non-participating properties, then future construction in this portion of the Plan Area could remove elderberry shrubs or result in decreased vigor of shrubs due to creation of dust during construction. The loss or decrease in vigor of elderberry shrubs may result in a further reduction in the population of valley elderberry longhorn beetle, which is currently listed as threatened under the ESA. However, implementation of Mitigation Measure BR-5 would reduce impacts on valley elderberry longhorn because surveys would be required, and elderberry shrubs would be avoided to the extent feasible, or compensation for loss of valley elderberry longhorn beetle habitat would be provided through USFWS-approved mitigation measures. Alternatively, the Project Applicant may obtain coverage under the SSHCP, as described in Mitigation Measure BR-2. Implementation of Mitigation Measure BR-2 would provide development fees or land dedication in accordance with that Plan and implement all Avoidance and Minimization Measures, thereby reducing impacts on valley elderberry longhorn beetle**.**

Burrowing Owls and Habitat

The potential presence of burrowing owl cannot be ruled out without protocol-level surveys. However, implementing Mitigation Measures BR-6 and BR-7 would reduce potentially significant impacts on burrowing owls because these measures would require that active burrows in or near the Plan Area 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. Alternatively, the Project Applicant may obtain coverage under the SSHCP, and implement Mitigation Measure BR-2, which would provide development fees or land dedication in accordance with that plan and implement all applicable Avoidance and Minimization Measures based on the

occurrence maps included in the SSHCP, including those specific to western burrowing owl. Therefore, the impacts on western burrowing owl would be reduced.

TRICOLORED BLACKBIRD NESTING AND FORAGING HABITAT

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. However, implementation of Mitigation Measure BR-8 would reduce potentially significant impacts on tricolored blackbird because this measure would require that active nests and nesting colonies in the project vicinity be identified and avoided or monitored during the nesting season so that project construction would not result in nest abandonment and loss of eggs or young. Alternatively, the Project Applicant may obtain coverage under the SSHCP, and implement Mitigation Measure BR-2, which would also reduce impacts.

SWAINSON'S HAWK FORAGING HABITAT

The loss of Swainson's hawk foraging habitat would contribute to the continuing loss of valuable habitat from a core population center in the Sacramento Valley and further decline of a species that is listed as threatened under CESA. Implementation of Mitigation Measures BR-9 and BR-10 would reduce potentially significant impacts on Swainson's hawk foraging habitat. Alternatively, the Project Applicant may obtain coverage under the SSHCP, and implement Mitigation Measure BR-2. Implementation of Mitigation Measure BR-2 would reduce impacts on Swainson's hawk, because participation in the SSHCP would result in preservation of Swainson's hawk foraging habitat in a coordinated and interconnected SSHCP reserve system that considers the species requirements at a regional scale rather than, project-by-project, and presents a coordinated conservation strategy to maintain species viability in the region over the long term.

SWAINSON'S HAWK NESTING HABITAT

Preconstruction surveys will be required to determine if there are nesting Swainson's hawks within 0.25 mile of the proposed development area. The purpose of the survey requirement is to ensure that construction activities do not agitate nesting hawks, potentially resulting in nest abandonment or other harm to nesting success. Alternatively, the Project Applicant may obtain coverage for the Project under the SSHCP and implement Mitigation Measure BR-2. Mitigation Measure BR-2, described above, would result in preservation of Swainson's hawk nesting and foraging habitat in a coordinated and interconnected SSHCP reserve system that considers the species requirements at a regional scale rather than, project-by-project, and presents a coordinated conservation strategy to maintain species viability in the region over the long term. The SSHCP conservation strategy includes surveys, nest buffers, and monitoring that would meet the requirements for CDFW to issue an incidental take permit for the project.

OTHER SPECIAL-STATUS BIRD NESTS

Cooper's hawk, white-tailed kite, grasshopper sparrow, song sparrow (Modesto population), yellow-headed blackbird, northern harrier, and loggerhead shrike are not known to nest in the Plan Area; however, these species have a moderate to high potential for occurrence in the Plan Area because suitable nesting and foraging habitat are present. Project construction could remove or disturb active nests of special-status birds potentially resulting in nest abandonment by the adults and mortality of chicks and eggs. Loss of chicks and eggs of these special-status species could reduce population levels and contribute to a trend toward these species becoming threatened or endangered in the future, which would be a potentially significant impact. However, implementation of Mitigation Measures BR-12 and BR-13 would reduce potentially significant impacts on special-status bird nests 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. Alternatively, the Project Applicant may choose to mitigate impacts to Cooper's hawk, white-tailed kite, northern harrier, or loggerhead shrike under the SSHCP (Mitigation Measure BR-2) and avoid loss of active nests of these species and death of individuals. Mitigation Measure BR-2 would require development fees or land dedication in accordance with that Plan and implementation of all applicable Avoidance and Minimization Measures based on the occurrence maps included in the SSHCP, including those specific to Cooper's hawk, white-tailed kite, northern harrier, and loggerhead shrike. Implementation of Mitigation Measure BR-2 would be in addition to implementing Mitigation Measure BR-12 for impacts to grasshopper sparrow, song sparrow (Modesto population) and yellow-headed blackbird which are not a SSHCP covered species.

FORAGING HABITAT FOR OTHER SPECIAL-STATUS BIRDS

The Project has the potential to remove foraging habitat for the grasshopper sparrow, song sparrow (Modesto population), yellow-headed blackbird, loggerhead shrike, Cooper's hawk, ferruginous hawk, white-tailed kite, and northern harrier. The Project would result in the loss of 516.7 acres of suitable foraging habitat on Applicant-owned parcels. Should any part of the remaining AG-80 land (219 acres) be rezoned in the future, that rezoning will also result in loss of foraging habitat for these species. Although, the Project would result in loss of foraging habitat, the Project Applicant is also proposing a 214.3-acre wetland preserve on a portion of the Plan Area. The development of the Plan Area would result in substantial negative effects to the sustainability of these species and, thus, impacts to the foraging habitat of special-status birds are potentially significant. With the onsite preserve and the implementation of Mitigation Measures BR-9 and BR-10, 68 percent of the Plan Area (950 acres out of 1,391 acres) would either be preserved, or the loss would be compensated with in-kind habitat. Alternatively, the Project Applicant may obtain coverage under the SSHCP, and implement Mitigation Measure BR-2, which would reduce impacts by requiring development fees or land dedication in accordance with the SSHCP and implementation of all Avoidance and Minimization Measures.

COMMON RAPTOR AND OTHER COMMON BIRD NESTS

The Plan Area provides suitable nesting habitat for many common raptors and other common nesting birds. Construction activities may impact nesting raptors and other common nesting birds if they occur in the Plan Area. Construction activities may also disturb raptor nests that occur within 500 feet of the Plan Area. Project construction could remove or disturb active nests, potentially resulting in nest abandonment by the adults and mortality of chicks and eggs. While loss of nests of common bird or raptor species (e.g., mourning dove, house sparrow, American kestrel, and barn owl) would not be considered a significant impact because it would not result in a substantial effect on their populations locally or regionally, cause any population to drop below self-sustaining levels, or result in a trend toward these species being listed as threatened or endangered, destruction of any bird nest is a violation of the Section 3503 of the California Fish and Game Code. Implementation of Mitigation Measures BR-12 and BR-13 would require the preconstruction nest surveys, prohibit the removal of trees during the breeding season for nesting birds unless a survey by a qualified biologist verifies that there is not an active nest in the tree, and implement buffers around nests which would reduce potentially significant impacts on nesting birds 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. Should the Project Applicant seek and obtain coverage under the SSHCP, the Project Applicant would implement Mitigation Measure BR-2 and all relevant Avoidance and Minimization Measures. Implementation of Mitigation Measure BR-2 would be in addition to implementing BR-12 and BR-13 for impacts to common raptors and other birds that are not SSHCP covered species. By implementing Mitigation Measures BR-2, BR-12, and BR-13, impacts to common raptors and other common nesting birds would be reduced.

AMERICAN BADGER DENS

Annual grassland throughout the Plan Area represents suitable habitat for American badger and although the potential for their occurrence in the Plan Area is low, nearby occurrences (Sacramento County 2014) indicate that there is suitable habitat present. And thus, there is 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 to decrease survival or reproduction of the species in the area because the completed Project would contain a large, contiguous wetland preserve in an area of suitable habitat for badger. In the existing condition, this preserve is connected to other open space areas, and would therefore allow continued use of the site by badgers. Loss of individuals within the Plan Area could diminish the local population of this species and lower reproductive potential, which could contribute to further declines. However, implementation of Mitigation Measure BR-14 would reduce potentially significant impacts on American badger because this measure requires that active dens in the construction area or vicinity be identified, avoided, and monitored so that Project construction would not result in abandonment of young or direct mortality of individuals.

SPECIAL-STATUS BAT ROOSTS

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. Implementation of Mitigation Measure BR-15 would reduce potentially significant impacts on special-status bats 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. Alternatively, the Project Applicant may obtain coverage under the SSHCP and implement Mitigation Measure BR-2. Mitigation Measure BR-2 would require development fees or land dedication in accordance with that Plan and implementation of all Avoidance and Minimization Measures including those specific to special-status bat roosts if modeled habitat for these species exist within the Plan Area.

WESTERN POND TURTLE HABITAT AND INDIVIDUALS

Suitable habitat for western pond turtle within the Plan Area consists of the perennial marsh areas, the large irrigation pond along Tree View Road, and surrounding uplands. Although the potential for western pond turtle to occur is low due to lack of hydrologic connection to known occupied habitat, the species may use the aquatic habitat onsite for foraging and nest in the uplands surrounding these features. Construction activities would result in fill of suitable aquatic habitat and potentially crush, bury, or disturb western pond turtles, or their nests, which would result in mortality of individual turtles and loss of reproduction should western pond turtles be present and nesting onsite. The loss of aquatic habitat and nests of western pond turtle due to construction activities would further reduce the population of this species in the region. However, implementation of Mitigation Measures BR-18 and BR-16 would reduce potentially significant impacts on western pond turtle because these measures require compensation for loss of aquatic habitat, surveys for western pond turtles, and relocation of individuals from the Plan Area if needed to avoid killing or harming them. Alternatively, the Project Applicant may obtain coverage under the SSHCP and implement Mitigation Measure BR-2. Mitigation Measure BR-2 would require development fees or land dedication in accordance with that Plan and implementation of all Avoidance and Minimization Measures including those specific to western pond turtles if modeled habitat for this species exists within the Plan Area**.**

WESTERN SPADEFOOT HABITAT AND INDIVIDUALS

In addition to the direct removal of habitat and loss of individuals, implementation of the Project could result in indirect impacts on western spadefoot as well. Potential indirect effects on individuals may include; 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. Indirect effects on western spadefoot habitat retained in the Plan Area preserve could result in habitat degradation

leading to lower reproductive success of western spadefoot, and eventual elimination of this species from the affected habitat. These indirect effects could include, reduction in water quality and altered hydrology, litter and dumping, and introduction of invasive plant species.

Direct and indirect impacts to western spadefoot would be potentially significant, because these effects could reduce local population 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. However, implementation of Mitigation Measures BR-1 and BR-17 would reduce potentially significant impacts on western spadefoot because these measures would require compensatory mitigation for loss of aquatic habitat, surveys, and a creation of a CDFW-approved relocation plan.

DISTURBANCE OF RIPARIAN HABITATS

Elder Creek, Morrison Creek, and three unnamed streams run through the Plan Area. These streams do not support riparian vegetation corridors within the Plan Area. While typical riparian tree species, black willow, black walnut, California sycamore, and Fremont cottonwood do not occur in association with the creeks and streams on the Plan Area, these tree species occur in the Plan Area in association with the large irrigation pond and other small ponds. The banks of these ponds may support additional riparian species and function as riparian habitats. These ponds would be subject to disturbance from construction, and the removal of any riparian habitat that may occur would be a potentially significant impact. However, implementation of Mitigation Measure BR-21 would reduce potentially significant impacts on riparian habitat because this measure would require the Project Applicant to notify CDFW should activities have the potential to disturb the bed, bank, or associated riparian vegetation of any stream or pond on the Plan Area and comply with any mitigation required of a Streambed Alteration Agreement at a minimum 1:1 ratio.

LOSS OF NATIVE TREES

Implementation of the Project has the potential to result in the removal or encroachment within some or all native tree resources within the Plan Area, although the specific development and building footprints are unknown at this time. With the implementation of Specific Plan Policy 7.2.3, native trees would be preserved where feasible and non-native trees determined to be a potential fire hazard or high-VOC emitting species, such as eucalyptus, would be removed. Nonetheless, this analysis assumes that future grading and development would likely result in removal or mortality of most if not all trees in the Plan Area. However, considering specific parcel development plans are not part of the Project and tree health and size at the time of such development could be different than what was assessed in 2015, impacts on native trees associated with development cannot be definitively determined at this time. However, implementation of Mitigation Measures BR-22 would reduce potentially significant impacts on native trees because this measure would require the Project Applicant implement measures to protect native trees to be retained and provide compensation for native trees removed from the Plan Area.

CLIMATE CHANGE

PROJECT GREENHOUSE GAS 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. These levels of emissions also indicate that the Project would not be consistent with Sacramento County's CAP. Mitigation Measure CC-1a would require the use of on-site GHG reduction measures, including participation in an enhanced transit program and use of energy efficient boilers, residential electric hot water heaters; high efficacy public outdoor lighting, and energy efficient appliances. Mitigation Measure CC-1b would require that the Project Applicant develop a Project-specific GHGRP and/or other feasible, on-site GHG reduction mitigation measures sufficient to reduce operational GHG emissions to Sacramento County's per capita thresholds of significance for residential and nonresidential energy, and transportation. Application of Mitigation Measure CC-1b would provide the reductions required to meet the applicable thresholds of significance and, therefore, would reduce the Project's contribution to global climate change.

CULTURAL RESOURCES

CAUSE A SUBSTANTIAL ADVERSE CHANGE TO HISTORICAL RESOURCES

Impacts to unevaluated resources within the 25-acre parcel added to the APE, and unknown resources within non-participating properties would be potentially significant, and further evaluation would be required. Implementation of Mitigation Measure CR-1 would reduce potentially significant impacts to historic resources because actions would be taken to record, evaluate, avoid, or otherwise treat the resource appropriately, in accordance with pertinent laws and regulations

CAUSE A SUBSTANTIAL CHANGE TO ARCHAEOLOGICAL RESOURCES

No unique archaeological resources were identified as a result of studies conducted in the Excelsior Estates APE; however, there is the potential that ground disturbance during Project construction could encounter previously undiscovered or unrecorded archaeological sites and materials. Further, the non-participating areas have not been subject to archaeological survey. Given that previous artifacts have been discovered in the area, it is possible that buried archaeological materials are present within the remainder of the Plan Area. Such resources could be uncovered and damaged during ground disturbing activities associated with development. Implementation of Mitigation Measure CR-2 would reduce impacts associated with archaeological resources because it would require the performance of professionally accepted and legally compliant procedures for the discovery and protection of previously undocumented significant archaeological resources.

Geology, Soils, and Mineral Resources

Buried Paleontological Resources

Construction of the 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.

Hazardous Materials

Release of Hazardous Materials from Undocumented or Documented Sites of Contamination

Existing contamination may be associated with the Sacramento Raceway and debris piles documented along Kiefer Boulevard. In addition, while all properties within the Plan Area were included in the Phase I ESA, only properties owned by the Project Applicant were accessed during the site reconnaissance, so it is possible that hazardous conditions may be present on other properties that were not observed during the study. Further, build-up of agricultural chemicals and potential for fuel tanks constitutes a risk during ground disturbance. These portions of the Plan Area require further investigation.

With enforcement of the mitigation measures and adherence to existing hazardous materials regulations, impacts from any existing hazardous materials would be minimized. Mitigation Measure HM-1 would require preparation of Phase I ESAs for all non-participating properties and the full implementation of all recommendations. Mitigation Measure HM-2 requires the preparation of Phase II ESAs with soil and groundwater sampling for all properties, including Applicant-owned properties, based on the findings and recommendation of the Phase I ESA, which determined that soil and groundwater contamination may be present within the Plan Area. Mitigation Measure HM-3 would establish a hazardous materials contingency plan to address potential soil and groundwater contamination, if discovered during construction activities.

Hydrology and Water Quality

Alteration of the Existing Drainage Pattern

The Project would increase runoff in the Plan Area because of the introduction of impervious surfaces. With the implementation of the drainage plan and associated basins, there would be a quantifiable decrease in overall offsite flows for both Elder Creek and Morrison Creek and the Project would provide onsite stormwater treatment. In addition, the Project would comply with the County's Hydrograph Management Plan (HMP). The Drainage Master Plan assumed sample LID practices to meet the HMP criteria, based on land use (see Appendix HYD-1). Mitigation Measure HYD-1a would ensure that the Project would be required to demonstrate that the design features described would mitigate for the development's potential effects on water quality.

FLOODING WITHIN THE PLAN AREA

There is floodplain the northeast and southwest corners of the Plan Area. The Drainage Master Plan analyzed the efficacy of the proposed drainage infrastructure for the entire Project and demonstrated that no flooding impacts would occur with full buildout. However, it remains uncertain at this time whether the drainage infrastructure improvements would be constructed in phases, and whether non-participating property owners would grant permission for improvements on their property. Before any modifications to the existing floodplain, approval of a CLOMR from FEMA will be required. In-kind replacement for any loss in flood storage capacity due to floodplain modifications must be provided to prevent downstream flooding impacts consistent with the applicable General Plan and Community Plan policies. Mitigation Measure HYD-2 is included to address this impact.

NOISE

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.

PUBLIC SERVICES

PARKS

Parkland dedication currently proposed within the Plan Area would be slightly deficient and would require the dedication of an additional 0.8 acre of parkland to meet dedication requirements. Mitigation Measure PS-1 requires that the developer of the future projects in the Plan Area either dedicate park acreage to meet the individual parkland requirements for that project (as indicated by Title 22 of the Sacramento County Code), or pay in lieu fees equivalent to any shortfalls in parkland dedication to provide for the acquisition and development of park facilities located within other areas of the Plan Area. Implementation of this measure would provide adequate park and recreation services.

TRAFFIC AND CIRCULATION

BICYCLE AND PEDESTRIAN FACILITIES

The Project would not remove any existing or planned bicycle or pedestrian facilities. Additionally, the 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 Project vicinity in conformance

with County design standards. Additionally, circulation and access to all proposed public spaces would include sidewalks that meet Americans with Disabilities Act standards. Mitigation would require coordination with the County to ensure bicycle and pedestrian safety.

Effects Found Not to be Significant

The following impacts were determined to be less than significant upon being evaluated in the Draft EIR.

Aesthetics

New Sources of Glare

Both the proposed Development Standards (Appendix A of the Jackson Township Specific Plan) and the County Zoning Code (Section 3.6.6.C) require that all PV panels are oriented on rooftops or other hardscape areas to avoid unreasonable glare from solar panels onto adjacent properties. This, combined with the absorbing design of solar panels, would ensure that solar PV panels on buildings and building materials (e.g., glass, paint) developed within the Plan Area would not result in conditions that would create major new sources of glare.

Agricultural Resources

Conflict with Existing, Adjacent Agricultural Use and Zoning

Within the Plan Area some of the non-participating properties are zoned as AG-80 (see Plate PD-7 in Chapter 2, “Project Description”). However, most are smaller than 80 acres in size, and, therefore, cannot accommodate intensive agricultural operations that tend to be associated with major nuisances such as those listed above. The current agricultural operations on the non-participating properties are limited and include mostly small agricultural residential lots, a strawberry farm, and an apiary. Furthermore, most of the land currently used for grazing within the Plan Area is owned by the Project Applicant and would be developed as part of the Project.

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 Project would not generate enough vehicle trips to create an impact related to this criterion.

Airport Compatibility

Safety Hazards

The Mather Airport CLUP establishes airport safety zones to minimize the number of people exposed to aircraft crash hazards. There are no portions of the Plan Area

located in the Clear Zone or the Approach/Departure Zone. According to the CLUP, a portion (42 percent) of the Plan Area is located within the Overflight Zone, which is the least restrictive on land use development (refer to Plate AC-1). Proposed land uses within the Overflight Zone include low, medium, and high density residential; a portion of the wetland preserve, five park sites, two greenbelts, two schools, the joint high school/middle school site, the Village Center, and other commercial uses. The school sites would be subject to the review detailed in the Education Code. The Town Center and all industrial uses would be located outside of the Overflight zone. None of the restricted uses cited in the CLUP land use compatibility table are proposed within the area located within the Overflight Zone.

EXPOSURE TO EXCESSIVE NOISE LEVELS

The Plan Area is approximately 1 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 to include noise insulation that reduces interior noise levels to 45 dB CNEL or less. General Plan Policy NO-4 reiterates this APPA requirement. This condition has been placed on the Project as a condition of approval to ensure it is adhered to.

BIOLOGICAL RESOURCES

INTERFERENCE WITH THE MOVEMENT OF ANY NATIVE RESIDENT OR MIGRATORY SPECIES

The Plan Area is located adjacent to the existing Mather Preserve to the north and other undeveloped open space to the south and east. The Plan Area may support movement of terrestrial and aquatic species to and from these areas. The Project would include approximately 214.3 acres of wetland preserve to the SSHCP preserve system that would allow continued movement of species between these existing preserves and undeveloped open space through the Plan Area. Therefore, the Project would not interfere substantially with the movement of native resident or migratory species.

LOSS OF NON-NATIVE TREE CANOPY

The Biological Resources Assessment states that the Plan Area has 1.75 total acres of tree canopy that would need to be replaced pursuant to Policy CO-145. The Countywide Design Guidelines, in general, require the planting of new trees in all new single-family lots, commercial buildings, parking lots, and street frontages. In general, these planting requirements are enough to equal the amount of canopy lost. The Design Guidelines for the Project are in line with the Countywide Design Guidelines. Using the smallest shade-valued tree on the County's 15-year shade tree list (15–20 foot diameter tree = 314 square feet [sq. ft.] of shade/canopy), and applying one of the many Countywide Design Guidelines regarding vegetation (one shade tree planted on every single-family lot) the total canopy acreage would amount to 16.7 acres (2,314 dwelling units (<RD-7) x 314 sq. ft./ 43,560 sq. ft. per acre). This is nine times what would be removed for development and does not consider tree plantings in landscape frontages, commercial lots, and medium and high-density residential units.

Cultural Resources

Disturb Human Remains

No human remains are known to be present within the Plan Area. However, it is possible that buried human remains could be located within the areas that have not been identified due to a lack of surficial evidence, and it is possible that human remains, particularly those outside a designated cemetery, may be encountered and disturbed during ground-disturbing construction activities related to development and implementation of the Project. Compliance with California Health and Safety Code Sections 7050.5 and 7052 and PRC Section 5097, which requires avoidance or minimization of disturbance of human remains, and appropriate treatment of any remains that are discovered would address this potential Project effect.

Tribal Cultural Resources

Compliance with PRC Sections 21074, 21080.3.1, 21080.3.2, and 21082.3 would address potential effects on TCRs as defined in PRC Section 21074.

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 Project and Alternative 2 would incorporate energy conservation measures to reduce building energy consumption and vehicle miles traveled.

Plans for renewable energy or energy efficiency

The Project would be consistent with local policies to remain energy efficient and use renewable energy. The Project would also remain consistent with State policies related to energy efficiency and renewable energy. Through the permitting process, all development projects which are constructed in the Plan Area would comply with the current and future versions of the State's Building Energy Efficiency Standards. Because electricity utilities in the state are required to increase the percentage of renewable energy sources in the electricity they provide, over time electricity consumed as part of the Project will increasingly be provided by renewable sources.

Geology, Soils, and Mineral Resources

Soil Erosion, Siltation, or Loss of Topsoil

The Project would 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 Project would also comply with the NPDES General Construction Permit, which requires that any construction activity affecting 1 acre or more implement a SWPPP, which identifies BMPs to reduce construction effects on receiving water quality. In compliance with these regulations, any development related to the Project would be subject to erosion and sediment control measures. As such, the Project would not result in substantial soil erosion or the loss of topsoil.

EXACERBATION OF EXPOSURE TO HAZARDS ASSOCIATED WITH EXPANSIVE SOILS

Any project-related development would need to adhere to the existing UBC and CBC, which would ensure the maximum necessary protection available for development within areas known to contain expansive soils. Therefore, implementation of the Project would not exacerbate any risk to life or property form impacts related to expansive soils.

HAZARDOUS MATERIALS

ACCIDENTAL RELEASE DURING CONSTRUCTION OR OPERATION

Construction activities would occur within the 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 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.

HAZARDS NEAR SCHOOLS

There are no existing schools within 0.25 mile of the Plan Area. However, four new schools are proposed as part of the Project: a joint high school and middle school campus near the northeast corner of the Plan Area and three elementary schools throughout the Plan Area, one of which would be located on the Sacramento Raceway property. The school sites would generally be surrounded by commercial, mixed-use, and residential development; no industrial land use is proposed in the Plan Area. The routine transport, use, and disposal of hazardous materials during construction and operation of the Project are not anticipated to generate a substantial hazard.

INTERFERE WITH AN ADOPTED EMERGENCY RESPONSE PLAN OR EMERGENCY EVACUATION PLAN

Although the Project would result a new population of residents and employees in an area of the county that does not currently support these types of dense land patterns, the Project is not anticipated to impair the implementation of existing emergency response or evacuation plans. This is because the buildout of the Project would be gradual, over a roughly 20-year period, and the County's emergency plans are adaptive. Further, it is anticipated that these plans would be updated to reflect changes in land use patterns. The potential for construction activities or development to impair implementation of, or physically interfere with, an adopted emergency response plan or emergency evacuation plan would be low.

WILDLAND FIRES

The Plan area is not in a State Response Area or Very High Fire Hazards Severity Zone. New construction is subject to the CFC and Title 14 of the CCR, which includes safety measures to minimize the threat of fire. Further, as required by Policy SA-23 in the Sacramento County General Plan, plans for specific facilities 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. Therefore, future development within the Plan Area would not be exposed to significant risks of wildfire.

HYDROLOGY AND WATER QUALITY

WATER QUALITY STANDARDS

The 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 streams that are used for recreation, wildlife habitat, and drinking. Implementation of best management practices that would result in control measures to remove pollutants before entering the stormwater system, such as vegetated swales and water quality detention basins, would allow pollutants to settle out prior to discharge. Compliance with the County Stormwater Ordinance, implementation of LID Standards, and implementation of the Drainage Master Plan would ensure that development of the Project would not alter the course of local waterways in a manner that would not cause violation of a water quality standard or waste discharge requirement and would not result in substantial increases to polluted runoff.

FLOODING DUE TO DAM OR LEVEE FAILURE

The closest dam to the Project is Mather Dam, which provides flood control to Mather Lake. This dam was recently renovated and the volume of water that would reach the

Plan Area is unlikely to present a substantial risk of loss, injury, or death because of the volume of water stored in the dam, the distance from the Plan Area, and the flat intervening topography over which flood waters would disperse. Folsom Dam is approximately 12 miles north of the Plan Area. 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 because of dam failure would be minimized.

Public Services

Fire Protection and Emergency Services

The Project would increase the demand for Metro Fire protection and emergency services. This increase in demand would require additional staff and fire facilities to maintain service levels and to ensure that adequate fire protection is provided. Land within the Plan Area would be dedicated to Metro Fire as a part of the Project. This fire station would serve the entirety of the Plan Area, and no other fire protection or emergency services facilities would be required to serve the Project. Because this facility is located within the Plan Area, the environmental impacts associated with the development of this facility are evaluated throughout this EIR. No additional off-site facilities would be needed.

Emergency Response

Cellular 911 calls are routed to Metro Fire dispatch through the local California Highway Patrol office, which has a high success rate of accurately identifying the location of an incident to direct the call to the appropriate emergency responder. Most cases where locations are confused are primarily due to similar street names in different communities within an emergency responder's jurisdiction, rather than similar community names. County staff also spoke with staff from the Sacramento Regional Fire/EMS Communications Center (SRFECC), which is responsible for answering and directing 911 calls to appropriate agencies in the Sacramento region. Based on the distance between the Plan Area and the City of Jackson and dispatchers' extensive training to determine appropriate locations of incidents, SRFECC staff did not feel that the name of the Project would result in confusion of and resultant impacts on emergency responders (Quintard, pers. comm., 2017). Based on the emergency responders' opinions that the Project's name would not result delays to emergency response.

Provision of Law Enforcement

The Project includes a maximum of 6,143 residential units which, according to the proposed Specific Plan, would provide housing for an estimated 16,955 new residents within the Plan Area, as well as non-residential users. This would increase demand for law enforcement services within the Plan Area. 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 Plan Area and the surrounding areas. Law enforcement services would be funded through the County Police Services Community Facilities District 2005-1 (CFD 2005-1) annual special tax that would be levied on each new residential unit developed with in the Plan 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.

SCHOOL SERVICES

The 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 four school sites, which would exceed the demand generated by the Project. Construction of these schools would not result in any substantial physical impacts specific to public services that are not already an inherent part of overall Project impacts.

LIBRARIES

The Project would not increase demand on library services beyond existing capacity. In addition, the Project includes a funding mechanism through the public facilities fee program for library upgrades to accommodate the expected population of the Project. This would allow the SPLS to implement the Library Master Plan, which accommodates planned growth in the surrounding area. Therefore, the Project would not result in substantial adverse physical impacts associated with the provision of library services.

WATER SUPPLY

WATER INFRASTRUCTURE

SWCA has identified a backbone system that includes the minimum offsite and onsite water transmission improvements needed to serve the Project (see Plates WS-5 and WS-6). SCWA's Water System Infrastructure Plan includes anticipated demand from the Project and demonstrates that the Project could be served by this planned infrastructure. Future expansion and implementation of planned projects in the NSA would be conducted by SCWA and would be subject to separate environmental review and approval. Development of onsite 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. Construction of onsite water supply infrastructure would not result in utility-specific adverse physical impacts.

WATER DEMAND

The Project includes a Water Supply Master Plan Amendment to modify the existing Zone 40 Water Supply Master Plan so that it includes provision of water service to the Jackson Township Specific Plan Area. The amendment addresses the water demands

and infrastructure necessary to service the Project and requires approval from the Sacramento County Water Agency Board of Directors (see Appendix WS-3). The Jackson Township Potable Water System Study (Stantec 2017) provides a detailed analysis of the water distribution system and verifies the base information in the WSMP Amendment prepared by SCWA.

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 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.

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 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 Project includes an open space preserve and open space along drainage corridors and stormwater management basins that which would allow for the percolation of stormwater.

WASTEWATER AND SOLID WASTE

WASTEWATER TREATMENT AND DISPOSAL INFRASTRUCTURE

The anticipated demand for sewer services and proposed on- and offsite wastewater infrastructure would be consistent with regional projections developed by SASD and Project-specific sanitary sewer plans have been reviewed and approved by SASD. Implementation of the mitigation measures identified throughout this EIR and compliance with the County Code would address areas of potential effects associated with the offsite construction of the Jackson Road trunk lines and would reduce the potential for adverse effects associated with the construction of offsite wastewater infrastructure.

EXCEED THE CAPACITY OF THE WASTEWATER TREATMENT PROVIDER

As discussed above, the SRWTP is permitted to treat an ADWF of 181 mgd and a daily peak wet weather flow of 392 mgd; the SRWTP currently receives and treats approximately 141 mgd (Sacramento County 2010). The Project would increase the existing treatment plant flows from 141 mgd to roughly 147 mgd (assuming a peak

weather wet flow of 5.96 mgd), which is well within the SRWTP's existing 181 mgd capacity. Therefore, it is anticipated that the SRWTP would have adequate capacity to treat wastewater flows generated by future development.

SOLID WASTE SERVICES AND LANDFILL CAPACITY

Based on the available capacity of Kiefer Landfill, the portion of the permitted capacity that the Project is estimated to require, and the estimated closure date for the landfill, the Project would be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs. Commercial and industrial waste generated by the Project would be collected by franchise haulers and may be transported to landfills outside of the county.

TRANSPORTATION AND CIRCULATION

TRANSIT

Public transit is not currently provided to, or near the Plan Area. A conceptual transit system to serve the Jackson Corridor Projects (including the Jackson Township Project) has been 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 systems would be a condition of approval for the Project and was assumed as an attribute of the Project that was 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 Project, and service would be phased as described in Chapter 2, "Project Description."

EMERGENCY ACCESS AND HAZARDOUS DESIGN FEATURES

The Project would provide new roadway connections, which would provide for improved emergency access and connections within the area. The Project would be designed to meet all the design and safety standards established by the County which requires coordination with Sacramento Metro Fire District to ensure that the design of local roads would 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, 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.

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 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 913 acres of the Plan Area. The remaining 477 acres of the Plan Area would be maintained as a combination of natural preserve, drainage, parks, agriculture, and landscape buffers. Under Alternative 2, 483 acres of the Plan Area would be maintained as a combination of natural preserve, drainage, parks, agriculture, and landscape buffers and the remaining 908 acres would irreversibly commit future generations to urban land uses.

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. Although there is an established mineral resources overlay in the zoning within the Plan Area, the presence of mineral resources is not established for the Plan Area. As such, developing the property would not result in loss of access to mineral resources. Implementation of the Project would convert approximately 3 acres of Prime Farmland located near the center of the Plan Area, and 79 acres of Farmland of Local Importance to non-agricultural use. This represents roughly 11 percent of the average annual conversion of Important Farmland in Sacramento County (see Table AG-1).

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 SACOG’s 2016 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 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: the NewBridge Specific Plan, Mather South Community Master Plan, and West Jackson Highway Master Plan. Table SI-1, below, includes a brief description of the projects considered in this cumulative analysis.

Table SI-1 Cumulative Project List

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 Airport Master Plan	10425 Norden Ave, Mather, CA	Establishes a program for modifications of existing facilities and development of new facilities through 2035	Approved 2014, 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 Jackson Road	1,095 acres	In Process
8	Mather South Community Master Plan	Eastern Sacramento County along Jackson Road	884 acres located northeast of the Plan Area	In Process
9	West Jackson Highway Master Plan	Eastern Sacramento County along Jackson Road	5,900 acres east of South Watt Avenue, north of Elder Creek Road, south of Kiefer Boulevard, and west of Excelsior Road	In Process
10	Capital SouthEast	Link I-5 and Highway 99	Designed to provide congestion relief	Preliminary design

Project Number	Project Name	Location	Description	Status
	Connector Expressway	South of Elk Grove to Highway 50 East of El Dorado Hills		
11	Stoneridge Quarry	Eastern Sacramento County south of Highway 50	Quarry mining and processing of materials on 619 acres of a 1,360-acre property	Approved 2011
12	Teichert Quarry	Eastern Sacramento County south of Highway 50	Quarry mining and operation of a processing plant on 380 acres of a 584-acre property for 25 years	Approved 2010
13	Milgate Quarry	Eastern Sacramento County south of Highway 50	Quarry mining on 194 acres for 50 years	Currently Inactive
City of Rancho Cordova				
11	Arboretum	Within the Grant Line North Planning Area	1,349 acres bounded by Highway 16 to the south, Grant Line Road to the east, Kiefer Boulevard to the north, and Sunrise Boulevard to the west	Currently Inactive
12	Suncreek Specific Plan	Located in southern Rancho Cordova	1,265 acres located east of the Folsom Canal	Approved 2013
13	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
14	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
15	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				
16	Folsom South of 50 Specific Plan	Eastern Sacramento County, south of U.S. 50 and	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

Project Number	Project Name	Location	Description	Status
		west of Folsom city limits		
City of Sacramento				
17	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

The viewshed for the cumulative aesthetics setting is 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, including the Plan Area and vicinity, exhibit relatively flat topography which is either urbanized or dominated by crop farming interspersed with rural communities and open space areas. 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 2030 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 southwest of the Plan Area and includes approximately 5,913 acres on both the north and south sides of Jackson Road. The NewBridge Specific Plan area is located adjacent to the southern border of the Plan Area and includes approximately 1,095 acres north of Jackson Road. The Mather South Project is located to the north. In total, the four master plans (including the Project) cover approximately 9,247 acres and, based on the most recent NOPs, 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 Project and Alternative 2 would not result in significant impacts related to scenic resources or light or glare. However, the Project and Alternative 2 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 Project and Alternative 2 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 both the Project and Alternative 2 would have a considerable contribution to the overall significant and unavoidable impact. There is no mitigation available to reduce the impacts related to the change in visual character, and the Project and Alternative 2 would result in a considerable contribution to a new **significant and unavoidable** cumulative impact.

Air Quality

Cumulative Setting

The Plan Area 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 reactive organic gases (ROG), oxides of nitrogen (NO_X), 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 accompanied 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. Toxic air contaminants (TACs) behave similarly. As discussed in Chapter 6, “Air Quality,” TAC concentrations substantially decrease within a distance of 500 feet from a source; therefore, it is unlikely that Project-related sources of TACs would combine with

emissions from other projects in the area to produce adverse TAC concentration. Therefore, CO and TACs are 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, ROG, NO_X, 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. In addition, as discussed in the resource chapter, the AQMP that provides numeric data for the analysis was prepared for Alternative 2. For this reason, the following discussion addresses both the Project and Alternative 2.

CUMULATIVE IMPACTS EVALUATION

A cumulative impact analysis is provided for each of the air quality topics addressed in the Project impact analysis follows in consideration of other planned future developments within the Plan Area.

CONSTRUCTION EMISSIONS OF CRITERIA AIR POLLUTANTS AND PRECURSORS

PROPOSED PROJECT

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 Applicant would be required to apply exhaust control measures to heavy-duty equipment and 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-1b in Chapter 6, "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–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 6, "Air Quality," Table AQ-5). Nonetheless, Mitigation Measure AQ-1a 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 pollutants and ozone precursors.

However, in the cumulative context of Mather, NewBridge, and West Jackson, it is foreseeable that construction emissions from any or all of the projects would produce construction emissions in exceedance of the SMAQMD's mass emissions thresholds. If such were the case, Mather, NewBridge, or West Jackson could combine with the Project's construction emissions to produce a regional air quality impact. However, SMAQMD develops its thresholds of significance in consideration of achieving attainment status under the CAAQS and NAAQS and has determined that projects that demonstrate emissions below these thresholds would not have cumulatively considerable contribution to regional air quality degradation.

Therefore, the Project's short-term project-generated construction emissions would be a **less-than-significant** cumulative impact.

ALTERNATIVE 2

Construction activities under Alternative 2 would be similar to the Project. However, implementation of Mitigation Measures AQ-1a and AQ-1b would reduce emissions to below SMAQMD's mass emissions thresholds. For the reasons described above in the discussion of the Project's cumulative impact, Alternative 2's contribution to regional air quality impacts related to construction emissions would not be cumulatively considerable and would result in a **less-than-significant** cumulative impact.

LONG-TERM OPERATIONAL EMISSIONS OF CRITERIA AIR POLLUTANTS AND PRECURSORS

PROPOSED PROJECT

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. The Project was not included in the most current State Implementation Plan (the air quality plan for the region) and is anticipated to have significant operational air quality impacts. Thus, SMAQMD has recommended that the Project achieve a 35 percent reduction in mobile-source operational emissions.

As discussed in Chapter 6, "Air Quality," Mitigation Measure AQ-2b would be applied to the Project. Mitigation Measure AQ-2b requires that the Project develop an SMAQMD-verified AQMP that demonstrates that the Project is able to reduce operational emissions of criteria air pollutants and ozone precursors to SMAQMD's 35 percent reduction target as compared to an "unmitigated" scenario (i.e., modeled emissions based on default VMT values in the California Emissions Estimator Model [CalEEMod]) against a "mitigated" scenario (i.e., modeled emissions using VMT values derived from

a traffic study conducted for the Project). However, compliance with this requirement would not inherently reduce emissions to below the applicable mass emissions thresholds. Because the Project would be similar in land uses and density to Alternative 2 (discussed below), it would be expected the operational emissions would be similar in magnitude. As discussed below, a 35 percent reduction of Alternative 2's emissions would not be sufficient to reduce operational emissions of NO_X and PM_{10} to levels below SMAQMD's thresholds of significance. It would be expected that a similar result would occur following the preparation of an AQMP. Therefore, operation-related emissions for the Project would likely exceed SMAQMD thresholds for NO_X and PM_{10}. Projects that exceed established SMAQMD thresholds of significance would contribute to the regional, and thus cumulative, air quality conditions. The Project would likely emit levels of emissions that would exceed SMAQMD's mass emissions thresholds. This would be a considerable contribution to **significant and unavoidable** cumulative impact.

Chapter 6, "Air Quality," includes a description of the types of health effects associated with this impact. As discussed therein, there is not a dispersion model for evaluation of concentrations of criteria air pollutants within the Sacramento region that has been endorsed by SMAQMD. Further, given the uncertainty surrounding potential receptors (i.e., age, existing health, genetic sensitivity, and numbers in a region), as well as the unknown timing and location of air pollution, meaningful dispersion modeling to quantitatively assess potential human health impacts is speculative at the programmatic level.

ALTERNATIVE 2

Alternative 2 would result in similar levels of emissions as the Project and would exceed SMAQMD's thresholds of significance. Consistent with SMAQMD guidance, an AQMP has been prepared for Alternative 2, which includes various measures to reduce project operational ozone precursor emissions (i.e., NO_X and ROG) by 35 percent. Measures would include subsidized transit passes and deployment of electric vehicle charging stations. Implementation of all available onsite reduction measures would reduce Alternative 2's operational emissions by 35 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 Alternative 2 could implement. However, long-term operational emissions associated with Alternative 2 implementation would continue to exceed applicable thresholds. Operations may contribute to the nonattainment status of the region and may conflict with CAAQS and NAAQS. Thus, Alternative 2's contribution to cumulative operational air quality impacts is cumulatively considerable and significant.

However, as discussed further in the AQMP, emissions estimates were based on Alternative 2's projected VMT. However, at buildout (i.e., 2035), all or some of the Mather, NewBridge, and West Jackson projects could be built-out providing residents of Alternative 2 with a shorter driving distance to regional amenities. It is expected that various commercial land uses, though unknown at this time, could divert trips of longer distances.

As a result, the AQMP prepared for Alternative 2 evaluated a cumulative mitigated scenario using an adjusted cumulative VMT value. Table SI-2 summarizes the resulting

level of emissions of criteria air pollutants and ozone precursors following the application of reduction measures identified in the AQMP.

Table SI-2: Cumulative Alternative 2 Maximum Daily (Mitigated) Operational Emissions of Criteria Air Pollutants and Precursors at Full Buildout (2035)

Source Type	Maximum Daily Emissions (lb/day)			
	ROG	NO_X	PM_{10}	$PM_{2.5}$
Maximum Daily Emissions[1]	53	282	191	55
SMAQMD Threshold of Significance	65	65	80	82
Exceeds Threshold?	No	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]Tons per year emissions values were converted to pounds per day by multiplying the values by 2,000 then dividing by 365.

Source: Modeling conducted by Kleinfelder in 2019

As shown above in Table SI-2, after modeling Alternative 2 in a cumulative context in addition to the application of mitigation measures, emissions of NO_X and PM_{10} would still exceed SMAQMD's thresholds of significance. Thus, Alternative 2 would have a considerable contribution to a **significant and unavoidable** cumulative impact.

MOBILE-SOURCE CO CONCENTRATIONS

PROPOSED PROJECT

As described in Chapter 6, "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 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.

ALTERNATIVE 2

Alternative 2 would result in similar vehicle trips as the Project. The variations in daily trip increases is discussed in greater detail in Chapter 6, "Air Quality." For the reasons described above in the discussion of the Project's cumulative impact, Alternative 2'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

PROPOSED PROJECT

As discussed in Chapter 6, "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 because they dissipate rapidly from the source. Further, Mitigation Measure AQ-4 in Chapter 6, "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 due to 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.

ALTERNATIVE 2

Alternative 2 would include similar land uses (i.e., commercial and educational) as the Project that could result in emissions of TACs. Mitigation Measure AQ-4 would be sufficient to reduce exposure of sensitive receptors to TAC emissions through appropriate planning strategies. For the reasons listed above in the discussion of the Project's cumulative impact, Alternative 2's TAC impacts would not be cumulatively considerable and would result in a **less-than-significant** cumulative impact.

EXPOSURE OF SENSITIVE RECEPTORS TO ODORS

PROPOSED PROJECT

As discussed in Chapter 6, "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 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**.

ALTERNATIVE 2

Alternative 2 would include similar land uses as the Project that could generate odors. However, Mitigation Measure AQ-4 would be sufficient to minimize emissions of adverse odors. For the reasons described above in the discussion of the Project's cumulative impact, Alternative 2's odor impacts would not be cumulatively considerable and would result in a **less-than-significant** cumulative impact.

AIRPORT COMPATIBILITY

CUMULATIVE SETTING

The cumulative boundary for airport compatibility is generally the areas in the immediate vicinity near the jurisdictional boundary of the Comprehensive Land Use Plan (CLUP) for Mather Airport. The Plan Area is located southeast of the Mather Airport, and a small portion of the Plan Area is located within the CLUP 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 CLUP, land use is regulated to ensure that potential incompatibilities from new development do not occur. No existing airport compatibility issues are present within the Plan Area and cumulative impacts would be less than significant.

CUMULATIVE IMPACTS EVALUATION

The Project and Alternative 2 would introduce new sensitive receptors within the CLUP. Development of the NewBridge, Mather South, and West Jackson projects would also result in additional new residents to the vicinity. However, the Project and Alternative 2 would implement mitigation that would ensure development in compliance with the CLUP. All other projects, including those listed above, would also be developed in compliance with the CLUP, and, therefore, would not result in significant impacts. The Project and Alternative 2 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.

CUMULATIVE IMPACTS EVALUATION

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 8, “Biological Resources,” implementation of the Project would result in the loss of approximately 30.30 acres of vernal pool crustacean habitat and western spadefoot breeding habitat. Alternative 2 would result in the loss of approximately 25.61 acres of vernal pool crustacean habitat and western spadefoot breeding habitat. Vernal pool habitats in the Plan Area are known to support vernal pool tadpole shrimp and vernal pool fairy shrimp, and potentially support western spadefoot. 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 NewBridge, Mather South, 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 5 percent to this wetland loss. Implementation of Alternative 2, in combination with other existing and planned development projects in the area including NewBridge, Mather South, and West Jackson, would result in the loss of 17,683 acres, or 17 percent, of the 103,210 acres of vernal pool grassland habitat existing in the SSHCP Plan Area and the overall effects would be similar to the Project. 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. Therefore, the Project and Alternative 2 would have a considerable contribution to a significant cumulative impact.

Implementation of Mitigation Measures BR-1 and BR-17 listed in Chapter 8, “Biological Resources,” would reduce significant direct and indirect 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**.

Should the Project Applicant obtain coverage under the SSHCP for impacts to vernal pool crustaceans and western spadefoot, Mitigation Measure BR-2 would be implemented. These mitigation measures would provide development fees or land dedication in a connected preserve system in accordance with the SSHCP and implement all applicable Avoidance and Minimization Measures contained in that plan. Therefore, implementation of the Project or Alternative 2 with Mitigation Measure BR-2**would not result in a cumulatively considerable contribution** to a significant cumulative impact.

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. 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 could support vernal dependent special-status plant species including two federally listed vernal pool grasses. Implementing the project would result the conversion of approximately 30.30 acres of vernal pool type wetlands to developed land uses.

Implementation of Mitigation Measures BR-3 and BR-4 described in Chapter 8, "Biological Resources," would reduce impacts on known and potentially-occurring special-status plant species because subsequent developers 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. Critical habitat for the federally listed vernal pool grasses (Sacramento Orcutt grass and slender Orcutt grass) has been preserved in the Mather Preserve and would be preserved as part of the Project and Alternative 2. Therefore, implementing the project **would not result in a considerable contribution** to a significant cumulative impact.

Alternatively, the Project Applicant may obtain coverage for impacts to special-status plants under the SSHCP and implement Mitigation Measure BR-2. Implementation of Mitigation Measure BR-2 would reduce impacts though survey and compensatory mitigation on an established SSHCP Preserve. Therefore, implementing the Project or

Alternative 2 with Mitigation Measure BR-2 **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 Project or Alternative 2 would result in a permanent loss of approximately 516.7 acres of 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 and Alternative 2 would remove potentially suitable nest trees. Nesting habitat in proximity to abundant forage habitat is crucial to reproductive success of Swainson's hawks. Implementation of Mitigation Measures BR-14, BR-15, and BR-17 described in Chapter 8, "Biological Resources," would reduce project-level impacts on Swainson's hawk foraging and nesting 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**.

Alternatively, the Project Applicant may obtain coverage for impacts to Swainson's hawk under the SSHCP and implement Mitigation Measure BR-2. Implementation of

Mitigation Measure BR-2 would reduce impacts though survey and compensatory mitigation on an established SSHCP Preserve. Therefore, implementing the Project or Alternative 2 with Mitigation Measure BR-2 **would not result in a considerable contribution** to a significant cumulative impact on Swainson's hawk.

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., NewBridge, Mather South, 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.

Development of the Plan Area would result in removal of habitat known to support foraging of white-tailed kite and northern harrier. In addition, Cooper's hawk, tricolored blackbird, loggerhead shrike, white-tailed kite, and northern harrier may nest in the Plan Area and project implementation would remove nesting habitat and possibly active nest sites. Other special-status species could also 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, 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-5 through 10 and BR-12 through 17 listed in Chapter 8, "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, yellow-headed blackbird, Cooper's hawk, northern harrier, tricolored blackbird, song sparrow [Modesto population], 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, burrowing owl habitat, potential wetland and upland habitat for western pond turtle, and denning and foraging habitat for American badger will be permanently protected in the wetland preserve onsite. Therefore, implementation the Project or Alternative 2 **would not result in a considerable contribution to a significant cumulative impact**. Therefore, cumulative project impacts would be **less than significant**.

Alternatively, the Project Applicant may obtain coverage for impacts to valley elderberry longhorn beetle, burrowing owl, tricolored blackbird, loggerhead shrike, white-tailed kite, northern harrier, and Cooper's hawk under the SSHCP and implement Mitigation Measures BR-2 and BR-14. Implementation of the above mitigation measures would reduce impacts though survey, avoidance and minimization measures, and compensatory mitigation on an established SSHCP Preserve. Therefore, obtaining coverage under the SSHCP and implementing the related mitigation measures **would not result in a considerable contribution** to a significant cumulative impact.

COMMON RAPTOR AND OTHER COMMON BIRD NESTS

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.

Many common raptors and other common nesting birds have suitable nesting habitat within the Plan Area, and project construction activities may result in disturbance of nests potentially resulting in nest abandonment by the adults and mortality of chicks and eggs. Loss of chicks and eggs of common raptors and other common nesting birds

could reduce population levels and contribute to the existing cumulative condition. However, Mitigation Measures BR-12 and BR-13or BR-2 listed in Chapter 8, “Biological Resources,” would require preconstruction nest surveys, prohibit the removal of trees during the breeding season for nesting birds, and implement buffers around nests which would reduce impacts on nesting birds. Therefore, implementing the Project or Alternative 2 together with mitigation measures **would not result in a considerable contribution** to a significant cumulative impact.

RIPARIAN HABITATS

Past development and land conversion in Sacramento County and the Central Valley, including conversion of native habitats to agricultural production and expansion of urban development, has resulted in a substantial loss of riparian habitat within the region. Typical riparian tree species, black willow, black walnut, California sycamore, and Fremont cottonwood do not occur in association with the creeks and streams on the Plan Area; however, these tree species occur in the Plan Area in association with the large irrigation pond and other small ponds. The banks of these ponds may support additional riparian species and function as riparian habitats. These ponds would be subject to disturbance from construction, and any riparian habitat that may occur would be disturbed adding to the cumulative condition in the region. However, implementing Mitigation Measure BR-18, BR-19,and BR-20 or BR-2 would require mitigation of disturbance of riparian habitat a minimum 1:1 ratio. Therefore, implementing the Project or Alternative 2 together with mitigation measures **would not result in a considerable contribution** to a significant cumulative impact.

WILDLIFE MOVEMENT CORRIDORS

Past and current urban development within Sacramento County and the Central Valley has resulted in fragmentation of habitat and restriction of movement for aquatic and terrestrial species across the landscape. The Project would include the dedication of approximately 214.3 acres of wetland preserve to the SSHCP preserve system that would allow continued movement of species between the existing Mather Preserve to the north and other undeveloped open space to the south and east through the Plan Area. Under Alternative 2, this wetland preserve would be increased to 259.8 acres. Therefore, neither the Project nor Alternative 2 would not interfere substantially with the movement of native resident or migratory species and **would not result in a considerable contribution to a significant cumulative impact**.

SOUTH SACRAMENTO HABITAT CONSERVATION PLAN

Past development projects would not conflict with the SSHCP, because they pre-date the adoption of the plan. Future projects within the plan area for the SSHCP would be subject to review by Sacramento County and the other jurisdictions within the SSHCP plan area. Future projects would be required by Sacramento County and the other jurisdictions to mitigate any inconsistencies the SSHCP as part of the CEQA process. The Project is specifically addressed in the SSHCP (County of Sacramento et al. 2018). Appendix K to the SSHCP describes the Project as including approximately 225 acres of onsite preserve and a variance to the Avoidance and Minimization Measure related to changes to the channel of Elder Creek. As proposed, the Project would include 214.3

acres of wetland preserve, which does not meet the 225 acres of preservation within the Plan Area that is part of the SSHCP Conservation Strategy. The smaller preserve area would remain inconsistent with the SSHCP Conservation Strategy and no feasible mitigation is available to reduce this inconsistency 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**.

Alternative 2 includes 259.8 acres of wetland preserve and is consistent with the hardline preserve boundary in the SSHCP. Therefore, implementing the Alternative 2 **would not result in a considerable contribution** to a significant cumulative impact related to conflict with the SSHCP.

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 2035, for which the 2030 GHG thresholds were extrapolated in alignment with State GHG reduction targets. Development of the Project or Alternative 2 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, both the Project and Alternative 2 would reduce GHG emissions generated onsite and 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 Plan Area in conjunction with surrounding future planned development would provide regional VMT reductions compared to the cumulative scenario with the Project or Alternative 2 alone. The four large-scale development projects in unincorporated Sacramento County (i.e., Mather South Community Master Plan, 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 Jackson Township. 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 9, “Climate Change.”

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 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 Project and Alternative 2 would result in ground-disturbing activities during construction and have the potential to unearth previously unidentified cultural resources. With mitigation, both the Project and Alternative2 would not result in a considerable contribution to a significant cumulative impact related to cultural resources. The 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 Plan Area. The geographic scope of cumulative impacts related to geology, soils, or seismic hazards, therefore, includes only projects immediately adjacent to the Plan Area. No significant cumulative geology or soils impacts are present on or near the Plan Area. Although the Plan Area does not include land containing valuable mineral resources, development of adjacent properties would preclude mining operations in a manner that could be considered significant in a cumulative setting.

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 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 Project and Alternative 2 would not result in a reduction in the availability of (i.e., access to or removal of) any mineral resource, because none exist within the proposed Plan Area. Additionally, the Project would not result in the closure of adjacent mining resources. The Project and Alternative 2 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.

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 and Alternative 2 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, 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. While most 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. However, there is no record of existing contamination within or immediately adjacent to the Plan Area. Therefore, the existing cumulative setting is **less than significant**.

CUMULATIVE IMPACTS EVALUATION

The Project or Alternative 2 could exacerbate the existing soil and groundwater impacts within the Plan Area if it were to result in additional contamination onsite or increase the risk of hazardous materials exposure during the transport, use, and disposal of hazardous materials. However, the Project and Alternative 2 would be required to comply with federal, State, and local hazardous materials regulations and codes monitored by the State and/or local jurisdictions and implement mitigation measures that would require the preparation of a site-specific Health and Safety Plan, conducting 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 and Alternative 2 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 Plan Area is in the eastern portion of the Morrison Creek Stream Group which ultimately feeds into the BSL watershed and covers approximately 123,536 acres. The BSL watershed is the cumulative watershed boundary for the evaluation of cumulative effects. Modeling for the 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 BSL watershed, which experiences mild flooding in the existing pre-development condition. When considered in a cumulative condition, nearby projects including the NewBridge, Mather South, and West Jackson projects, would also exacerbate the existing flooding within the BSL watershed through the conveyance of addition volume of runoff. This is an existing significant cumulative impact.

CUMULATIVE IMPACTS EVALUATION

Both the Project and Alternative 2 would result in an increase in runoff volume from existing conditions. 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 BSL 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 B SL 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. Jackson Township and other nearby cumulative projects would be required pay these fees, which would over time reduce the severity of the impact. However, the timing of completion of flood protection projects in the BSL/Point Pleasant area or implementation of regional flood volume storage solutions is unknown. Therefore, the Project and Alternative 2 would result in a considerable contribution to this significant cumulative impact. Cumulative impacts would be **significant and unavoidable.**

LAND USE

CUMULATIVE SETTING

The Plan Area 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 Project is consistent with the County's vision for the Jackson Highway Corridor and would amend the General Plan Land Use Designations and zoning 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 and Alternative 2would result in changes to the zoning and use of the Plan Area that would increase development density, such changes would be generally consistent with regional planning efforts guiding development. The Plan Area is within an area of Sacramento County that is planned for growth. Therefore, the Project and Alternative 2 would not result in a considerable contribution such that a new significant cumulative impact would occur. Cumulative 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 of the Plan Area. The City of Sacramento is approximately 1.5 miles west of the Plan Area. The City of Folsom is approximately 6.5 miles northeast of the Plan Area. The cumulative evaluation also includes the NewBridge, West Jackson, and Jackson Township projects. The projects and their associated traffic volume impacts were taken into consideration for the Traffic Impact Analysis (TIA) and noise study 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 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 Jackson Township Specific Plan, the NewBridge, Mather South, 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 near the Plan Area; however, only the NewBridge Specific Plan and the West Jackson Highway Master Plan are located adjacent to the project boundary and are anticipated to result in potential cumulative noise impacts from construction activity. The NewBridge Specific Plan is located directly east of the Plan Area. Considering the long-term implementation period of both the Mather South Project and the NewBridge development, the exact timing of when land uses would be developed is unknown. It is assumed that land uses related to the NewBridge project could be under development during the same time or after buildout of the Plan Area. The Jackson Township Plan Area land use map, as well as the land use maps for all the alternatives, include a wetland preservation area and agricultural land uses directly west of the NewBridge Specific Plan area. Given the proximity of the NewBridge Specific Plan to the Agricultural land uses in 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 Jackson Township 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 Project or Alternative 2 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 Project and Alternative 2 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 cumulative impact of the Project or Alternative 2 would be **considerable and significant and unavoidable**.

MITIGATION MEASURES

Implement Mitigation Measure NOI-1 and NOI-2

STATIONARY NOISE SOURCES

The Project and Alternative 2 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 and Alternative 2 would also include the development of one new electrical substation within the Plan Area and associated transmission lines. The NewBridge Specific Plan project is located directly east of the Plan Area and is considered in this cumulative analysis because of the proximity. The Jackson Township Plan Area land use map, as well as the land use maps for all the alternatives, include a wetland preservation area and agricultural land uses directly west of the NewBridge Specific Plan area. These land uses would serve as a buffer between land uses built with new stationary noise sources as part of the Project or Alternative 2 and potential noise sensitive land uses developed as part of the NewBridge Specific Plan adjacent to the western boundary of the Project. Additionally, implementation of Mitigation Measure NO-4 would reduce impacts related to stationary noise sources through the implementation of site design and avoidance features. The agricultural land uses directly west of the NewBridge Specific Plan area could allow for the future development of stationary noise sources. The specific location of these new stationary equipment is unknown, so impacts could still exceed the County's non-transportation noise standard for outdoor noise sensitive areas in the NewBridge Specific Plan. As a result, implementation of the Project or Alternative 2 in the cumulative condition could result in a cumulatively considerable contribution to a new significant cumulative impact. The contribution of the Project or Alternative 2 to this new impact would be **considerable and significant and unavoidable**.

MITIGATION MEASURES

Implement Mitigation Measure NOI-3 and NOI-4

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 NewBridge, Mather South, and West Jackson 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 Jackson Township Project, would result in increases in traffic-related noise levels along roadways which experience traffic volume increases. Under the cumulative condition, which includes the Jackson Township Project, traffic noise levels would be further

increased by traffic volume increases generated by the development of the Plan Area. Table SI-3 includes the roadway segments that would experience a substantial increase in traffic noise levels under cumulative plus Project conditions. Roadway segments not included in this table are not expected to have a substantial increase in roadway noise.

Table SI-3: Summary of Modeled Substantial Traffic Noise Level Increases under Cumulative Existing Plus Project Conditions

Roadway	Segment		Net Change (dB)
	From	To	
Elder Creek Road	Mayhew Road	Bradshaw Road	+2.0
	Vineyard Road	Excelsior Road	+2.1
Excelsior Road	Jackson Road	Collector WJ6	+1.8
	Collector WJ6	Elder Creek Road	+1.7
	Rock Creek Road	Collector WJ5	+2.1
	Excelsior Road	Collector JT3	+2.4
Kiefer Boulevard	Collector WJ14	Routier Extension	+1.7
	Routier Extension	Happy Lane	+1.7
	Eagles Nest Road	Collector W. MS1	+5.1
	Collector W. MS1	Northbridge Road	+4.5
	Northbridge Road	Collector E. MS1	+3.8
	Collector E. MS1	Sunrise Boulevard	+2.2
	Happy Lane	Douglas Drive	+1.8
	Douglas Drive	Excelsior Road	+7.0
Hedge Avenue	Elder Creek Road	Florin Road	+4.6
Howe Avenue	U.S. 50	Folsom Boulevard	+5.0
Zinfandel Drive	Collector MS4	Kiefer Boulevard	+1.8

Notes: dB = decibels; Numbers are approximate due to rounding;
Refer to Appendix NOI-1 for detailed modeling input data and output results.
Source: J.C. Brennan & Associates, Inc., 2018

Table SI-4 includes roadway segments that would experience a substantial increase in traffic noise levels cumulative plus Alternative 2 conditions.

Table SI-4: Summary of Modeled Substantial Traffic Noise Level Increases under Cumulative Existing Plus Alternative 2 Conditions

Roadway	Segment		Net Change (dB)
	From	To	
Elder Creek Road	Mayhew Road	Bradshaw Road	+2.0
Excelsior Road	Jackson Road	Collector WJ6	+1.7
	Collector WJ6	Elder Creek Road	+1.6
Jackson Road	Excelsior Road	Collector JT3	+2.4

Roadway	Segment		Net Change (dB)
	From	To	
	14th Avenue	Rock Creek Road	+1.7
Kiefer Boulevard	Collector WJ14	Routier Extension	+1.6
	Routier Extension	Happy Lane	+1.7
	Eagles Nest Road	Collector W. MS1	+5.1
	Collector W. MS1	Northbridge Road	+4.6
	Northbridge Road	Collector E. MS1	+3.8
	Collector E. MS1	Sunrise Boulevard	+2.0
	Happy Lane	Douglas Drive	+1.8
	Douglas Drive	Excelsior Road	+7.0
Hedge Avenue	Elder Creek Road	Florin Road	+3.6
Howe Avenue	U.S. 50	Folsom Boulevard	+6.0
Zinfandel Drive	Collector MS4	Kiefer Boulevard	+1.8

Notes: dB = decibels; Numbers are approximate due to rounding;
Refer to Appendix NOI-1 for detailed modeling input data and output results.
Source: J.C. Brennan & Associates, Inc., 2018

As shown in Table SI-3 and Table SI-4, under both cumulative plus Project and cumulative plus Alternative 2 conditions, roadway segments surrounding the Plan Area would experience a substantial increase in traffic noise levels from implementation of the Project or Alternative 2. Thus, a cumulative impact regarding long-term traffic exists and the cumulative plus Project and cumulative plus Alternative 2 scenarios would result in additional substantial increase in traffic noise levels. This impact would be **considerable and significant.** During implementation of the four specific plans discussed above (Jackson Township, NewBridge, Mather South, and West Jackson projects), Sacramento County would require that each project implement the following Mitigation Measure 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 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 Project or Alternative 2 and other projects in the cumulative condition, the unknown traffic 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 and Alternative 2 would result in a cumulatively considerable contribution to a new significant cumulative impact. This cumulative impact would be **considerable and significant and unavoidable**.

PUBLIC SERVICES

CUMULATIVE SETTING

The 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 District. School services are provided by the Elk Grove Unified School District. Parks and recreation services are provided by the Cordova Recreation and Park District. Library services are provided by the Sacramento Public Library. Potential impacts to public services are generally regulated by policies in the 2030 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 SI-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 Project and Alternative 2 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 78 acres of parks and recreational uses, while Alternative 2 would construct nearly 82 acres of parks and recreational uses. The Project and Alternative 2 also include an infrastructure financing plan to fund the construction of all required facilities. The project-level analysis concludes that the Project and Alternative 2 can be adequately served, and the Project and Alternative 2 would not contribute to any cumulative degradation of service. Therefore, the cumulative contribution would not be considerable and impacts would be **less than significant**.

WASTEWATER AND SOLID WASTE

CUMULATIVE SETTING

The Plan Area 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. 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 onsite and offsite sewer infrastructure described for the Project and Alternative 2 are designed to handle cumulative conditions, and the analysis concludes that capacity would be sufficient. Direct impacts would be less than significant and the Project and Alternative 2 would not result in a cumulatively considerable contribution to a new significant cumulative impact. Similarly, solid waste disposal would be provided by Kiefer Landfill, which has sufficient remaining permitted capacity to accommodate waste generated by either the Project or Alternative 2. Therefore, project-related cumulative impacts would be **less than significant**.

TRAFFIC AND CIRCULATION

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 the Jackson Township, Mather South, NewBridge, and West Jackson projects (referred to collectively as the Jackson Corridor Projects) and the portion of those impacts attributed to the Jackson Township Project on cumulative transportation and circulation conditions.

As was described in Chapter 20, "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 a as stand-alone project, 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 is bounded by US Highway 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 *Jackson Township Specific Plan Transportation Impact Report* (Transportation Report) (Appendix TR-1) prepared to support Chapter 20, "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 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 analyses because it was the adopted MTP/SCS at the time that 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 SI-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 SI-2** illustrates the resultant traffic operating conditions associated with the Cumulative No Project scenario.

CUMULATIVE PLUS JACKSON CORRIDOR PROJECTS SCENARIOS

The Cumulative plus Jackson Corridor Project scenarios are the cumulative scenarios upon which the Cumulative plus Jackson Township Project scenarios are based. The Cumulative plus Jackson Corridor Projects scenarios evaluate the travel demand of the Jackson Corridor Projects combined and added to Cumulative No Project conditions. Thus, the Cumulative plus Jackson Corridor Projects scenarios identify the impacts of the Jackson Corridor Projects, to which the Jackson Township Project contributes. These scenarios analyze cumulative conditions (year 2035) with implementation of the Jackson Corridor Projects, which includes the Jackson Township 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 SI-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 traffic report was prepared for each master plan project to identify project-specific impacts and mitigation measures.

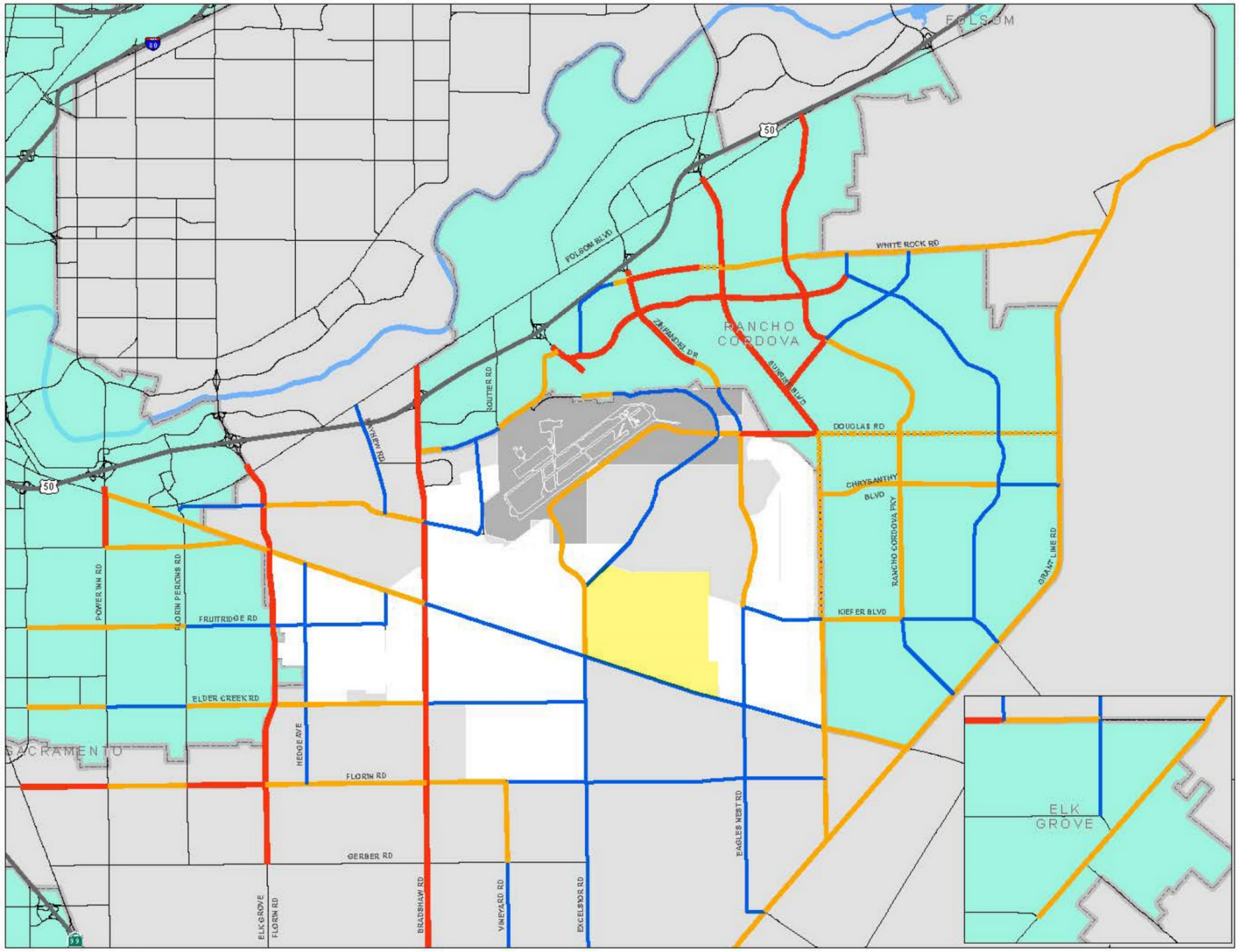
TRANSPORTATION NETWORK

Plate SI-4 and Plate SI-5 illustrate the transportation network associated with the Cumulative plus Jackson Corridor Projects with implementation of the Project (hereinafter denoted as Project) and the Cumulative plus Jackson Corridor Projects with implementation of Alternative 2 (hereinafter denoted as Alternative 2) scenarios, respectively. As described in Chapter 20, 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 scenarios were 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 20, 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 SI-6 shows the assumed transit routes for the Cumulative plus Jackson Corridor Projects scenarios. 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.



Source: Image prepared and provided by DKS Associates in 2019

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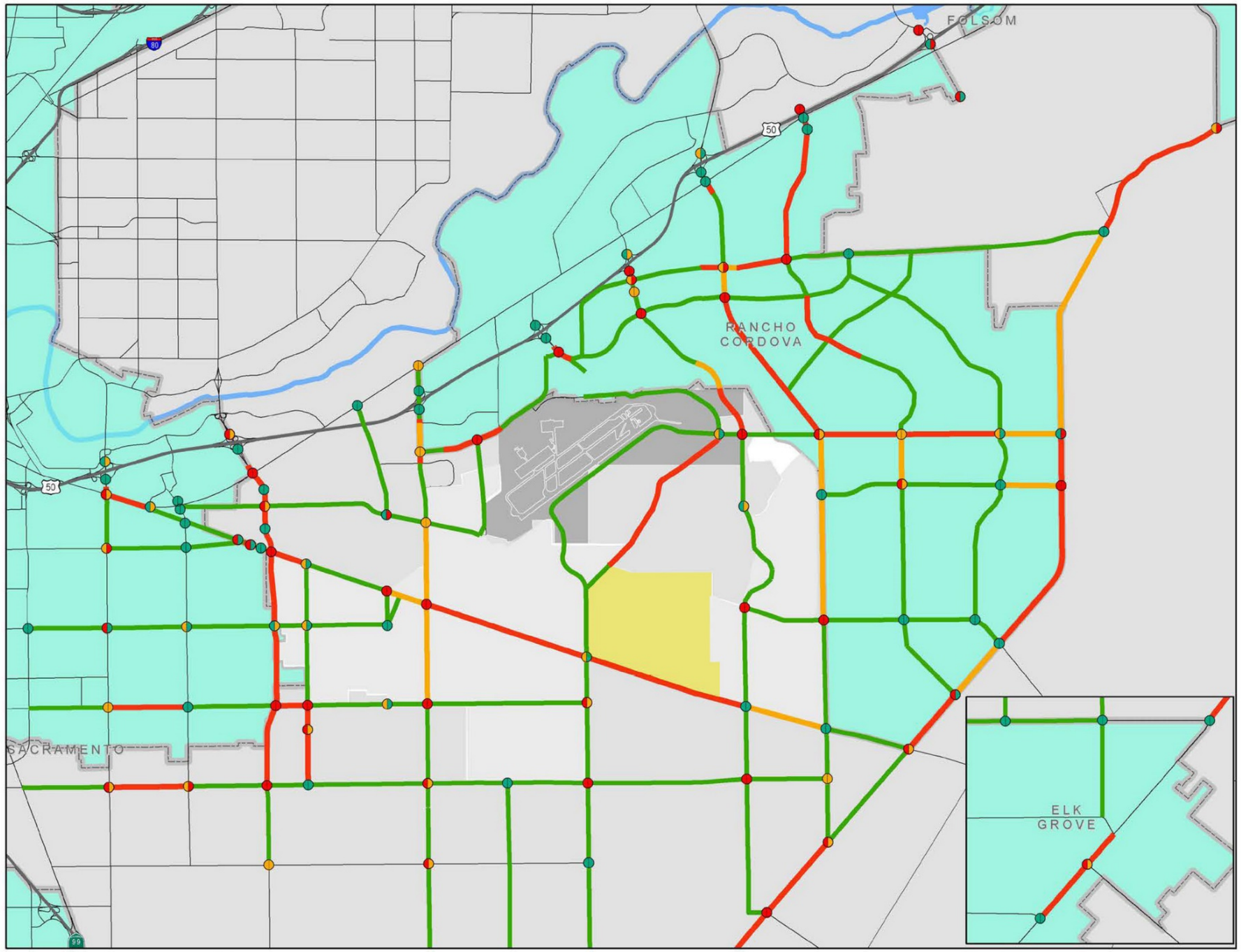
Plate SI-1: Cumulative No Project - Roadway Network



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
- Jackson Township Project

Source: Image prepared and provided by DKS Associates in 2019

X15010101.09 068

Plate SI-2: Cumulative No Project – Roadway Segment and Intersection LOS

ASCENT ENVIRONMENTAL

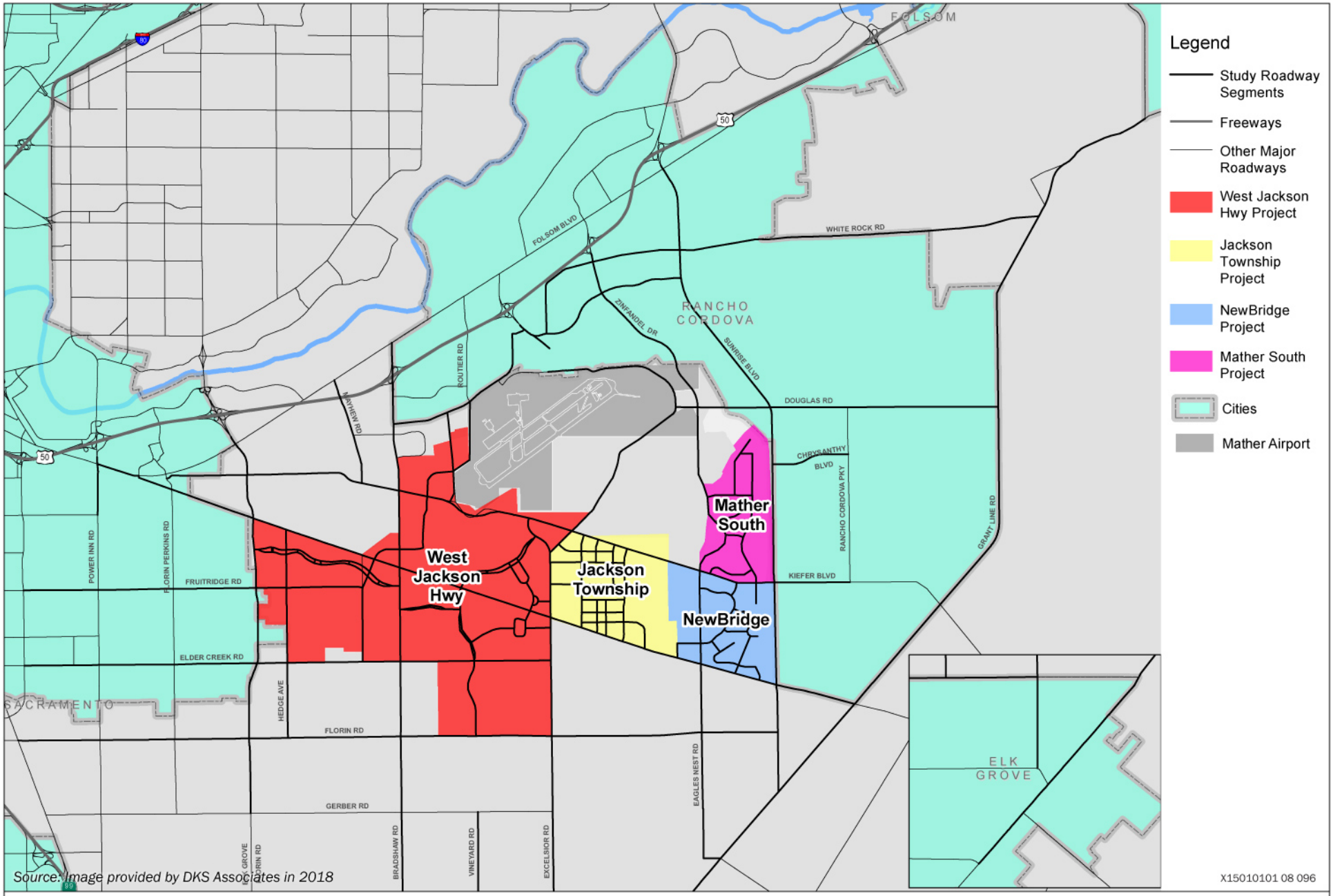


Plate SI-3: Jackson Corridor Projects - Project Location

ASCENT ENVIRONMENTAL

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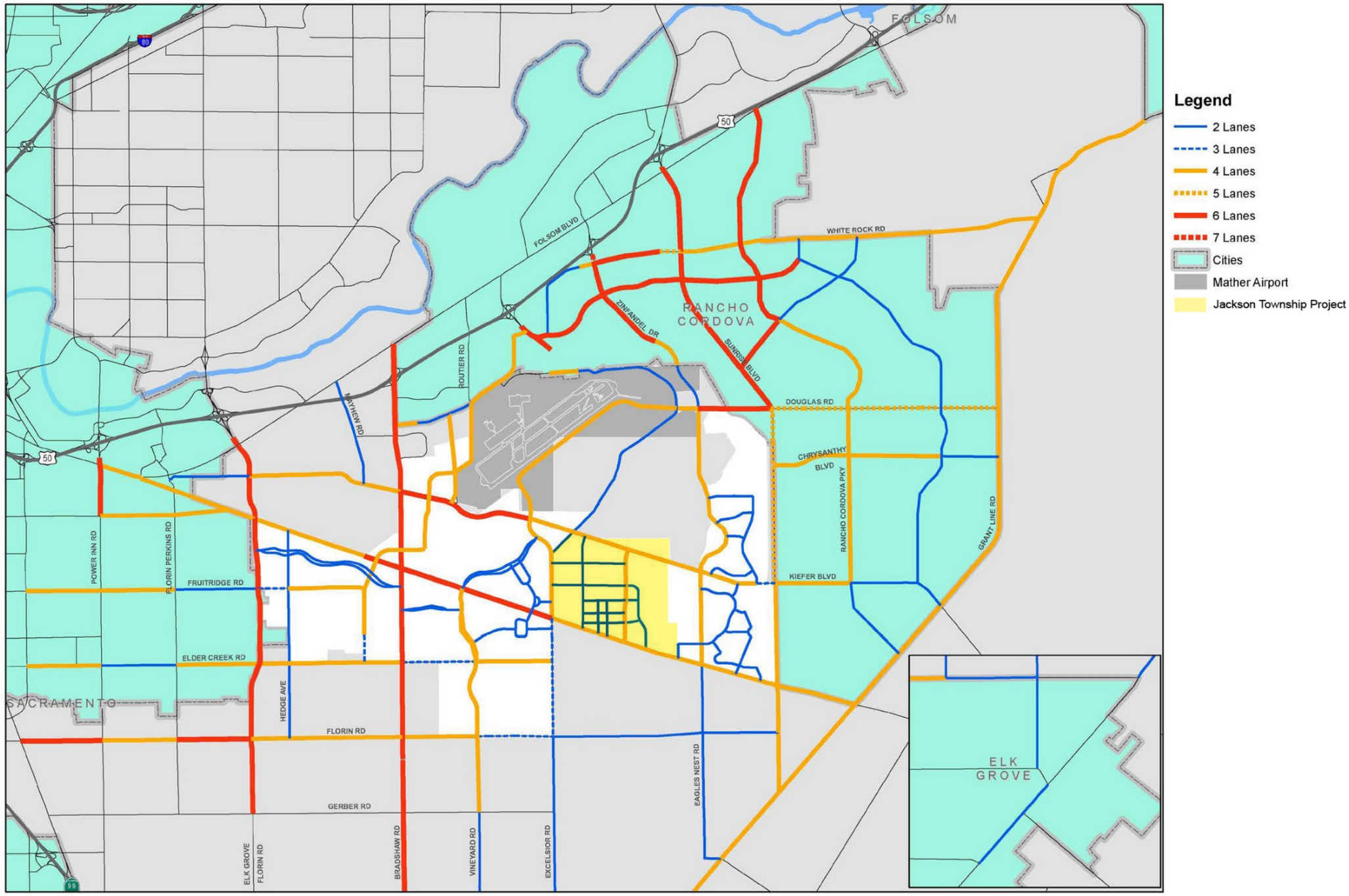
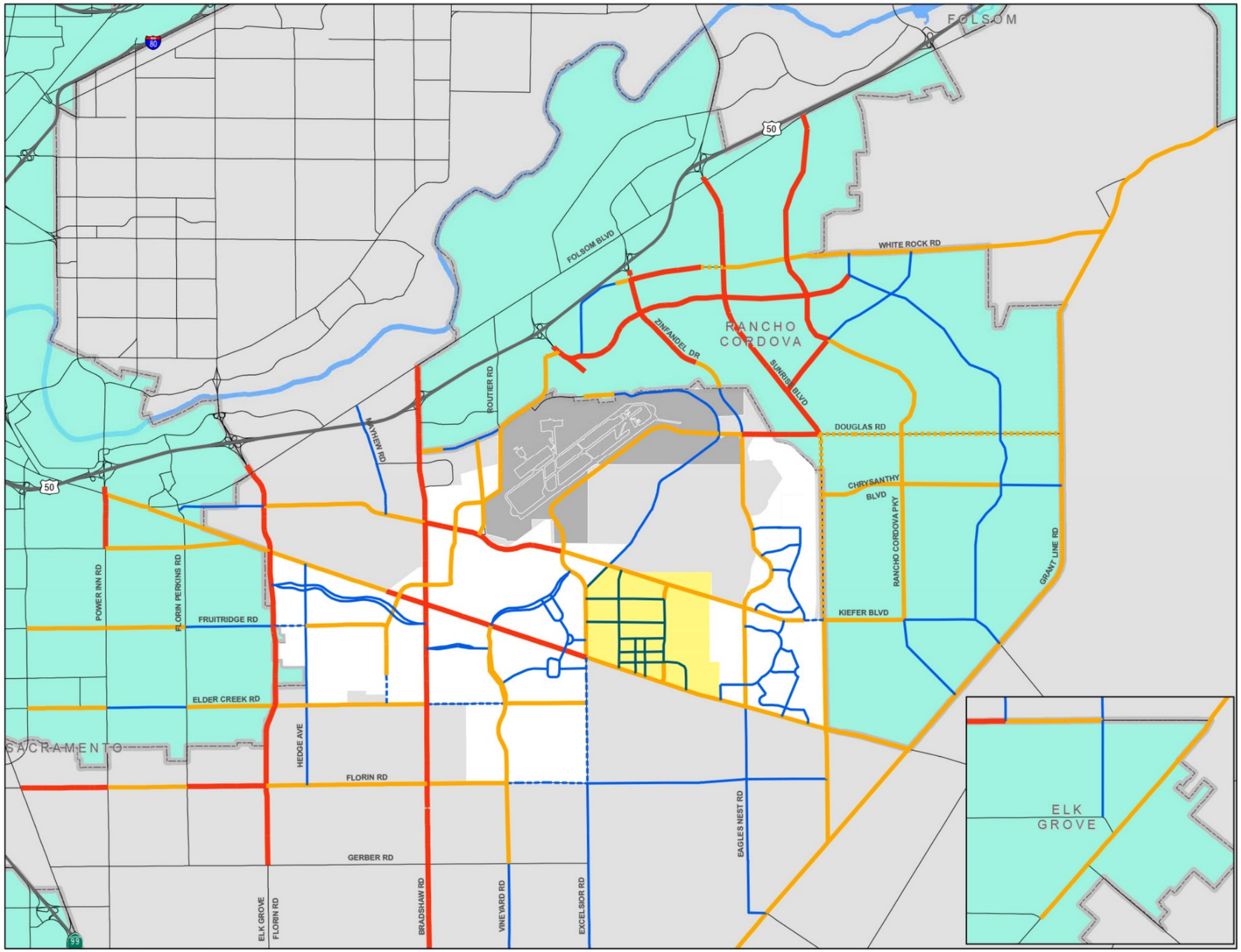


Source: Image prepared and provided by DKS Associates in 2019

X15010101.09 079

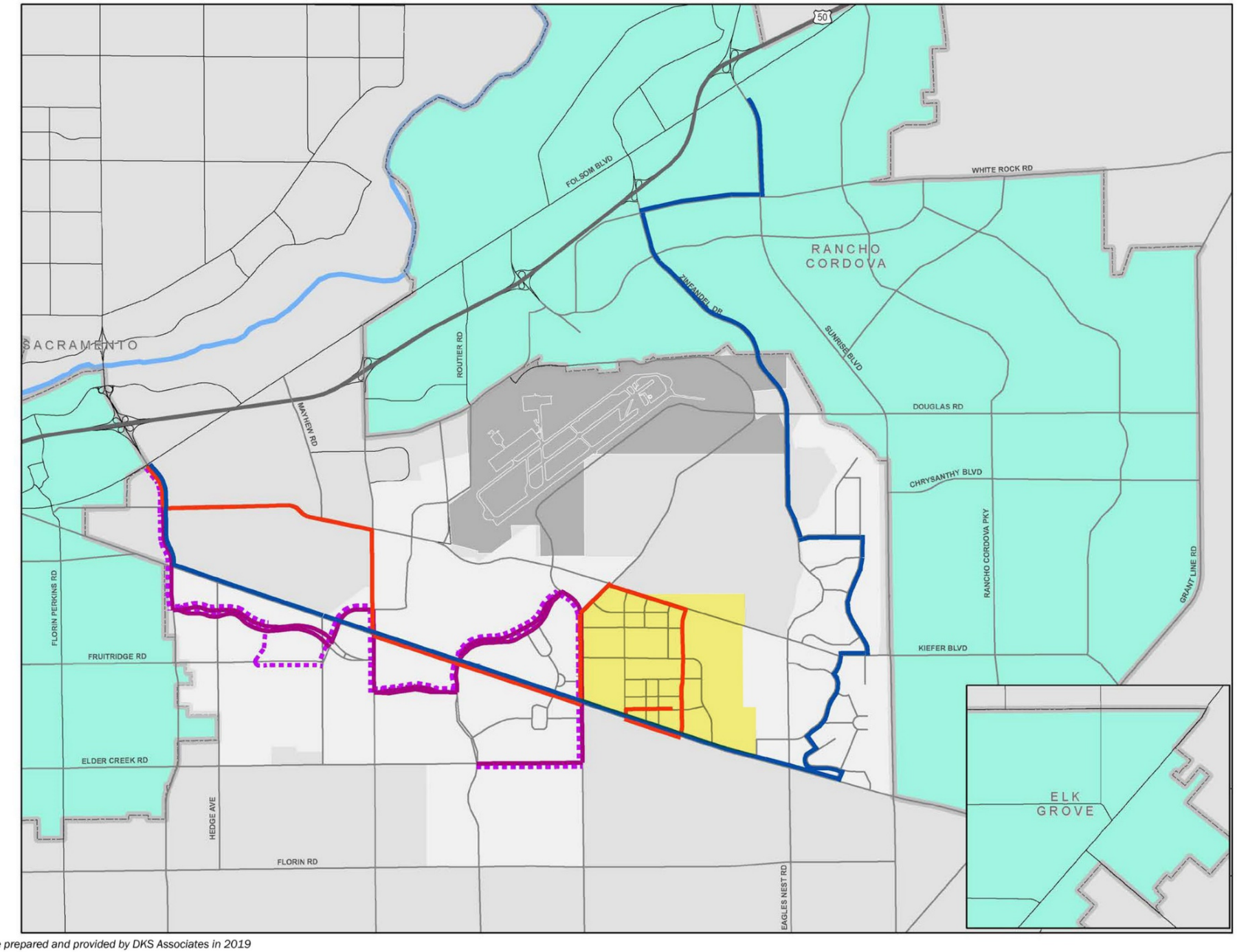
Plate SI-4: Cumulative Plus Jackson Corridor Projects (Project) - Roadway Network



Source: Image prepared and provided by DKS Associates in 2019

X15010101.09 065

Plate SI-5: Cumulative Plus Jackson Corridor Projects (Alternative 2) - Roadway Network



Source: Image prepared and provided by DKS Associates in 2019

X15010101.09 080

Plate SI-6: Cumulative Plus Jackson Corridor Projects - Transit Network

ASCENT ENVIRONMENTAL

TRIP GENERATION

The SACSIM model was utilized to estimate trip generation of the Jackson Corridor Projects. **Table SI-5** summarizes the person trip generation for both the Cumulative plus Jackson Corridor Projects scenarios (Project and Alternative 2) analyzed in the Transportation Report.

Table SI-5: Estimated Daily Person Trip Generation (Cumulative plus Jackson Corridor Projects Scenarios)

Project	Trip Purpose	Daily Person Trip Ends
Jackson Corridor Projects (Project)	Work Trips	95,402
	Non-Work Trips	708,805
	All Trip Purposes	804,206
Jackson Corridor Projects (Alternative 2)	Work Trips	86,484
	Non-Work Trips	643,573
	All Trip Purposes	730,057

Source: DKS Associates 2019

Table SI-6 and **Table SI-7** summarize the estimated mode choice for the Cumulative Plus Jackson Corridor Projects scenarios (Project and Alternative 2), respectively. The mode choice assumes full implementation of the projects' pedestrian and bicycle systems.

Table SI-8 and **Table SI-9** summarize the vehicular trip generation of the Jackson Corridor Projects under Project and Alternative 2 conditions, respectively. **Table SI-8** and **Table SI-9** also show the vehicle trips generated during the a.m. and p.m. peak hours.

Table SI-6: Mode Split (Cumulative plus Jackson Corridor Projects [Project] Scenario)

Project	Mode	Percentage of Person Trips by Trip Purpose		
		Work Trips	Non-Work Trips	All Trip Purposes
Project	Auto - SOV	83.2%	47.0%	51.3%
	Auto - HOV	10.0%	43.0%	39.1%
	Transit	4.6%	1.7%	2.0%
	Walk	1.3%	7.4%	6.7%
	Bike	0.1%	1.0%	1.0%

Source: DKS Associates 2019

Table SI-7: Mode Split (Cumulative plus Jackson Corridor Projects [Alternative 2] Scenario)

Project	Mode	Percentage of Person Trips by Trip Purpose		
		Work Trips	Non-Work Trips	All Trip Purposes
Alternative 2	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 2019

Table SI-8: Estimated Daily Vehicle Trip Generation (Cumulative plus Jackson Corridor Projects [Project] Scenario)

Trip Type		A.M. Peak Hour	P.M. Peak Hour	Daily
Total Vehicle Trip Ends		46,032	50,381	541,167
Percent Internal Trip Ends[1]		16.7%	20.4%	19.8%
Vehicle trips	Internal to Project	3,851	5,132	53,638
	External to Project	38,331	40,118	433,891
	Total	42,182	45,249	487,529

[1] Both trip ends within the project.
Source: DKS Associates 2019

Table SI-9: Estimated Daily Vehicle Trip Generation (Cumulative plus Jackson Corridor Projects [Alternative 2] 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 2019

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 SI-7** and **Plate SI-8** illustrate the overall trip distribution of daily trips under the Cumulative Plus Jackson Corridor Projects for the Project and Alternative 2 scenarios, respectively. The highest percentage of Jackson Corridor

Projects traffic would travel along Jackson Road, Bradshaw Road, Kiefer Boulevard, and Vineyard Road.

CUMULATIVE PLUS JACKSON TOWNSHIP PROJECT SCENARIOS

The analysis of the Cumulative Plus Jackson Township (Project) and Cumulative Plus Jackson Township (Alternative 2) scenarios assume that the other three projects that make up the Jackson Corridor Projects would be developed and analyze cumulative conditions (year 2035) with implementation and buildout of the Jackson Township Project based upon the analysis of the Cumulative Plus Jackson Corridor Projects scenarios. This scenario includes a detailed transportation and traffic analysis to understand the cumulative effects directly attributed to the Jackson Township Project and Alternative 2.

The SACSIM travel model was utilized to estimate the portion of the Jackson Corridor Project's traffic that is attributed to the Jackson Township Project and Alternative 2 identified in the Transportation Report. With this information, the significant impacts triggered by the Project and Alternative 2 were identified. It should be noted that, even at locations where the Jackson Township Project on its own would not trigger a significant impact, the Jackson Township Project contributes to the cumulative impacts associated with the Cumulative Plus Jackson Corridor Projects scenario.

TRIP GENERATION

The trip generation for the Project and Alternative 2 were estimated using the SACSIM model. **Table SI-10** summarizes the person trip generation.

Table SI-10: Estimated Daily Person Trip Generation (Cumulative Plus Jackson Township Project Scenarios)

Project	Trip Purpose	Daily Person Trip Ends
Jackson Township (Project)	Work Trips	24,001
	Non-Work Trips	168,919
	All Trip Purposes	192,920
Jackson Township (Alternative 2)	Work Trips	15,296
	Non-Work Trips	117,799
	All Trip Purposes	133,095

Source: DKS Associates 2019

Table SI-11 and Table SI-12 summarize the estimated mode choice for the Jackson Township Project and Alternative 2, as analyzed in the Transportation Report.

Table SI-11: Mode Split (Cumulative Plus Jackson Township Project [Project] Scenario)

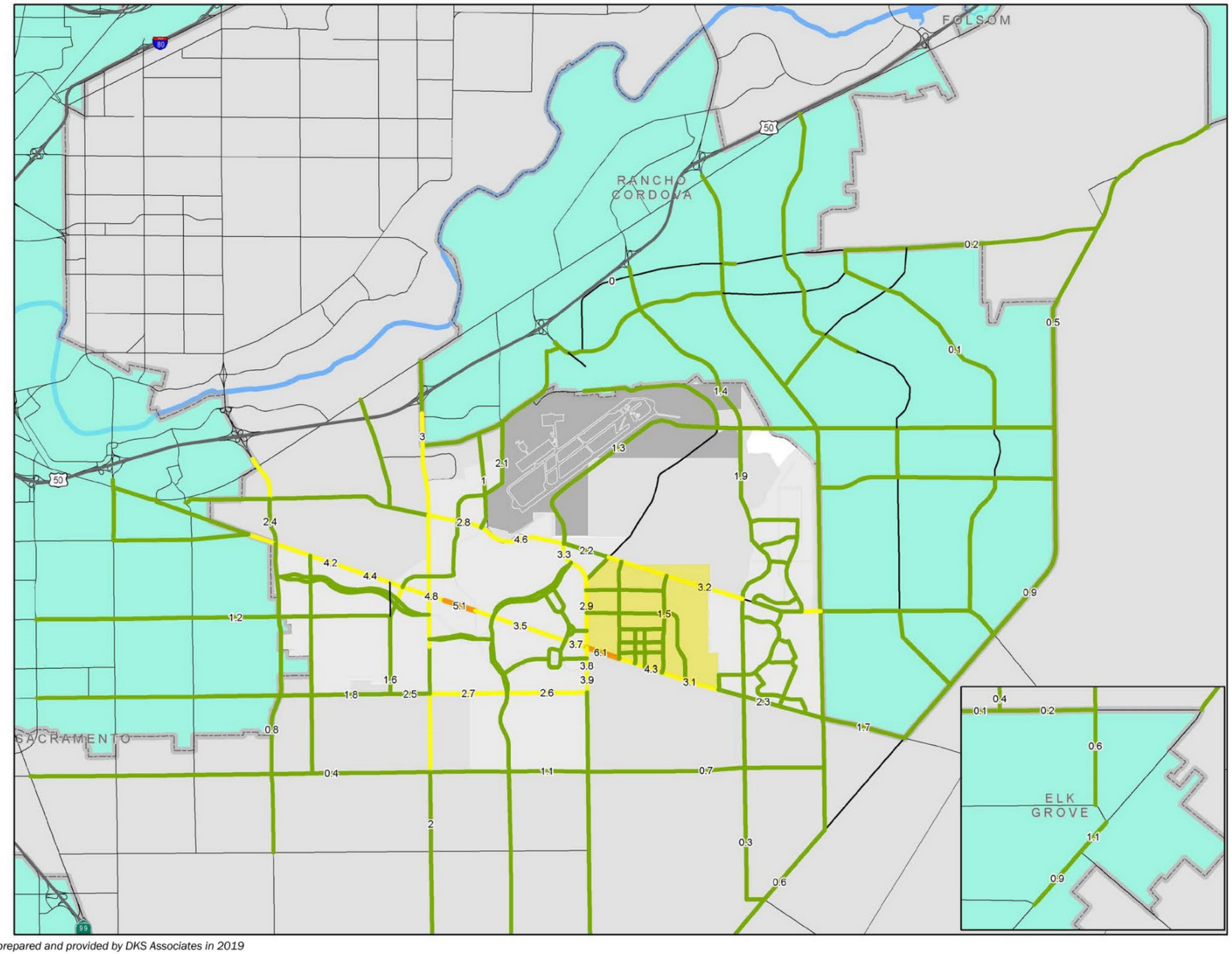
Project	Mode	Percentage of Person Trips by Trip Purpose		
		Work Trips	Non-Work Trips	All Trip Purposes
Jackson Township (Project)	Auto - SOV	81.0%	40.1%	45.2%
	Auto - HOV	9.4%	43.8%	39.5%
	Transit	5.8%	1.9%	2.4%
	Walk	2.6%	12.9%	11.7%
	Bike	1.1%	1.3%	1.2%

Source: DKS Associates 2019

Table SI-12: Mode Split (Cumulative Plus Jackson Township Project [Alternative 2] Scenario)

Project	Mode	Percentage of Person Trips by Trip Purpose		
		Work Trips	Non-Work Trips	All Trip Purposes
Jackson Township (Alternative 2)	Auto - SOV	81.4%	42.6%	47.1%
	Auto - HOV	9.2%	43.7%	39.7%
	Transit	4.8%	1.7%	2.0%
	Walk	3.3%	11.0%	10.1%
	Bike	1.3%	1.0%	1.1%

Source: DKS Associates 2019



Source: Image prepared and provided by DKS Associates in 2019

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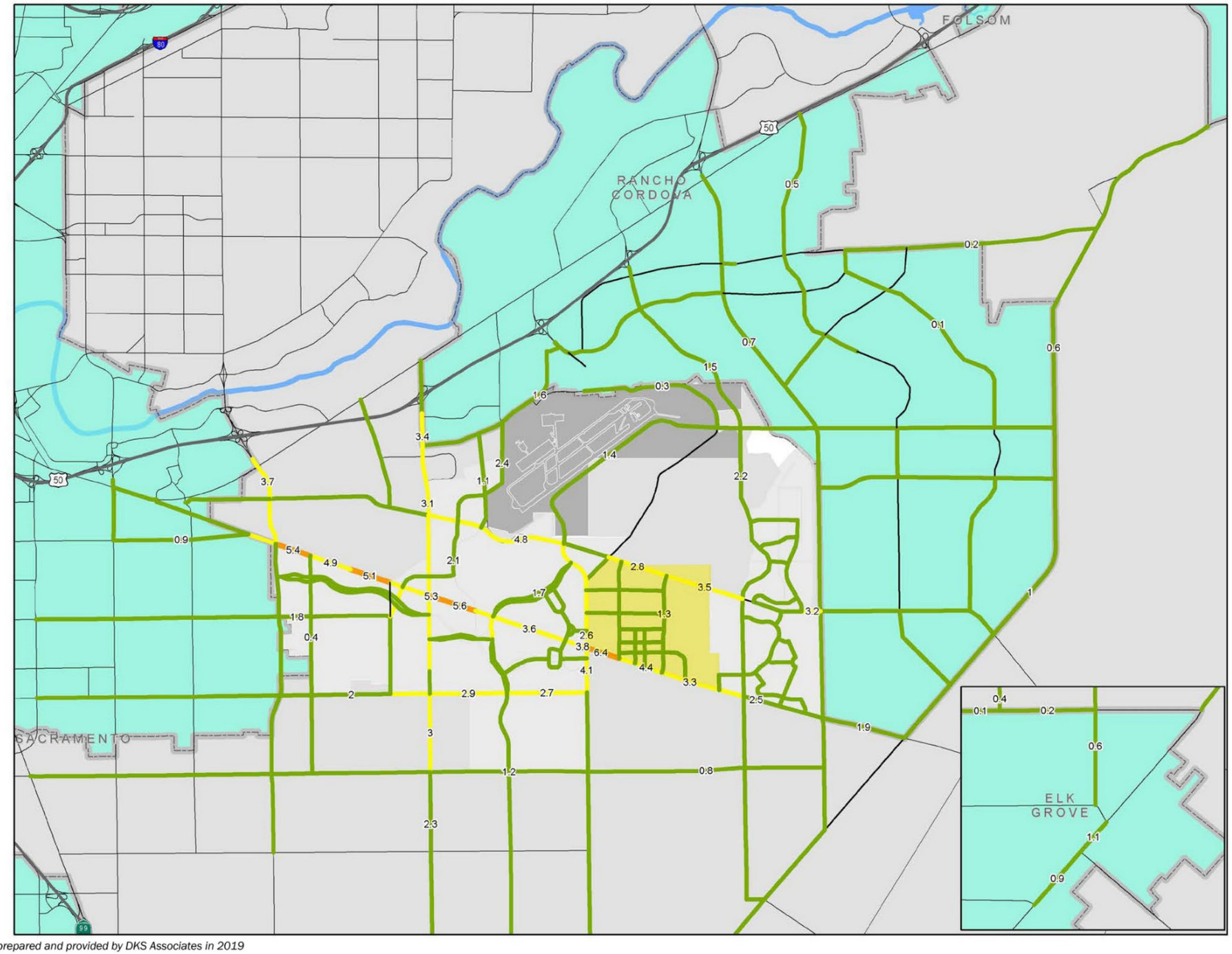
Plate SI-7: Cumulative Plus Jackson Corridor Projects (Project) Trip Distribution



Legend

- 0.0%
- 0.1% to 2.5%
- 2.6% to 5.0%
- 5.1% to 10.0%
- 10.0% and up
- Freeways
- Other Major Roadways
- Cities
- Mather Airport
- Jackson Township Project

Source: Image prepared and provided by DKS Associates in 2019

X15010101.09 067

Plate SI-8: Cumulative Plus Jackson Corridor Projects (Alternative 2) Trip Distribution

ASCENT ENVIRONMENTAL

Table SI-13 and **Table SI-14** summarize the vehicular (auto) trip generation of the Project and Alternative 2. **Table SI-13** and **Table SI-14** also show the vehicle trips generated during the a.m. and p.m. peak hours.

Table SI-13: Estimated Daily Vehicle Trip Generation (Cumulative Plus Jackson Township Project [Project] Scenario)

Trip Type		A.M. Peak Hour	P.M. Peak Hour	Daily
Total Vehicle Trip Ends		10,419	10,878	118,567
Percent Internal Trip Ends[1]		19.4%	21.4%	20.6%
Vehicle trips	Internal to Project	1,012	1,163	12,229
	External to Project	8,395	8,553	94,111
	Total	9,407	9,716	106,340

[1] Both trip ends within the project.
Source: DKS Associates, 2018.

Table SI-14: Estimated Daily Vehicle Trip Generation (Cumulative Plus Jackson Township Project [Alternative 2] Scenario)

Trip Type		A.M. Peak Hour	P.M. Peak Hour	Daily
Total Vehicle Trip Ends		7,321	11,123	84,170
Percent Internal Trip Ends[1]		15.7%	18.5%	17.0%
Vehicle trips	Internal to Project	574	1,029	7,155
	External to Project	6,173	9,066	69,860
	Total	6,747	10,094	77,015

[1] Both trip ends within the project.
Source: DKS Associates 2019

TRIP DISTRIBUTION

The distribution of trips associated with development on the Project and Alternative 2, as analyzed in the Transportation Report were derived utilizing SACSIM, incorporating the proposed land use and access locations associated with the Plan Area. Trip distribution varies by land use and time period. Plate SI-9 and Plate SI-10 illustrates the overall trip distribution of daily Jackson Township Project trips under the Project and Alternative 2, respectively.

DYNAMIC IMPLEMENTATION TOOL

As described in Chapter 20, 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 20 for additional details.

CUMULATIVE IMPACTS EVALUATION

CUMULATIVE PLUS JACKSON CORRIDOR PROJECTS

CUMULATIVE ROADWAY SEGMENT OPERATIONS

PROJECT

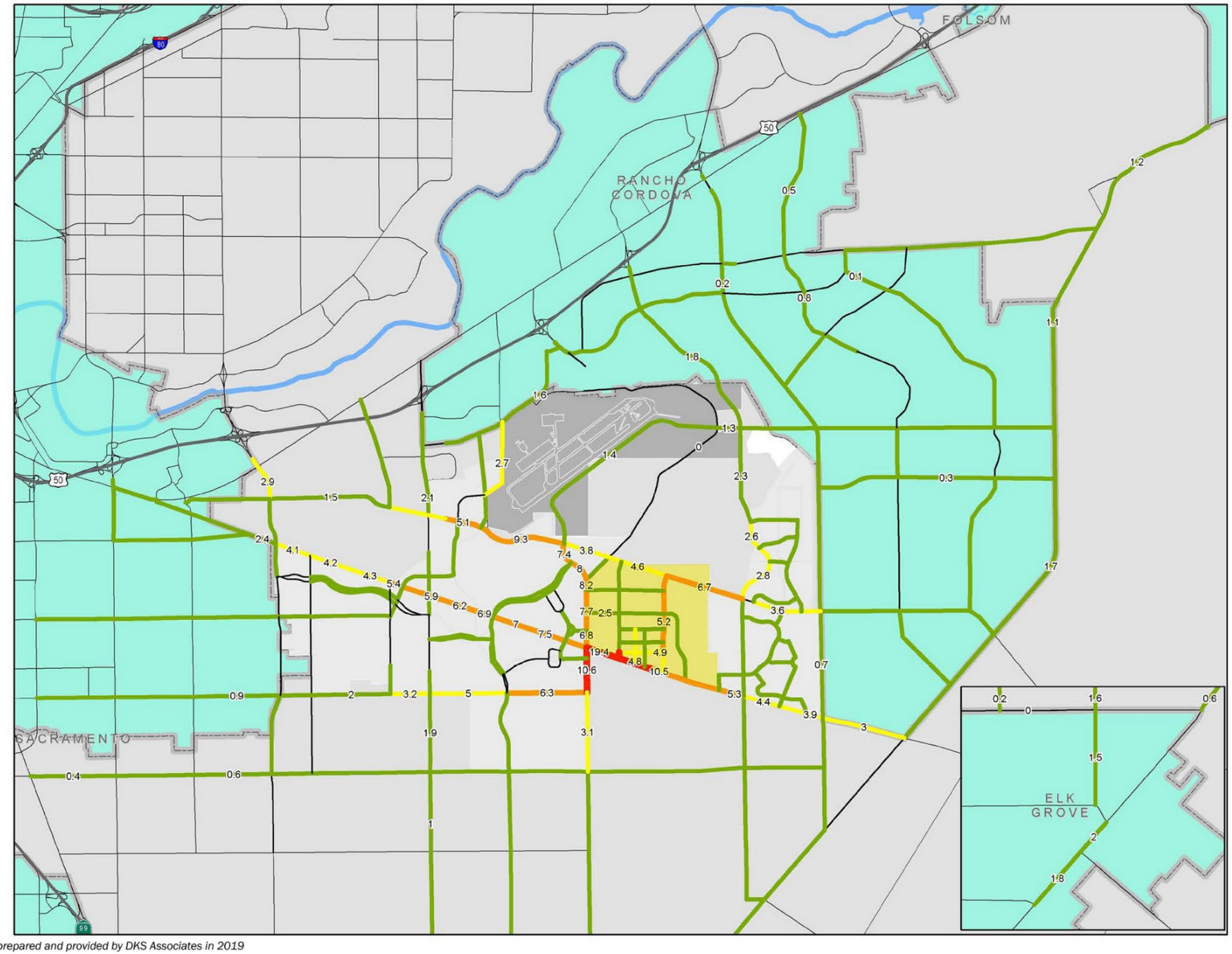
Table SI-15 shows the operations analysis for the traffic study area roadway segments that would experience significant impacts under the Cumulative Plus Jackson Corridor Projects (Project) scenario. The table includes the new roadways and/or widened roadways, the project(s) responsible for the roadway improvements, and the roadway segments where a LOS impact occurs. **Plate SI-15** illustrates the resultant traffic operating conditions associated with the Cumulative Plus Jackson Corridor Projects (Project) 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 SI-15**, 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.

ALTERNATIVE 2

Table SI-16 shows the operations analysis for the traffic study area roadway segments that would experience significant impacts under the Cumulative Plus Jackson Corridor Projects (Alternative 2) scenario. **Plate SI-12** illustrates the resultant traffic operating conditions associated with the Cumulative Plus Jackson Corridor Projects (Alternative 2) scenario. Detailed roadway segment operations calculations and the full list of study area roadway segment operating conditions are included in Appendix TR-1.

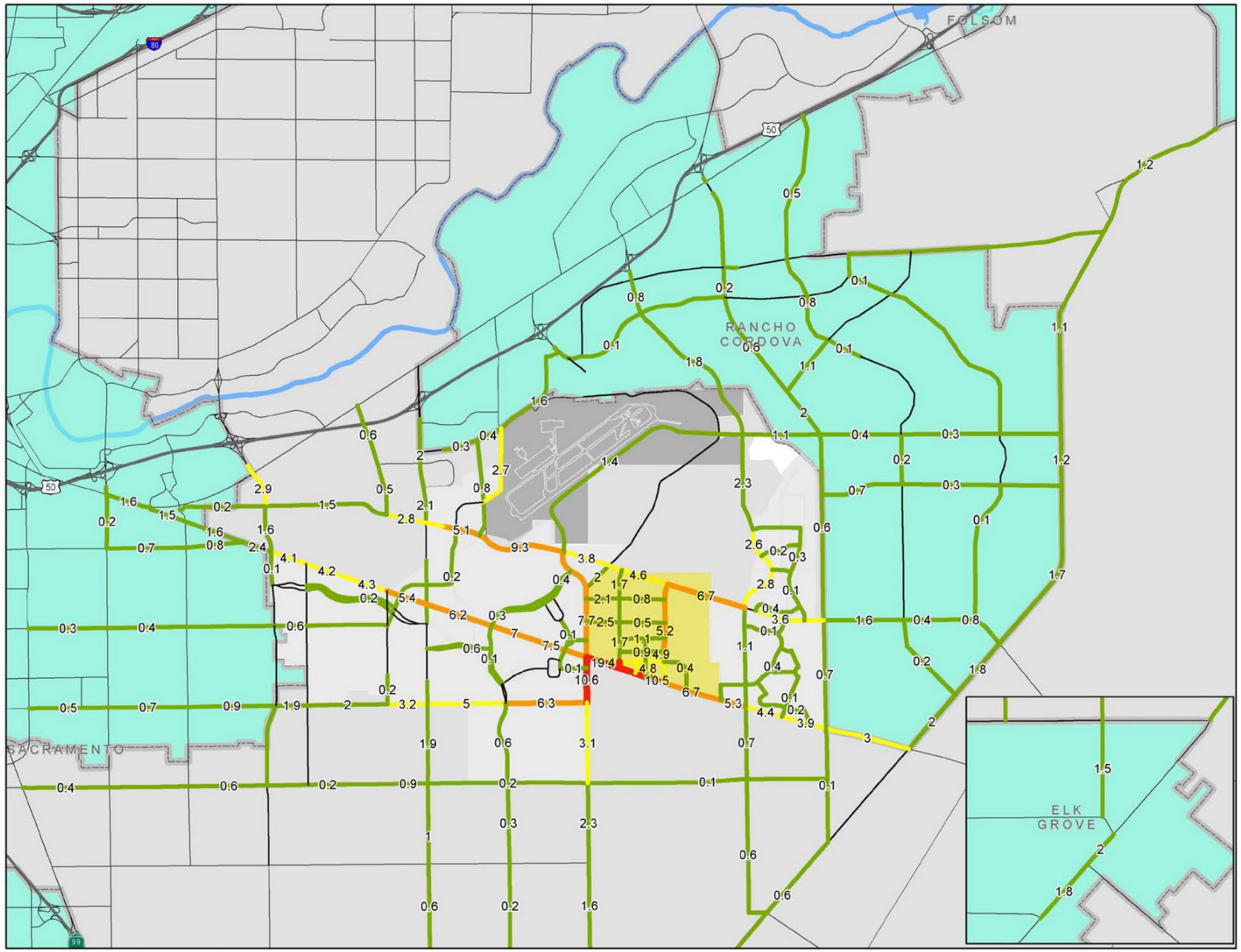
As shown in **Table SI-16**, the addition of vehicle trips generated by the Jackson Corridor Projects would result in the exceedance of applicable LOS and V/C thresholds along 69 roadway segments in the study area. Thus, the project would have a **cumulatively considerable contribution** to a significant cumulative impact.



Source: Image prepared and provided by DKS Associates in 2019

X15010101.09 085

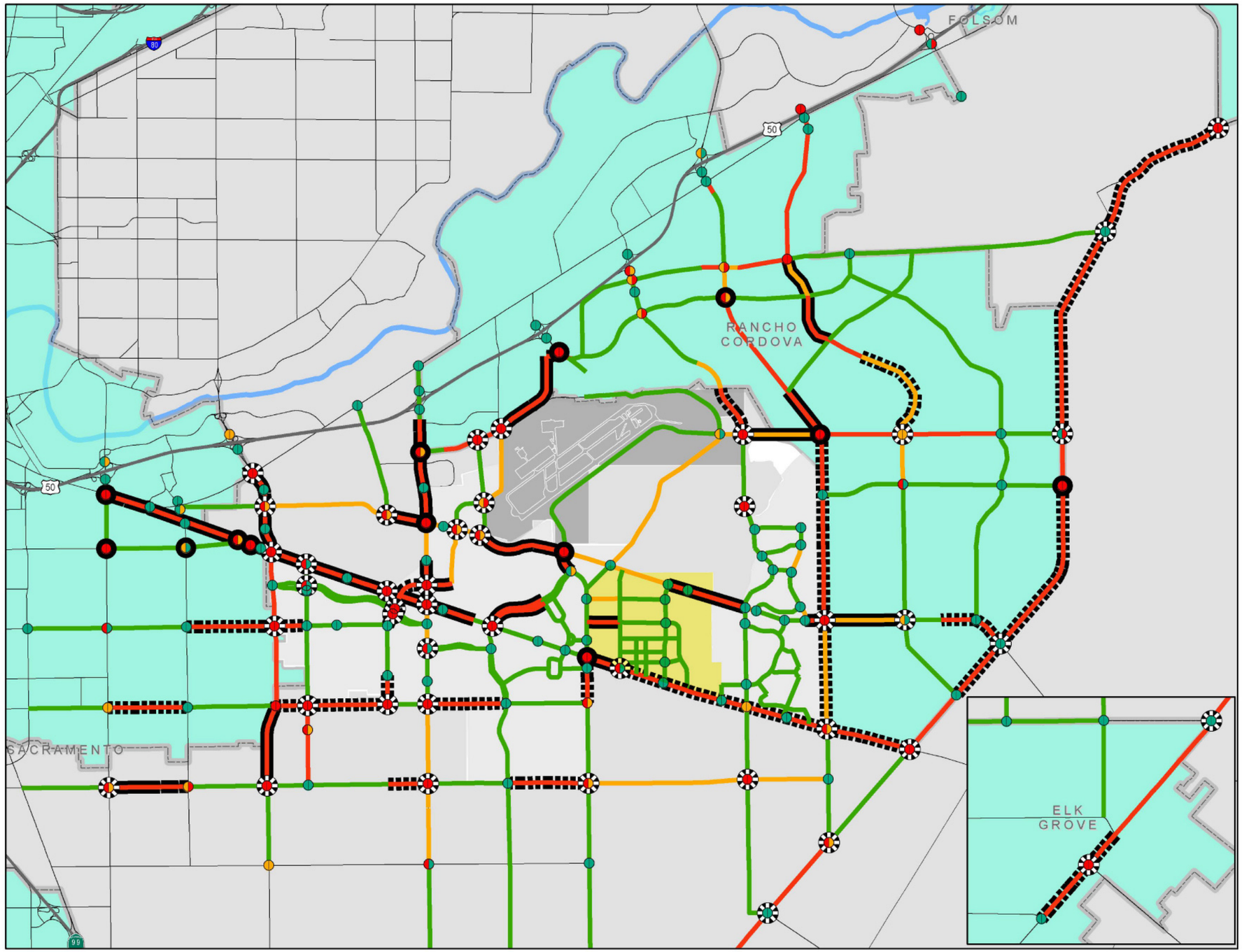
Plate SI-9: Cumulative Plus Jackson Township Project (Project) – Trip Distribution



Source: Image prepared and provided by DKS Associates in 2019

X15010101.09 071

Plate SI-10: Cumulative Plus Jackson Township Project (Alternative 2) – Trip Distribution



Legend

Intersections (AM Peak Hour)
- LOS A-D (84)
- LOS E (14)
- LOS F (56)

Intersections (PM Peak Hour)
- LOS A-D
- LOS E
- LOS F
- Mitigable Intersection Impact
- Unavoidable Intersection impact

Roadway Segments
- LOS A-D
- LOS E
- LOS

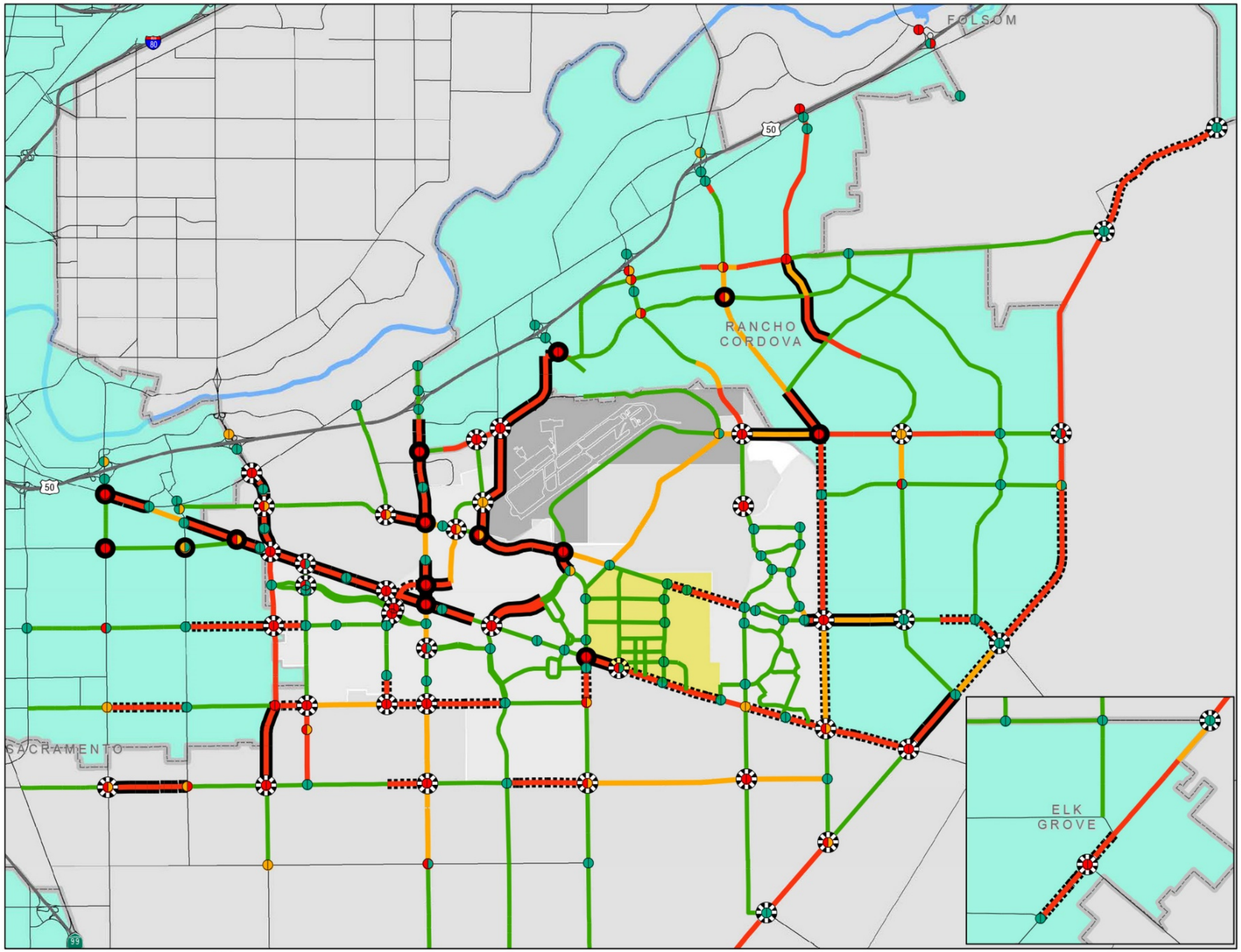
Impacts
- Unavoidable Segment Impact
- Mitigable Segment Impacts
- Cities
- Mather Airport
- Jackson Township Project

Source: Image prepared and provided by DKS Associates in 2019

X15010101.09 083

Plate SI-11: Cumulative Plus Jackson Corridor Projects (Project) – Roadway Segment and Intersection LOS and Impacts

ASCENT ENVIRONMENTAL



Legend

Intersections (AM Peak Hour)
- LOS A-D
- LOS E
- LOS F

Intersections (PM Peak Hour)
- LOS A-D
- LOS E
- LOS F
- Mitigable Intersection Impact
- Unavoidable Intersection Impact

Roadway Segments
- LOS A-D
- LOS E
- LOS F

Impacts
- Unavoidable Segment Impact
- Mitigable Segment Impact
- Cities
- Mather Airport
- Jackson Township Project

Source: Image prepared and provided by DKS Associates in 2019

X15010101.09 069

Plate SI-12: Cumulative Plus Jackson Corridor Projects (Alternative 2) – Roadway Segment and Intersection LOS and Impacts

ASCENT ENVIRONMENTAL

Table SI-15: Cumulative No Project and Cumulative Plus Jackson Corridor Projects (Project) 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	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
2	Bradshaw Rd	US 50	Lincoln Village Dr	6	Arterial M	66,770	1.24	F	6	Arterial M	85,400	1.58	F	
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	6	Arterial M	52,940	0.98	E	6	Arterial M	77,570	1.44	F	
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd	6	Arterial M	62,600	1.16	F	6	Arterial M	74,760	1.38	F	
5.1	Bradshaw Rd	Goethe Rd	Collector WJ-8	6	Arterial M	47,100	0.87	D	6	Arterial M	63,620	1.18	F	
5.2	Bradshaw Rd	Collector WJ-8	Kiefer Blvd	6	Arterial M	45,320	0.84	D	6	Arterial M	59,990	1.11	F	
6.1	Bradshaw Rd	Kiefer Blvd	Collector WJ-9	6	Arterial M	51,270	0.95	E	6	Arterial M	54,800	1.01	F	
6.2	Bradshaw Rd	Collector WJ-9	Mayhew Rd	6	Arterial M	52,070	0.96	E	6	Arterial M	55,140	1.02	F	
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	37,550	0.70	B	6	Arterial M	50,410	0.93	E	
19.1	Eagles Nest Rd	Kiefer Blvd	N Bridgewater Dr	2	Arterial M	4,620	0.26	A	4	Arterial M	10,850	0.30	A	NewBridge
19.2	Eagles Nest Rd	N Bridgewater Dr	S Bridgewater Dr	2	Arterial M	4,620	0.26	A	4	Arterial M	11,320	0.31	A	NewBridge
19.3	Eagles Nest Rd	S Bridgewater Dr	Jackson Rd	2	Arterial M	4,710	0.26	A	4	Arterial M	13,170	0.37	A	NewBridge
23	Elder Creek Rd	Power Inn Rd	Florin-Perkins Rd	2	Arterial M	25,170	1.40	F	2	Arterial M	28,490	1.58	F	
25	Elder Creek Rd	South Watt Ave	Hedge Ave	4	Arterial M	40,860	1.14	F	4	Arterial M	48,190	1.34	F	
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	17,980	0.50	A	4	Arterial M	40,630	1.13	F	
28.1	Elder Creek Rd	Bradshaw Rd	Vineyard Rd	2	Arterial M	9,230	0.51	A	3	Arterial M	33,740	1.87	F	West Jackson
28.2	Elder Creek Rd	Vineyard Rd	Excelsior Rd	2	Arterial M	9,430	0.52	A	4	Arterial M	27,000	0.75	C	West Jackson
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6	2	Arterial M	11,960	0.66	B	3	Arterial M	37,780	2.10	F	West Jackson
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd	2	Arterial M	11,960	0.66	B	3	Arterial M	37,130	2.06	F	West Jackson
32	Excelsior Rd	Elder Creek Rd	Florin Rd	2	Arterial M	4,670	0.26	A	3	Arterial M	12,510	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	43,980	1.22	F	
42.2	Florin Rd	Vineyard Rd	Excelsior Rd	2	Arterial M	11,650	0.65	B	3	Arterial M	19,620	1.09	F	West Jackson
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	50,520	1.40	F	4	Arterial M	55,790	1.55	F	
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	13,770	0.77	C	2	Arterial M	26,960	1.50	F	
48	Fruitridge Rd	South Watt Ave	Hedge Ave	2	Arterial M	5,770	0.32	A	3	Arterial M	20,600	1.14	F	West Jackson
49.1	Fruitridge Rd	Hedge Ave	Collector WJ-12	2	Arterial M	2,140	0.12	A	4	Arterial M	19,590	0.54	A	West Jackson
49.2	Fruitridge Rd	Collector WJ-12	Mayhew Rd	2	Arterial M	2,110	0.12	A	4	Arterial M	17,810	0.49	A	West Jackson
51.2	Grant Line Rd	Chrysanthy Blvd	Kiefer Blvd	4	Arterial M	44,930	1.25	F	4	Arterial M	47,740	1.33	F	
52.1	Grant Line Rd	Kiefer Blvd	Rancho Cordova Pkwy	4	Arterial M	34,170	0.95	E	4	Arterial M	37,000	1.03	F	
56	Grant Line Rd	Sheldon Rd	Wilton Rd	4	Arterial M	40,570	1.13	F	4	Arterial M	45,270	1.26	F	
57	Grant Line Rd	Wilton Rd	Bond Rd	4	Arterial M	36,110	1.00	F	4	Arterial M	40,140	1.12	F	
58.2	Happy Lane	Routier Ext	Kiefer Boulevard	2	Arterial M	4,970	0.28	A	2	Arterial M	20,770	1.15	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	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	67,180	1.24	F	6	Arterial M	71,330	1.32	F	
66.1	Jackson Rd	Florin Perkins Rd	14th Ave	4	Arterial M	30,980	0.86	D	4	Arterial M	43,840	1.22	F	
66.2	Jackson Rd	14th Ave	Rock Creek Pkwy	4	Arterial M	40,320	1.12	F	4	Arterial M	61,500	1.71	F	
66.3	Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy	4	Arterial M	34,630	0.96	E	4	Arterial M	57,370	1.59	F	
66.4	Jackson Rd	Aspen 1 Dwy	South Watt Ave	4	Arterial M	32,480	0.90	E	4	Arterial M	55,060	1.53	F	
67	Jackson Rd	South Watt Ave	Hedge Ave	4	Arterial M	38,240	1.06	F	4	Arterial M	67,850	1.88	F	
68.1	Jackson Rd	Hedge Ave	Collector WJ-3	4	Arterial M	31,080	0.86	D	4	Arterial M	60,230	1.67	F	
68.2	Jackson Rd	Collector WJ-3	Mayhew Rd	4	Arterial M	31,040	0.86	D	4	Arterial M	60,910	1.69	F	
69	Jackson Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	33,920	0.94	E	6	Arterial M	59,440	1.10	F	West Jackson
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4	2	Rural Hwy	23,120	1.01	F	6	Arterial M	59,220	1.10	F	West Jackson
70.2	Jackson Rd	Collector WJ-4	Happy Ln	2	Rural Hwy	23,190	1.01	F	6	Arterial M	59,210	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	41,240	0.76	C	West Jackson
70.4	Jackson Rd	Rock Creek Pkwy	Collector WJ-5	2	Rural Hwy	23,000	1.00	F	6	Arterial M	40,890	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	38,420	0.71	C	West Jackson
70.6	Jackson Rd	Collector WJ-6	Excelsior Rd	2	Rural Hwy	23,010	1.00	F	6	Arterial M	38,840	0.72	C	West Jackson
71.1	Jackson Rd	Excelsior Rd	Collector JT-3	2	Rural Hwy	23,020	1.01	F	4	Arterial M	62,440	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	40,520	1.13	F	Jackson Township
71.4	Jackson Rd	Collector JT-4	Eagles Nest Rd	2	Rural Hwy	23,020	1.01	F	4	Arterial M	37,510	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	37,200	1.03	F	NewBridge
72.2	Jackson Rd	Rockbridge Dr	Sunrise Blvd	2	Rural Hwy	22,630	0.99	E	4	Arterial M	38,040	1.06	F	NewBridge
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	4	Arterial M	31,730	0.88	D	4	Arterial M	45,430	1.26	F	
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd	4	Arterial M	13,290	0.37	A	4	Arterial M	42,880	1.19	F	
77.1	Kiefer Boulevard	Bradshaw Road	Collector WJ-14	2	Arterial M	5,940	0.33	A	6	Arterial M	51,510	0.95	E	West Jackson
77.2	Kiefer Boulevard	Collector WJ-14	Routier Ext	2	Arterial M	6,100	0.34	A	6	Arterial M	47,760	0.88	D	West Jackson
77.3	Kiefer Boulevard	Routier Ext	Happy Lane	2	Arterial M	6,100	0.34	A	6	Arterial M	50,290	0.93	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	31,860	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	29,600	0.82	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	31,310	0.87	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	39,640	2.20	F	NewBridge

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	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
79	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	20,760	0.58	A	4	Arterial M	33,480	0.93	E	
89.1	Mayhew Rd	Jackson Rd	Rock Creek Pkwy	2	Arterial L	1,930	0.13	A	4	Arterial M	53,200	1.48	F	West Jackson
89.2	Mayhew Rd	Rock Creek Pkwy	Fruitridge Rd	2	Arterial L	1,930	0.13	A	4	Arterial M	52,650	1.46	F	West Jackson
93	Old Placerville Rd	Routier Rd	Rockingham Dr	4	Arterial M	24,070	0.67	B	4	Arterial M	36,370	1.01	F	
95	Rockingham Dr	Old Placerville Rd	Mather Field Rd	4	Arterial M	31,970	0.89	D	4	Arterial M	40,120	1.11	F	
96	South Watt Ave	Folsom Blvd	Kiefer Blvd	6	Arterial M	68,980	1.28	F	6	Arterial M	81,710	1.51	F	
97	South Watt Ave	Kiefer Blvd	Jackson Rd	6	Arterial M	67,470	1.25	F	6	Arterial M	70,440	1.30	F	
100	South Watt Ave	Elder Creek Rd	Florin Rd	6	Arterial M	55,580	1.03	F	6	Arterial M	61,020	1.13	F	
104.3	Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	6	Arterial M	54,110	1.00	F	6	Arterial M	64,030	1.19	F	
105	Sunrise Blvd	Douglas Rd	Kiefer Blvd	5	Arterial M	34,760	0.97	E	5	Arterial M	43,840	1.22	F	
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	4	Arterial M	30,000	0.83	D	4	Arterial M	34,190	0.95	E	
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	98,040	1.63	F	6	Arterial H	106,270	1.77	F	
117	White Rock Rd	Grant Line Rd	Prairie City Rd	4	Arterial H	53,780	1.34	F	4	Arterial H	55,950	1.40	F	
132	Kiefer Blvd	Americanos Blvd	Grant Line Rd	2	Arterial M	10,250	0.57	A	2	Arterial M	19,150	1.06	F	
135	Rancho Cordova Pkwy	White Rock Rd	International Dr	6	Arterial M	46,590	0.86	D	6	Arterial M	49,910	0.92	E	
136	Rancho Cordova Pkwy	International Dr	Rio Del Oro Pkwy	6	Arterial M	55,520	1.03	F	6	Arterial M	59,780	1.11	F	
200	Kiefer Blvd	Tree View Ln	Eagles Nest Rd						4	Arterial M	37,540	1.04	F	West Jackson; Jackson Township; NewBridge; Mather South
301	Douglas Rd	Rock Creek Pkwy	Kiefer Blvd	4	Arterial M	7,380	0.21	A	4	Arterial M	37,470	1.04	F	
302	Kiefer Blvd	Happy Ln	Douglas Rd						6	Arterial M	62,910	1.17	F	West Jackson
303	Kiefer Blvd	Douglas Rd	Excelsior Rd						4	Arterial M	33,240	0.92	E	West Jackson
304	Mayhew Rd	Routier Ext	Bradshaw Rd						4	Arterial M	39,790	1.11	F	West Jackson
305	Mayhew Rd	Bradshaw Rd	Jackson Rd						4	Arterial M	47,420	1.32	F	West Jackson
306	Mayhew Rd	Fruitridge Rd	Collector WJ-13						4	Arterial M	39,410	1.09	F	West Jackson
307	Mayhew Rd	Collector WJ-13	Elder Creek Rd						3	Arterial M	42,630	2.37	F	West Jackson
308	Rock Creek Pkwy	South Watt Ave	Hedge Ave						2	Arterial M	6,140	0.34	A	West Jackson
309	Rock Creek Pkwy	Hedge Ave	Mayhew Rd						2	Arterial M	11,590	0.64	B	West Jackson
310	Rock Creek Pkwy	Mayhew Rd	Bradshaw Rd						2	Arterial M	6,840	0.38	A	West Jackson
311	Rock Creek Pkwy East	Excelsior Road	Collector WJ-16						2	Arterial M	13,750	0.76	C	West Jackson
312	Rock Creek Pkwy East	Collector WJ-16	Jackson Road						2	Arterial M	19,410	1.08	F	West Jackson
313	Vineyard Rd	Jackson Road	New Collector						4	Arterial M	31,230	0.87	D	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	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
314	Vineyard Rd	New Collector	Collector WJ-18						4	Arterial M	26,470	0.74	C	West Jackson
315	Vineyard Rd	Collector WJ-18	Elder Creek Road						4	Arterial M	25,960	0.72	C	West Jackson
316	Vineyard Rd	Elder Creek Road	Florin Road						4	Arterial M	14,250	0.40	A	West Jackson
317	Routier Ext	Old Placerville Road	Happy Lane						4	Arterial H	41,580	1.04	F	West Jackson
318	Routier Ext	Happy Lane	Kiefer Boulevard						4	Arterial H	34,490	0.86	D	West Jackson
319	Routier Ext	Kiefer Boulevard	Mayhew Road						4	Arterial H	39,540	0.99	E	West Jackson
320	Collector WJ-16	Rock Creek Pkwy	Collector WJ-6						2	Res Collector F	980	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	2,740	0.34	B	West Jackson
323	Collector WJ-6	Jackson Road	Collector WJ-18						2	Res Collector F	3,680	0.46	C	West Jackson
324	Collector WJ-2	Excelsior Road	Collector WJ-6						2	Res Collector F	2,940	0.37	B	West Jackson
325	Collector WJ-18	Vineyard Rd	Collector WJ-6						2	Res Collector F	3,430	0.43	C	West Jackson
326	Collector WJ-18	Collector WJ-6	Excelsior Road						2	Res Collector F	3,200	0.40	C	West Jackson
327	Collector WJ-19	Bradshaw Road	Vineyard Road						2	Arterial M	7,730	0.43	A	West Jackson
400	Collector JT-1	Excelsior Rd	Collector JT-3						2	Res Collector F	5,430	0.68	D	Jackson Township
401	Collector JT-1	Collector JT-3	Tree View Ln						2	Res Collector F	1,720	0.22	B	Jackson Township
402	Collector JT-3	Kiefer Blvd	Collector JT-1						2	Res Collector F	1,290	0.16	A	Jackson Township
403	Collector JT-3	Collector JT-1	Collector JT-6						2	Res Collector F	1,280	0.16	A	Jackson Township
404	Collector JT-3	Collector JT-6	Collector JT-5						2	Res Collector F	2,920	0.37	B	Jackson Township
405	Collector JT-3	Collector JT-5	Jackson Rd						2	Arterial M	20,320	1.13	F	Jackson Township
406	Collector JT-4	Jackson Rd	Bridgewater Dr						2	Arterial M	2,860	0.16	A	Jackson Township
407	Collector JT-5	Collector JT-3	Tree View Ln						2	Arterial M	10,040	0.56	A	Jackson Township
408	Collector JT-6	Excelsior Rd	Collector JT-3						2	Res Collector F	4,760	0.60	C	Jackson Township
409	Collector JT-6	Collector JT-3	Tree View Ln						2	Res Collector F	720	0.09	A	Jackson Township
410	Kiefer Blvd	Excelsior Rd	Tree View Ln						4	Arterial M	31,550	0.88	D	Jackson Township
411	Tree View Ln	Kiefer Blvd	Collector JT-1						4	Arterial M	11,780	0.33	A	Jackson Township
412	Tree View Ln	Collector JT-1	Collector JT-6						4	Arterial M	11,530	0.32	A	Jackson Township
413	Tree View Ln	Collector JT-6	Collector JT-5						4	Arterial M	11,460	0.32	A	Jackson Township
414	Tree View Ln	Collector JT-5	Jackson Rd						4	Arterial M	8,420	0.23	A	Jackson Township
415	Collector JT-7	Collector JT-3	Tree View Ln						2	Arterial M	1,800	0.10	A	Jackson Township
416	Collector JT-8	Collector JT-3	Tree View Ln						2	Arterial M	1,900	0.11	A	Jackson Township
417	Collector JT-9	Jackson Rd	Collector JT-8						2	Arterial M	3,830	0.21	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	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
418	Collector JT-10	Jackson Rd	Collector JT-8						2	Arterial M	1,680	0.09	A	Jackson Township
419	Collector JT-6	Tree View Ln	Jackson Rd						2	Res Collector F	2,400	0.30	B	Jackson Township
500	S Bridgewater Dr	Collector JT-4	Eagles Nest Rd						2	Res Collector F	4,540	0.57	C	NewBridge
501	S Bridgewater Dr	Eagles Nest Rd	Northbridge Dr						2	Res Collector F	4,550	0.57	C	NewBridge
502	N Bridgewater Dr	Northbridge Dr	Eagles Nest Rd						2	Res Collector F	1,270	0.16	A	NewBridge
503	Northbridge Dr	Kiefer Blvd	Bridgewater Dr						2	Arterial M	4,150	0.23	A	NewBridge
504	Street A	S Bridgewater Dr	Street B						2	Res Collector F	1,790	0.22	B	NewBridge
505	Street B	S Bridgewater Dr	Street A						2	Res Collector F	1,390	0.17	A	NewBridge
506	Rockbridge Dr	Street B	Stonebridge Dr						2	Res Collector F	1,840	0.23	B	NewBridge
507	Rockbridge Dr	Stonebridge Dr	Jackson Rd						2	Arterial M	7,660	0.43	A	NewBridge
508	Stonebridge Dr	S Bridgewater Dr	Rockbridge Dr						2	Arterial M	2,490	0.14	A	NewBridge
509	Stonebridge Dr	Rockbridge Dr	Jackson Rd						2	Res Collector F	4,520	0.57	C	NewBridge
600	Collector MS-1	Kiefer Boulevard	Collector MS-5						2	Arterial M	16,820	0.93	E	Mather South
601	Collector MS-1	Collector MS-5	Collector MS-4						2	Arterial M	7,640	0.42	A	Mather South
602	Collector MS-1	Collector MS-4	Collector MS-3						2	Res Collector F	6,430	0.80	E	Mather South
603	Collector MS-1	Collector MS-3	Collector MS-2						2	Arterial M	3,130	0.17	A	Mather South
604	Collector MS-2	Eagles Nest Road	Collector MS-5						2	Arterial M	8,930	0.50	A	Mather South
605	Collector MS-3	Eagles Nest Road	Collector MS-5						2	Arterial M	6,730	0.37	A	Mather South
606	Collector MS-4	Eagles Nest Road	Collector MS-5						2	Arterial M	7,090	0.39	A	Mather South
607	Collector MS-5	Kiefer Boulevard	Collector MS-1						2	Arterial M	8,870	0.49	A	Mather South

Note: Gray shading indicates 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

Bold values do not meet LOS policy. Red values with light gray shading indicate project impacts.

Source: DKS Associates 2019

Table SI-16: Cumulative No Project and Cumulative Plus Jackson Corridor Projects (Alternative 2) 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	
58.1	Happy Lane	Old Placerville Road	Routier Ext	2	Arterial M	3,980	0.22	A	2	Arterial M	13,820	0.77	C	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	
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
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	Rock Creek Pkwy	Commercial Access	2	Rural Hwy	23,000	1.00	F	6	Arterial M	41,550	0.77	C	West Jackson
70.4	Jackson Rd	Commercial Access	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 Boulevard	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 Boulevard	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 Boulevard	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

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	
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	West Jackson; Jackson Township; NewBridge; Mather South
300	Douglas Rd	Excelsior Rd	Rock Creek Pkwy	4	Arterial M	7,380	0.21	A	4	Arterial M	27,160	0.75	C	West Jackson
301	Douglas Rd	Rock Creek Pkwy	Kiefer Blvd	4	Arterial M	7,380	0.21	A	4	Arterial M	36,990	1.03	F	West Jackson
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
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

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	
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

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	
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
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

Note: Gray shading indicates 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

Bold values do not meet LOS policy. Red values with light gray shading indicate project impacts.

Source: DKS Associates 2019

Mitigation Measures

CU-TR-1. Cumulative Roadway Segment Operations.

The project applicant shall implement Mitigation Measures TR-1, TR-2, and TR-3. The project applicant shall implement the set of improvements assigned to the project by the Tool (Mitigation Measure TR-1). Where feasible, the number of roadway lanes would be 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.

PROJECT

- The project applicant shall implement Mitigation Measures TR-1, TR-2, TR-3, and CU-TR-1.

Implementation of mitigation TR-1, TR-2, TR-3, and CU-TR-1 would result in fair share payments toward improvements that would reduce the cumulative roadway segment impacts of the Project. As shown in **Table SI-17**, 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 Jackson Township 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. Constraints to the implementation of mitigation measures (e.g., maximum general plan lanes, existing development) are identified in the "Constraint if Full Mitigation Not Possible" column. Alternative Mitigation is subject to the same constraints as the primary mitigation.

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. Detailed intersection operations calculations and the full list of study area intersection operating conditions are included in Appendix TR-1.

As shown in **Table SI-17**, 37 roadway segments would still operate at unacceptable levels with implementation of mitigation. Mitigation would generally involve improvements within the alignment or widening of the roadway. However, because three of the study area roadway segments have reached the maximum number of lanes allowed under the General Plan, there is no additional feasible mitigation to improve the LOS along these roadway segment to an acceptable level. The programmatic impacts of constructing these improvements have been evaluated within the scope of the technical sections of this Draft EIR.

Further, while implementation of Mitigation Measure TR-1, TR-2, TR-3, 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 the Project Applicant 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**.

ALTERNATIVE 2

- The project applicant shall implement Mitigation Measures TR-1, TR-2, TR-3, and CU-TR-1.

Similar to the Project, implementation of Mitigation Measures TR-1, TR-2, TR-3, and CU-TR-1 would result in fair share payments toward improvements that would reduce the cumulative roadway segment impacts of Alternative 2. Detailed operations calculations and the full list of study area facility operating conditions are included in Appendix TR-1.

As shown in Table SI-14, 41 roadway segments would still operate at unacceptable levels with implementation of mitigation. Mitigation would generally involve improvements within the alignment or widening of the roadway. However, because three of the study area roadway segments have reached the maximum number of lanes allowed under the General Plan, there is no additional feasible mitigation to improve the LOS along these roadway segment to an acceptable level. The programmatic impacts of constructing these improvements have been evaluated within the scope of the technical sections of this Draft EIR.

Similar to the Project, while implementation of Mitigation Measure TR-1, TR-2, TR-3, and CU-TR-1 under Alternative 3 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 the Project Applicant 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, Alternative 2 would have a substantial contribution to a significant cumulative impact. This impact would be considerable and **significant and unavoidable**.

Table SI-17: Cumulative Plus Jackson Corridor Projects (Project) 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	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
2	Bradshaw Rd	US 50	Lincoln Village Dr	6	Arterial M	85,400	1.58	F	6	Arterial M	1.58	F	Yes		Maximum General Plan lanes
3	Bradshaw Rd	Lincoln Village Dr	Old Placerville Rd	6	Arterial M	77,570	1.44	F	6	Arterial M	1.44	F	Yes		Maximum General Plan lanes
4	Bradshaw Rd	Old Placerville Rd	Goethe Rd	6	Arterial M	74,760	1.38	F	6	Arterial M	1.38	F	Yes		Maximum General Plan lanes
5.1	Bradshaw Rd	Goethe Rd	Collector WJ-8	6	Arterial M	63,620	1.18	F	6	Arterial M	1.18	F	Yes		Maximum General Plan lanes
5.2	Bradshaw Rd	Collector WJ-8	Kiefer Blvd	6	Arterial M	59,990	1.11	F	6	Arterial M	1.11	F	Yes		Maximum General Plan lanes
6.2	Bradshaw Rd	Collector WJ-9	Mayhew Rd	6	Arterial M	55,140	1.02	F	6	Arterial M	1.02	F	Yes		Maximum General Plan lanes
6.3	Bradshaw Rd	Mayhew Rd	Jackson Rd	6	Arterial M	52,240	0.97	E	6	Arterial M	0.97	E	Yes		Maximum General Plan lanes
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	50,410	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	28,490	1.58	F	4	Arterial M	0.79	C	No		
25	Elder Creek Rd	South Watt Ave	Hedge Ave	4	Arterial M	48,190	1.34	F	6	Arterial M	0.89	D	No		
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	40,630	1.13	F	6	Arterial M	0.75	C	No		
28.1	Elder Creek Rd	Bradshaw Rd	Vineyard Rd	3	Arterial M	33,740	1.87	F	4	Arterial M	0.94	E	No		
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6	3	Arterial M	37,780	2.10	F	6	Arterial M	0.70	B	No		
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd	3	Arterial M	37,130	2.06	F	6	Arterial M	0.69	B	No		
37	Florin Rd	Power Inn Rd	Florin-Perkins Rd	4	Arterial M	43,980	1.22	F	4	Arterial M	1.22	F	Yes		Maximum General Plan lanes
41	Florin Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	23,450	0.65	B					No		
42.2	Florin Rd	Vineyard Rd	Excelsior Rd	3	Arterial M	19,620	1.09	F	4	Arterial M	0.55	A	No		
44	Folsom Blvd	Howe Ave	Jackson Rd	4	Arterial M	55,790	1.55	F	4	Arterial M	1.55	F	Yes		Maximum General Plan lanes
47	Fruitridge Rd	Florin Perkins Rd	South Watt Ave	2	Arterial M	26,960	1.50	F	4	Arterial M	0.75	C	No		
48	Fruitridge Rd	South Watt Ave	Hedge Ave	3	Arterial M	20,600	1.14	F	4	Arterial M	0.57	A	No		
51.2	Grant Line Rd	Chrysanthy Blvd	Kiefer Blvd	4	Arterial M	47,740	1.33	F	4	Expressway	0.88	B	No		

ID	Roadway	Segment		Cumulative Plus Jackson Corridor Projects					Mitigated Cumulative Plus Jackson Corridor Projects						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
52.1	Grant Line Rd	Kiefer Blvd	Rancho Cordova Pkwy	4	Arterial M	37,000	1.03	F	4	Expressway	0.69	A	No		
56	Grant Line Rd	Sheldon Rd	Wilton Rd	4	Arterial M	45,270	1.26	F	4	Expressway	0.84	B	No		
57	Grant Line Rd	Wilton Rd	Bond Rd	4	Arterial M	40,140	1.12	F	4	Expressway	0.74	A	No		
58.2	Happy Ln	Routier Ext	Kiefer Blvd	2	Arterial M	20,770	1.15	F	4	Arterial M	0.58	A	No		
62	Howe Ave	US 50	Folsom Blvd	6	Arterial M	71,330	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	43,840	1.22	F	4	Arterial M	1.22	F	Yes		Maximum General Plan lanes
66.2	Jackson Rd	14th Ave	Rock Creek Pkwy	4	Arterial M	61,500	1.71	F	4	Arterial M	1.71	F	Yes		Maximum General Plan lanes
66.3	Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy	4	Arterial M	57,370	1.59	F	4	Arterial M	1.59	F	Yes		Maximum General Plan lanes
66.4	Jackson Rd	Aspen 1 Dwy	South Watt Ave	4	Arterial M	55,060	1.53	F	4	Arterial M	1.53	F	Yes		Maximum General Plan lanes
67	Jackson Rd	South Watt Ave	Hedge Ave	4	Arterial M	67,850	1.88	F	6	Arterial M	1.26	F	Yes		Maximum General Plan lanes
68.1	Jackson Rd	Hedge Ave	Collector WJ-3	4	Arterial M	60,230	1.67	F	6	Arterial M	1.12	F	Yes		Maximum General Plan lanes
68.2	Jackson Rd	Collector WJ-3	Mayhew Rd	4	Arterial M	60,910	1.69	F	6	Arterial M	1.13	F	Yes		Maximum General Plan lanes
69	Jackson Rd	Mayhew Rd	Bradshaw Rd	6	Arterial M	59,440	1.10	F	6	Arterial M	1.10	F	Yes		Maximum General Plan lanes
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4	6	Arterial M	59,220	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	59,210	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	62,440	1.73	F	6	Arterial M	1.16	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	40,520	1.13	F	6	Arterial M	0.75	C	No		
72.1	Jackson Rd	Eagles Nest Rd	Rockbridge Dr	4	Arterial M	37,200	1.03	F	6	Arterial M	0.69	B	No		
72.2	Jackson Rd	Rockbridge Dr	Sunrise Blvd	4	Arterial M	38,040	1.06	F	6	Arterial M	0.70	C	No		
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	4	Arterial M	45,430	1.26	F	6	Arterial M	0.84	D	No		
76	Kiefer Blvd	Mayhew Rd	Bradshaw Rd	4	Arterial M	42,880	1.19	F	4	Arterial M	1.19	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	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
78.4	Kiefer Blvd	E Collector MS-1	Sunrise Blvd	3	Arterial M	39,640	2.20	F	4	Arterial M	1.10	F	Yes		Maximum General Plan lanes
79	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	33,480	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	53,200	1.48	F	6	Arterial M	0.99	E	No		
89.2	Mayhew Rd	Rock Creek Pkwy	Fruitridge Rd	4	Arterial M	52,650	1.46	F	6	Arterial M	0.98	E	No		
93	Old Placerville Rd	Routier Rd	Rockingham Dr	4	Arterial M	36,370	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	40,120	1.11	F	4	Arterial M	1.11	F	Yes		Maximum General Plan lanes
96	South Watt Ave	Folsom Blvd	Kiefer Blvd	6	Arterial M	81,710	1.51	F	6	Arterial M	1.51	F	Yes		Maximum General Plan lanes
97	South Watt Ave	Kiefer Blvd	Jackson Rd	6	Arterial M	70,440	1.30	F	6	Arterial M	1.30	F	Yes		Maximum General Plan lanes
100	South Watt Ave	Elder Creek Rd	Florin Rd	6	Arterial M	61,020	1.13	F	6	Arterial M	1.13	F	Yes		Maximum General Plan lanes
104.3	Sunrise Blvd	Rio Del Oro Pkwy	Douglas Rd	6	Arterial M	64,030	1.19	F	6	Arterial M	1.19	F	Yes		Maximum General Plan lanes
105	Sunrise Blvd	Douglas Rd	Kiefer Blvd	5	Arterial M	43,840	1.22	F	6	Arterial M	0.81	D	No		
106	Sunrise Blvd	Kiefer Blvd	Jackson Rd	4	Arterial M	34,190	0.95	E	6	Arterial M	0.63	B	No		
110	Watt Ave	US 50	Folsom Blvd	6	Arterial H	106,270	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 M	55,950	1.55	F	4	Expressway	1.04	C	No		
132	Kiefer Blvd	Americanos Blvd	Grant Line Rd	2	Arterial M	19,150	1.06	F	4	Arterial M	0.53	A	No		
135	Rancho Cordova Pkwy	White Rock Rd	International Dr	6	Arterial M	49,910	0.92	E	6	Arterial M	0.92	E	Yes		Maximum General Plan lanes
136	Rancho Cordova Pkwy	International Dr	Rio Del Oro Pkwy	6	Arterial M	59,780	1.11	F	6	Arterial M	1.11	F	Yes		Maximum General Plan lanes
200	Kiefer Blvd	Tree View Ln	Eagles Nest Rd	4	Arterial M	37,540	1.04	F	4	Arterial M	1.04	F	Yes		Maximum General Plan lanes
301	Douglas Rd	Rock Creek Pkwy	Kiefer Blvd	4	Arterial M	37,470	1.04	F	4	Arterial M	1.04	F	Yes		Maximum General Plan lanes
302	Kiefer Blvd	Happy Ln	Douglas Rd	6	Arterial M	62,910	1.17	F	6	Arterial M	1.17	F	Yes		Maximum General Plan lanes
304	Mayhew Rd	Routier Ext	Bradshaw Rd	4	Arterial M	39,790	1.11	F	6	Arterial M	0.74	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	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
305	Mayhew Rd	Bradshaw Rd	Jackson Rd	4	Arterial M	47,420	1.32	F	6	Arterial M	0.88	D	No		
307	Mayhew Rd	Collector WJ-13	Elder Creek Rd	3	Arterial M	42,630	2.37	F	4	Arterial M	1.18	F	No		
312	Rock Creek Pkwy East	Collector WJ-16	Jackson Road	2	Arterial M	19,410	1.08	F	4	Arterial M	0.54	A	No		
317	Routier Ext	Old Placerville Road	Happy Lane	4	Arterial H	41,580	1.04	F							Maximum General Plan lanes
405	Collector JT-3	Collector JT-5	Jackson Rd	2	Arterial M	20,320	1.13	F	4	Arterial M	0.56	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.

Bold values do not meet LOS policy. Red values with light gray shading indicate project impacts.

Source: DKS Associates 2019

Table SI-18: Cumulative Plus Jackson Corridor Projects (Alternative 2) Roadway Segment Mitigations

ID	Roadway	Segment		Cumulative Plus Jackson Corridor Projects					Mitigated Cumulative Plus Jackson Corridor Projects						
		From	To	Travel Lanes	Facility Type1	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		

ID	Roadway	Segment		Cumulative Plus Jackson Corridor Projects					Mitigated Cumulative Plus Jackson Corridor Projects						
		From	To	Travel Lanes	Facility Type1	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
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	Expressway	0.88	B	No		
52.1	Grant Line Rd	Kiefer Blvd	Rancho Cordova Pkwy	4	Arterial H	37,030	0.93	E	4	Expressway	0.69	A	No		
56	Grant Line Rd	Sheldon Rd	Wilton Rd	4	Arterial M	45,430	1.26	F	4	Expressway	0.84	B	No		
57	Grant Line Rd	Wilton Rd	Bond Rd	4	Arterial M	40,370	1.12	F	4	Expressway	0.75	A	No		
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
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	Rock Creek Pkwy	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

ID	Roadway	Segment		Cumulative Plus Jackson Corridor Projects					Mitigated Cumulative Plus Jackson Corridor Projects						
		From	To	Travel Lanes	Facility Type1	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
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		
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		

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.
Bold values do not meet LOS policy. Red values with light gray shading indicate project impacts.
Source: DKS Associates 2019

CUMULATIVE INTERSECTION OPERATIONS

PROJECT

Table SI-19 and **Table SI-20** summarize the results of the operations analysis for the study area intersections under the Cumulative Plus Jackson Corridor Projects (Project) scenario. The tables include the implementation of intersection changes associated with the Jackson Corridor Projects. **Table SI-20** 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 SI-19** illustrate those locations with a LOS impact. **Plate SI-11** illustrates the resultant traffic operating conditions associated with the Cumulative Plus Jackson Corridor Projects (Project) 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 (Project) conditions:

- Happy Lane and Old Placerville Road
- Eagles Nest Road and Florin Road

As shown in **Table SI-19**, 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 Projects (Project) conditions. Thus, the project would have a considerable contribution to a significant cumulative impact.

ALTERNATIVE 2

Table SI-21 and **Table SI-22** summarize 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.

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 Alternative 2, the following unsignalized intersections would experience traffic volumes resulting in one or more traffic signal warrants being met:

- Happy Lane and Old Placerville Road
- Eagles Nest Road and Florin Road

As shown in **Table SI-21**, the addition of vehicle trips generated by project buildout would result in the exceedance of applicable LOS and delay thresholds under Cumulative Plus Jackson Corridor Projects (Alternative 2) conditions. Thus, the project would have a considerable contribution to a significant cumulative impact.

Table SI-19: Cumulative Plus Jackson Corridor Projects (Project) Intersection Levels of Service

	Intersection	A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Township 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	40.0	No	Signal	E	77.0	Signal	E	64.9	No
2	Howe Avenue & US 50 EB Ramps	Signal	C	34.6	Signal	D	49.1	No	Signal	B	16.5	Signal	C	22.5	No
3	Power Inn Road/Howe Avenue & Folsom Blvd	Signal	F	88.0	Signal	F	91.7	No	Signal	E	66.5	Signal	F	84.6	Yes
4	Power Inn Road & 14th Avenue	Signal	E	61.0	Signal	F	157.9	Yes	Signal	E	72.6	Signal	F	116.5	Yes
5	Power Inn Road & Fruitridge Road	Signal	F	114.5	Signal	F	113.5	No	Signal	D	47.4	Signal	D	48.8	No
6	Jackson Road/Notre Dame Dr. & Folsom Blvd.	Signal	C	27.7	Signal	C	32.1	No	Signal	C	24.1	Signal	D	40.6	No
7	Florin Perkins Road/Julliard Dr. & Folsom Boulevard	Signal	C	20.8	Signal	C	28.6	No	Signal	D	41.2	Signal	C	30.1	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*	*20.9*			*C*	*20.7*		*D*	*32.6*	
	Westbound Right Turn		*C*	*10.9*		*B*	*12.3*			*B*	*11.2*		*B*	*13.0*	
	Southbound Left Turn		*A*	*9.3*		*B*	*10.1*			*B*	*10.4*		*B*	*12.8*	
9	Florin Perkins Road & Jackson Road	Signal	C	25.1	Signal	D	42.9	No	Signal	D	38.5	Signal	D	46.5	No
10	Florin Perkins Road & Fruitridge Road	Signal	C	26.7	Signal	D	37.1	No	Signal	D	50.3	Signal	C	30.1	No
11	Florin Perkins Road & Elder Creek Road	Signal	C	31.7	Signal	C	27.5	No	Signal	C	30.0	Signal	C	32.8	No
12	Watt Avenue & Folsom Blvd.	Signal	F	169.1	Signal	F	180.3	Yes	Signal	F	140.0	Signal	F	203.6	Yes
13	S. Watt Ave. & Reith Ct/Manlove Road	Signal	B	15.7	Signal	B	12.7	No	Signal	A	9.8	Signal	B	11.0	No
14	S. Watt Avenue & Kiefer Blvd.	Signal	E	62.2	Signal	F	101.5	Yes	Signal	D	41.7	Signal	E	75.9	No
15	S. Watt Avenue & Canberra Dr.	Signal	B	13.4	Signal	B	13.1	No	Signal	A	9.1	Signal	A	9.0	No
16	S. Watt Avenue & Jackson Road	Signal	F	135.9	Signal	F	234.0	Yes	Signal	F	98.2	Signal	F	191.8	Yes
17	S. Watt Avenue & Fruitridge Road	Signal	D	44.4	Signal	E	71.5	Yes	Signal	E	79.3	Signal	F	102.4	Yes
18	S. Watt Avenue & Elder Creek Road	Signal	F	222.9	Signal	F	139.9	No	Signal	F	177.7	Signal	F	106.4	No
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	F	199.7	Signal	F	277.4	Yes	Signal	F	137.1	Signal	F	204.3	Yes
21	Elk Grove Florin Road & Gerber Road	Signal	E	56.7	Signal	E	71.0	No	Signal	E	74.9	Signal	E	79.7	No
23	Hedge Avenue & Jackson Road	Signal	C	34.7	Signal	F	128.3	Yes	Signal	B	16.3	Signal	D	40.4	40.4
24	Hedge Avenue & Fruitridge Road	All-way stop	E	44.2	All-way stop	C	25.5	No	All-way stop	D	30.7	All-way stop	B	18.6	No
25	Hedge Avenue & Elder Creek Road	Signal	F	103.7	Signal	F	109.3	Yes	Signal	F	103.2	Signal	F	122.4	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*	

	Intersection	A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
	Southbound Left Turn		*B*	*10.9*		*B*	*10.6*			*A*	*9.3*		*A*	*9.3*	
	Eastbound		*F*	*99.5*		*F*	*92.7*			*E*	*47.3*		*E*	*45.0*	
	Westbound		*F*	*52.9*		*E*	*49.4*			*E*	*38.3*		*E*	*36.3*	
27	Hedge Avenue & Florin Road	All-way stop	B	15.8	Signal	B	11.7	No	All-way stop	B	12.6	Signal	A	5.7	No
28	Mayhew Road & Kiefer Boulevard	Signal	C	27.7	Signal	F	97.5	Yes	Signal	D	44.9	Signal	E	72.8	No
29	Mayhew Road & Jackson Road	Two-way stop			Signal	F	160.2	Yes	Two-way stop			Signal	*F*	*129.9*	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	18.8	No	Two-way stop		3.5	Signal	B	19.5	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*	*85.7*			*A*	*9.0*		*F*	*247.0*	
	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	26.0	No	Signal	C	25.3	Signal	C	22.3	No
34	Bradshaw Road & US 50 WB Ramps	Signal	A	7.8	Signal	B	11.5	No	Signal	A	8.9	Signal	B	12.6	No
35	Bradshaw Road & US 50 EB Ramps	Signal	C	24.5	Signal	E	56.8	Yes	Signal	B	15.1	Signal	D	39.7	No
36	Bradshaw Road & Old Placerville Road	Signal	F	81.9	Signal	F	103.0	Yes	Signal	E	68.1	Signal	F	84.8	Yes
37	Bradshaw Road & Kiefer Boulevard	Signal	C	27.6	Signal	F	146.6	Yes	Signal	D	54.1	Signal	F	140.2	Yes
38	Bradshaw Road & Jackson Road	Signal	F	186.0	Signal	F	161.3	No	Signal	F	118.2	Signal	F	161.2	Yes
39	Bradshaw Road & Elder Creek Road	Signal	F	122.6	Signal	F	210.1	Yes	Signal	F	98.8	Signal	F	226.7	Yes
40	Bradshaw Road & Florin Road	Signal	F	129.5	Signal	F	112.4	No	Signal	E	59.7	Signal	E	57.0	No
41	Bradshaw Road & Gerber Road	Signal	F	83.1	Signal	F	84.3	No	Signal	D	43.0	Signal	D	49.2	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*	

	Intersection	A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
	Northbound Right Turn		*E*	*40.9*		*F*	*243.1*			*C*	*16.9*		*F*	*61.9*	
	Westbound Left Turn		*C*	*16.0*		*C*	*22.5*			*C*	*15.3*		E	42.4	
43	Happy Lane & Kiefer Boulevard	Free Turn			Signal	F	140.2	Yes	Free Turn			Signal	E	70.8	No
44	Excelsior Road & Kiefer Boulevard	Two-way stop			Signal	A	9.9	No	Two-way stop			Signal	B	14.8	No
45	Excelsior Road & Jackson Road	Signal	E	59.9	Signal	F	>300	Yes	Signal	D	39.0	Signal	F	280.2	Yes
46	Excelsior Road & Elder Creek Road	Two-way stop			Signal	F	88.7	Yes	Two-way stop			Signal	E	60.6	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	109.4	Yes	All-way stop	F	67.3	Signal	E	68.0	No
48	Excelsior Road & Gerber Road/Birch Ranch Drive	All-way stop	B	13.6	Signal	E	43.6	No	All-way stop	B	14.3	Signal	E	38.8	No
49	Mather Field Road & US 50 WB Ramps	Signal	B	14.4	Signal	B	18.4	No	Signal	A	8.6	Signal	A	9.8	No
50	Mather Field Road & US 50 EB Ramps	Signal	B	19.2	Signal	B	17.8	No	Signal	C	21.1	Signal	B	14.2	No
51	Mather Field Road & Rockingham Drive	Signal	F	156.5	Signal	F	304.1	Yes	Signal	F	119.4	Signal	F	169.0	Yes
52	Mather Boulevard & Douglas Road	All-way stop	E	55.6	Signal	E	57.6	No	All-way stop	C	27.2	Signal	D	41.0	No
53	Zinfandel Drive & US 50 WB Ramps	Signal	C	20.9	Signal	B	10.9	No	Signal	E	65.0	Signal	D	49.7	No
54	Zinfandel Drive & US 50 EB Ramps/Gold Center Drive	Signal	F	120.8	Signal	F	112.6	No	Signal	F	95.0	Signal	F	81.5	No
55	Zinfandel Drive & White Rock Road	Signal	E	76.3	Signal	E	68.8	No	Signal	F	117.3	Signal	F	115.5	No
56	Zinfandel Drive & Data Drive	Signal	B	18.9	Signal	B	18.9	No	Signal	C	25.6	Signal	C	26.6	No
57	Zinfandel Drive & International Dr	Signal	E	77.2	Signal	E	80.0	No	Signal	F	97.3	Signal	F	81.7	No
58	Zinfandel Drive & Douglas Road	Signal	F	156.8	Signal	F	219.8	Yes	Signal	E	73.1	Signal	F	218.2	Yes
59	Eagles Nest Road/Zinfandel Drive & Kiefer Boulevard	Two-way stop			Signal	D	45.7	No	Two-way stop			Signal	D	41.7	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	67.6	No	Signal	C	23.3	Signal	E	62.5	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*	*11.1*			*A*	*8.5*		*A*	*9.4*	

	Intersection	A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
	Westbound Left Turn		*A*	*0.0*		*A*	*8.3*			*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	B	19.8	No
63	Sunrise Boulevard & US 50 EB Ramps	Signal	B	10.2	Signal	A	9.9	No	Signal	B	12.7	Signal	B	13.4	No
64	Sunrise Boulevard & Folsom Boulevard	Signal	D	43.5	Signal	D	45.7	No	Signal	D	40.5	Signal	D	43.6	No
65	Sunrise Boulevard & White Rock Road	Signal	E	69.3	Signal	E	67.9	No	Signal	F	127.3	Signal	F	128.3	No
66	Sunrise Boulevard & International Drive/Monier Circle	Signal	F	109.1	Signal	F	111.4	No	Signal	F	81.3	Signal	E	79.1	No
67	Sunrise Boulevard & Douglas Road	Signal	F	140.5	Signal	F	192.2	Yes	Signal	E	73.5	Signal	F	107.9	Yes
68	Sunrise Boulevard & Chrysanthy Boulevard	Signal	C	21.4	Signal	B	17.7	No	Signal	A	9.4	Signal	B	10.7	No
69	Sunrise Boulevard & Kiefer Boulevard	Signal	F	151.0	Signal	F	>300	Yes	Signal	F	138.0	Signal	F	259.2	Yes
70	Sunrise Boulevard & Jackson Road	Signal	D	39.6	Signal	F	90.3	Yes	Signal	D	45.4	Signal	E	78.3	Yes
71	Sunrise Boulevard & Florin Road	Signal	D	50.3	Signal	C	22.1	No	Signal	E	57.4	Signal	D	46.1	No
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	F	91.2	Signal	F	127.9	Yes	Signal	C	33.1	Signal	E	65.0	Yes
73	Hazel Avenue & Tributary Point Drive/US 50 WB Off-ramp	Signal	F	148.3	Signal	F	149.0	No	Signal	F	103.3	Signal	F	102.5	No
74	Hazel Avenue & US 50 EB Ramps	Signal	B	16.4	Signal	B	17.7	No	Signal	F	83.6	Signal	F	85.2	No
76	Prairie City Road & White Rock Road	Signal	C	32.8	Signal	D	37.8	No	Signal	D	35.2	Signal	D	36.0	No
77	Grant Line Road & White Rock Road	Signal	C	26.1	Signal	B	16.0	No	Signal	C	29.8	Signal	C	24.3	No
78	Grant Line Road & Douglas Road	Signal	D	44.8	Signal	D	39.6	No	Signal	F	107.9	Signal	F	93.8	No
79	Grant Line Road & Kiefer Boulevard	Signal	B	12.5	Signal	B	14.9	No	Signal	B	10.6	Signal	B	16.7	No
80	Grant Line Road & Jackson Road	Signal	F	88.9	Signal	F	117.3	Yes	Signal	E	67.4	Signal	F	106.5	Yes
81	Watt Avenue & US-50 EB Ramps	Signal	C	23.3	Signal	C	29.4	No	Signal	B	15.6	Signal	B	19.5	No
82	Watt Avenue & US-50 WB Ramps	Signal	F	82.8	Signal	E	64.6	No	Signal	E	57.1	Signal	E	61.3	No
83	Mayhew Rd & Folsom Blvd.	Signal	B	12.8	Signal	C	20.7	No	Signal	B	15.8	Signal	B	19.6	No
84	65th Street Expy & Fruitridge Road	Signal	D	44.3	Signal	D	42.3	No	Signal	D	41.1	Signal	D	45.4	No
85	Power Inn Road & Elder Creek Road	Signal	E	67.3	Signal	E	75.1	No	Signal	D	45.0	Signal	E	61.8	No
86	Power Inn Road & Florin Rd	Signal	F	97.4	Signal	F	116.1	Yes	Signal	E	65.8	Signal	E	72.5	No
87	Florin Perkins Road & Florin Rd	Signal	D	44.2	Signal	E	59.3	No	Signal	F	107.4	Signal	F	113.8	Yes
88	Bradshaw Rd & Calvine Rd	Signal	C	26.4	Signal	D	38.6	No	Signal	C	20.9	Signal	C	23.1	No
89	Vineyard Rd & Calvine Rd	Signal	B	18.5	Signal	B	19.0	No	Signal	B	17.6	Signal	B	19.1	No
90	Excelsior Road & Calvine Rd	All-way stop	B	12.8	All-way stop	C	21.2	No	All-way stop	B	12.9	All-way stop	B	17.5	No

Intersection		A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	Signal	C	34.4	Signal	D	44.1	Yes	Signal	D	44.8	Signal	D	50.5	Yes
92	Grant Line Rd & Calvine Rd	Signal	C	32.4	Signal	D	37.0	Yes	Signal	C	33.3	Signal	C	27.4	No
93	Grant Line Rd & Dwy/Wilton Rd	Signal	E	78.8	Signal	F	83.4	No	Signal	E	69.8	Signal	F	97.4	Yes
94	Grant Line Rd & Bond Rd/Wrangler Dr	Signal	B	14.8	Signal	B	16.8	No	Signal	B	15.5	Signal	B	16.9	No
95	Florin Perkins Road & 14th Avenue	Signal	D	44.1	Signal	E	65.6	Yes	Signal	C	30.9	Signal	D	45.3	No
96	Jackson Road & 14th Avenue	Signal	F	91.0	Signal	F	119.8	Yes	Signal	B	15.3	Signal	D	54.7	No
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	146.3	No	Signal	F	117.9	Signal	F	101.0	No
100	Rancho Cordova Pkwy & US-50 EB Ramps	Signal	C	24.0	Signal	B	17.1	No	Signal	C	28.3	Signal	C	27.3	No
101	Rancho Cordova Pkwy & Easton Valley Pkwy	Signal	C	24.2	Signal	C	25.5	No	Signal	B	11.2	Signal	B	14.3	No
102	Rancho Cordova Pkwy & White Rock Road	Signal	F	221.3	Signal	F	209.0	No	Signal	F	135.5	Signal	F	125.2	No
103	Rancho Cordova Pkwy & Douglas Road	Signal	E	67.2	Signal	E	57.4	No	Signal	E	58.0	Signal	E	77.2	Yes
104	Rancho Cordova Pkwy & Chrysanthy Boulevard/Chrysanthy Blvd	Signal	F	105.7	Signal	F	91.1	No	Signal	D	54.9	Signal	D	54.5	No
105	Rancho Cordova Pkwy & Kiefer Blvd	Signal	B	17.9	Signal	C	20.7	No	Signal	B	16.1	Signal	B	19.5	No
106	Rancho Cordova Pkwy & Grant Line Road	Signal	E	78.8	Signal	D	39.9	No	Signal	C	28.8	Signal	B	14.3	No
107	Americanos Blvd & White Rock Road	Signal	A	9.5	Signal	A	8.7	No	Signal	A	9.5	Signal	A	8.6	No
108	Americanos Blvd & Douglas Road	Signal	C	34.9	Signal	D	47.3	No	Signal	C	22.4	Signal	C	22.7	No
109	Americanos Blvd & Chrysanthy Blvd	Signal	C	24.7	Signal	C	22.5	No	Signal	C	22.2	Signal	C	25.5	No
110	Americanos Blvd & Kiefer Blvd	Signal	A	7.6	Signal	A	8.7	No	Signal	A	7.3	Signal	B	10.1	No
111	Grant Line Road & Chrysanthy Blvd	Signal	E	72.0	Signal	E	64.0	Yes	Signal	E	57.5	Signal	D	52.4	No
112	Hazel Avenue & Easton Valley Pkwy	Signal	B	10.3	Signal	A	8.7	No	Signal	A	6.0	Signal	A	6.0	No
113	Excelsior Road & Collector WJ-1/Collector JT-1	West Jackson/Jackson Township Project Int.			Signal	C	26.3	No	West Jackson/Jackson Township Project Int.			Signal	C	21.4	No
114	Excelsior Road & Collector WJ-2/Collector JT-2	West Jackson/Jackson Township Project Int.			Signal	B	14.1	No	West Jackson/Jackson Township Project Int.			Signal	B	16.7	No
115	W Collector MS-1 & Kiefer Boulevard	Mather South Project Int.			Signal	B	16.8	No	Mather South Project Int.			Signal	B	12.8	No
116	Northbridge Dr & Kiefer Boulevard	NewBridge Project Int.			Signal	A	6.6	No	NewBridge Project Int.			Signal	A	6.7	No
117	E Collector MS-1 & Kiefer Boulevard	Mather South Project Int.			Signal	B	19.5	No	Mather South Project Int.			Signal	C	30.1	No
118	Collector WJ-3 & Jackson Road	West Jackson Project Int.			Signal	B	16.7	No	West Jackson Project Int.			Signal	B	12.9	No
119	Collector WJ-4 & Jackson Road	West Jackson Project Int.			Signal	C	24.8	No	West Jackson Project Int.			Signal	C	20.7	No
120	Rock Creek Pkwy & Jackson Road	West Jackson Project Int.			Signal	F	128.3	Yes	West Jackson Project Int.			Signal	F	96.4	Yes

Intersection		A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
121	Collector WJ-5 & Jackson Road	West Jackson Project Int.			Signal	B	14.0	No	West Jackson Project Int.			Signal	B	15.0	No
122	Collector WJ-6 & Jackson Road	West Jackson Project Int.			Signal	B	17.5	No	West Jackson Project Int.			Signal	B	15.8	No
123	Excelsior Road & Collector WJ-6	West Jackson Project Int.			Signal	D	46.1	No	West Jackson Project Int.			Signal	B	16.5	No
124	S. Watt Avenue & Rock Creek Pkwy	West Jackson Project Int.			Signal	B	16.1	No	West Jackson Project Int.			Signal	B	13.5	No
125	Hedge Avenue & Rock Creek Pkwy Westbound	West Jackson Project Int.			Round	E	49.0	No	West Jackson Project Int.			Round	A	9.9	No
126	Hedge Avenue & Rock Creek Pkwy Eastbound	West Jackson Project Int.			Round	B	12.3	No	West Jackson Project Int.			Round	D	28.5	No
127	Mayhew Road & Rock Creek Pkwy Westbound	West Jackson Project Int.			Round	F	297.2	Yes	West Jackson Project Int.			Round	F	210.1	Yes
128	Mayhew Road & Rock Creek Pkwy Eastbound	West Jackson Project Int.			Round	F	191.0	Yes	West Jackson Project Int.			Round	F	>300	Yes
129	Bradshaw Road & Rock Creek Pkwy	West Jackson Project Int.			Signal	B	17.8	No	West Jackson Project Int.			Signal	D	50.3	No
130	Vineyard Road & Rock Creek Pkwy	West Jackson Project Int.			Signal	B	10.1	No	West Jackson Project Int.			Signal	C	22.4	No
131	Douglas Road & Rock Creek Pkwy	West Jackson Project Int.			Signal	D	35.8	No	West Jackson Project Int.			Signal	E	62.2	No
132	Bradshaw Road & Collector WJ-8	West Jackson Project Int.			Signal	B	12.5	No	West Jackson Project Int.			Signal	A	6.4	No
133	Bradshaw Road & Collector WJ-9	West Jackson Project Int.			Signal	B	10.2	No	West Jackson Project Int.			Signal	A	5.7	No
134	Bradshaw Road & Mayhew Road	West Jackson Project Int.			Signal	F	163.9	Yes	West Jackson Project Int.			Signal	F	128.4	Yes
135	Bradshaw Road & Collector WJ-10	West Jackson Project Int.			Signal	F	190.9	Yes	West Jackson Project Int.			Signal	C	28.5	No
136	Bradshaw Road & Collector WJ-11	West Jackson Project Int.			Signal	A	8.1	No	West Jackson Project Int.			Signal	B	15.0	No
137	Collector WJ-12 & Fruitridge Road	West Jackson Project Int.			Signal	A	6.6	No	West Jackson Project Int.			Signal	A	6.6	No
138	Mayhew Road & Collector WJ-13	West Jackson Project Int.			Signal	D	41.7	No	West Jackson Project Int.			Signal	C	31.9	No
139	Collector WJ-14 & Kiefer Boulevard	West Jackson Project Int.			Signal	C	28.2	No	West Jackson Project Int.			Signal	C	23.9	No
140	Douglas Road & Kiefer Boulevard	West Jackson Project Int.			Signal	F	162.1	Yes	West Jackson Project Int.			Signal	F	103.1	Yes
141	Vineyard Road & Elder Creek Road	West Jackson Project Int.			Signal	D	37.2	No	West Jackson Project Int.			Signal	C	29.0	No
142	Vineyard Road & Florin Road	West Jackson Project Int.			Signal	C	25.2	No	West Jackson Project Int.			Signal	C	32.8	No
143	Routier Ext & Kiefer Boulevard	West Jackson Project Int.			Signal	F	88.4	Yes	West Jackson Project Int.			Signal	E	71.4	No
144	Happy Ln/Happy Lane & Routier Ext	West Jackson Project Int.			Signal	E	78.9	No	West Jackson Project Int.			Signal	E	79.9	No
145	Routier Ext/Routier Rd & Old Placerville Road	West Jackson Project Int.			Signal	F	168.4	Yes	West Jackson Project Int.			Signal	F	118.4	Yes
146	Collector JT-3 & Jackson Road	Jackson Township Project Int.			Signal	F	83.6	Yes	Jackson Township Project Int.			Signal	D	48.2	No
147	Tree View Lane & Jackson Road	Jackson Township Project Int.			Signal	D	38.0	No	Jackson Township Project Int.			Signal	B	13.4	No
148	Collector JT-4 & Jackson Road	Jackson Township Project Int.			Signal	B	14.5	No	Jackson Township Project Int.			Signal	A	9.0	No
149	Tree View Lane & Collector JT-5	Jackson Township Project Int.			Signal	B	14.0	No	Jackson Township Project Int.			Signal	B	13.7	No
150	Tree View Lane & Collector JT-6	Jackson Township Project Int.			Signal	B	19.1	No	Jackson Township Project Int.			Signal	C	25.6	No
151	Tree View Lane & Collector JT-1	Jackson Township Project Int.			Signal	B	14.5	No	Jackson Township Project Int.			Signal	B	14.3	No

Intersection		A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
152	Tree View Lane & Kiefer Boulevard	Jackson Township Project Int.			Signal	B	11.6	No	Jackson Township Project Int.			Signal	B	14.0	No
153	HS/MS Dwy & Kiefer Boulevard	Jackson Township Project Int.			Signal	A	8.1	No	Jackson Township Project Int.			Signal	A	7.9	No
154	Rockbridge Dr & Jackson Road	NewBridge Project Int.			Signal	C	32.2	No	NewBridge Project Int.			Signal	B	18.3	No
155	Eagles Nest Road & N Bridgewater Dr	NewBridge Project Int.			Signal	A	3.4	No	NewBridge Project Int.			Signal	A	3.1	No
156	Eagles Nest Road & S Bridgewater Dr	NewBridge Project Int.			Signal	B	15.2	No	NewBridge Project Int.			Signal	B	13.4	No
157	Zinfandel Drive & Collector MS-2	Mather South Project Int.			Round	B	11.4	No	Mather South Project Int.			Round	B	12.1	No
158	Zinfandel Drive & Collector MS-3	Mather South Project Int.			Round	A	8.3	No	Mather South Project Int.			Round	A	9.2	No
159	Zinfandel Drive & Collector MS-4	Mather South Project Int.			Round	A	9.0	No	Mather South Project Int.			Round	A	9.2	No
160	Collector MS-5 & Collector MS-2	Mather South Project Int.			Two-way stop			No	Mather South Project Int.			Two-way stop			No
161	*Northbound Left Turn*					*A*	*7.8*						*A*	*7.5*	
	Eastbound Left Turn					*B*	*10.2*						*B*	*10.7*	
162	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					B	10.1						*A*	*9.7*	
163	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*	*8.5*						*A*	*8.2*	
	Eastbound					*C*	*18.2*						*D*	*33.3*	
164	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*	*11.8*						*B*	*12.4*	
	Eastbound					*A*	*9.4*						*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 Associates 2019

Table SI-20: Cumulative No Project and Cumulative Plus Jackson Corridor Projects (Project) 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									

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	
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
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									

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	
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
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 Aveneu/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	↰ ↰ ↑ ↑	↲ ↓ ↓	↰ ↱		↰ ↰ ↑ ↑	↲ ↓ ↓	↰ ↱		

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	
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									
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									

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	
111	Grant Line Road & Chrysanthy Blvd		Signal									
112	Easton Valley Pkwy & Hazel Avenue		Signal									
113	Excelsior Road & Collector WJ-1/Collector JT-1		Signal									West Jackson; Jackson Township
114	Excelsior Road & Collector WJ-2/Collector JT-2		Signal									West Jackson; Jackson Township
115	Kiefer Boulevard & W Collector MS-1		Signal									Mather South
116	Northbridge Dr & Kiefer Boulevard		Signal									NewBridge
117	Kiefer Boulevard & E Collector MS-1		Signal									Mather South
118	Collector WJ-3 & Jackson Road		Signal									West Jackson
119	Collector WJ-4 & Jackson Road		Signal									West Jackson
120	Vineyard Road & Jackson Road		Signal									West Jackson
121	Collector WJ-5 & Jackson Road		Signal									West Jackson
122	Collector WJ-6 & Jackson Road		Signal									West Jackson
123	Excelsior Road & Collector WJ-6		Signal									West Jackson
124	S. Watt Avenue & Rock Creek Pkwy		Signal									West Jackson
125	Hedge Avenue & Rock Creek Pkwy Westbound		Roundabout									West Jackson
126	Hedge Avenue & Rock Creek Pkwy Eastbound		Roundabout									West Jackson
127	Mayhew Road & Rock Creek Pkwy Westbound		Roundabout									West Jackson
128	Mayhew Road & Rock Creek Pkwy Eastbound		Roundabout									West Jackson
129	Bradshaw Road & Rock Creek Pkwy		Signal									West Jackson
130	Vineyard Road & Rock Creek Pkwy		Signal									West Jackson
131	Douglas Road & Rock Creek Pkwy		Signal									West Jackson
132	Bradshaw Road & Collector WJ-8		Signal									West Jackson
133	Bradshaw Road & Collector WJ-9		Signal									West Jackson
131	Bradshaw Road & Mayhew Road		Signal									West Jackson
135	Bradshaw Road & Collector WJ-10		Signal									West Jackson
136	Bradshaw Road & Collector WJ-11		Signal									West Jackson
137	Collector WJ-12 & Fruitridge Road		Signal									West Jackson
138	Mayhew Road & Collector WJ-13		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	
139	Collector WJ-14 & Kiefer Boulevard		Signal					↰ ↑ ↱	↲ ↓ ↘	↰ ↑ ↑ ↱	↰ ↑ ↑ ↱	West Jackson
140	Douglas Road Extension & Kiefer Boulevard		Signal					↰ ↰ ↑ ↑ ↱	↲ ↓ ↓ ↘ ↘	↰ ↰ ↑ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↱	West Jackson
141	Vineyard Road & Elder Creek Road		Signal					↰ ↰ ↑ ↑ ↱	↲ ↓ ↓ ↘ ↘	↰ ↰ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↱	West Jackson
142	Vineyard Road & Florin Road	Signal	Signal	↰ ↰ ↱		↑ ↱	↰ ↑	↰ ↰ ↑ ↑ ↱	↲ ↓ ↓ ↘ ↘	↰ ↰ ↑ ↱	↰ ↰ ↑ ↑ ↱	West Jackson
143	Routier Ext & Kiefer Boulevard		Signal					↰ ↰ ↑ ↑ ↱	↲ ↓ ↓ ↘ ↘	↰ ↰ ↑ ↑ ↑ ↱	↰ ↰ ↑ ↑ ↑ ↱	West Jackson
144	Happy Lane & Routier Ext		Signal					↰ ↑ ↱	↲ ↓ ↘	↰ ↑ ↱	↰ ↑ ↱	West Jackson
145	Routier Ext/Routier Rd & Old Placerville Road		Signal					↰ ↑ ↑ ↱	↲ ↓ ↓ ↘ ↘	↰ ↑ ↑ ↱	↰ ↰ ↑ ↱	West Jackson
146	Jackson Road & Collector JT-3		Signal						↲ ↘	↰ ↰ ↑ ↑	↑ ↑ ↱	Jackson Township
147	Jackson Road & Tree View Lane		Signal						↲ ↘ ↘	↰ ↰ ↑ ↑	↑ ↑ ↱	Jackson Township
148	Jackson Road & Collector JT-4		Signal						↲ ↘	↰ ↑ ↑	↑ ↱	Jackson Township
149	Tree View Lane & Collector JT-5		Signal					↰ ↑ ↱	↲ ↓ ↘	↰ ↑ ↱	↰ ↑ ↱	Jackson Township
150	Tree View Lane & Collector JT-6		Signal					↰ ↑ ↱	↲ ↓ ↘	↰ ↑ ↱	↰ ↑ ↱	Jackson Township
151	Tree View Lane & Collector JT-1		Signal					↰ ↑ ↱	↲ ↓ ↘	↰ ↑ ↱	↰ ↑ ↱	Jackson Township
152	Tree View Lane & Kiefer Boulevard		Signal					↰ ↰ ↱		↑ ↑ ↱	↰ ↰ ↑ ↑	Jackson Township
153	HS/MS Dwy & Kiefer Boulevard		Signal					↰ ↱		↑ ↱	↰ ↑ ↑	Jackson Township
154	Jackson Road & Rockbridge Dr		Signal						↲ ↘	↰ ↑ ↑	↑ ↱	NewBridge
155	Eagles Nest Road & N Bridgewater Dr		Signal					↑ ↱	↓ ↓ ↘		↰ ↱	NewBridge
156	Eagles Nest Road & S Bridgewater Dr		Signal					↰ ↑ ↱	↲ ↓ ↘	↰ ↑ ↱	↰ ↑ ↱	NewBridge
157	Zinfandel Drive & Collector MS-2		Roundabout					↑ ↱	↓ ↳		↾	Mather South
158	Zinfandel Drive & Collector MS-3		Roundabout					↑ ↱	↓ ↳		↰ ↱	Mather South
159	Zinfandel Drive & Collector MS-4		Roundabout					↑ ↱	↓ ↳		↰ ↱	Mather South
160	Collector MS-5 & Collector MS-2		Two-way stop					↰	↲	↾		Mather South
161	Collector MS-5 & Collector MS-3		Two-way stop					↰	↲	↾		Mather South
162	Collector MS-5 & Collector MS-4		Two-way stop					↰	↲	↾		Mather South
163	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 Associates 2019

Table SI-21: Cumulative Plus Jackson Corridor Projects (Alternative 2) Intersection Levels of Service

Intersection		A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Township 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*	

	Intersection	A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
	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*	
	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*	

	Intersection	A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
	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
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	Signal	B	13.6	Signal	B	11.7	No	Signal	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	Signal	E	55.6	Signal	E	62.1	Yes	Signal	C	27.2	Signal	E	66.9	Yes
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

	Intersection	A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
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
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	Signal	B	12.8	Signal	C	29.0	No	Signal	B	12.9	Signal	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

Intersection		A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
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
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	171.2	Yes	West Jackson Project Int.			Round	F	215.2	Yes

Intersection		A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
312	Bradshaw Road & Rock Creek Pkwy	West Jackson Project Int.			Signal	B	11.0	No	West Jackson Project Int.			Signal	D	47.7	No
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

Intersection		A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact
		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)		Control	Int LOS	Delay (sec)	Control	Int LOS	Delay (sec)	
603	Collector MS-5 & Collector MS-2	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 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 Associates 2019

Table SI-22: Cumulative No Project and Cumulative Plus Jackson Corridor Projects (Alternative 2) Intersection Geometrics

	Intersection	Traffic Control		Cumulative No Project Lane Geometrics				Cumulative Plus Jackson Corridor Projects Lane Geometrics				Project(s) Responsible for Change
		Cumulative	Cumulative 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									

Intersection		Traffic Control		Cumulative No Project Lane Geometrics				Cumulative Plus Jackson Corridor Projects Lane Geometrics				Project(s) Responsible for Change
		Cumulative	Cumulative Plus Jackson Corridor Projects	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	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
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	Signal	Signal									
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	Signal	Signal									

Intersection		Traffic Control		Cumulative No Project Lane Geometrics				Cumulative Plus Jackson Corridor Projects Lane Geometrics				Project(s) Responsible for Change
		Cumulative	Cumulative Plus Jackson Corridor Projects	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
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
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 Aveneu/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									

Intersection		Traffic Control		Cumulative No Project Lane Geometrics				Cumulative Plus Jackson Corridor Projects Lane Geometrics				Project(s) Responsible for Change
		Cumulative	Cumulative Plus Jackson Corridor Projects	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
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									
90	Excelsior Road & Calvine Rd	Signal	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									

Intersection		Traffic Control		Cumulative No Project Lane Geometrics				Cumulative Plus Jackson Corridor Projects Lane Geometrics				Project(s) Responsible for Change
		Cumulative	Cumulative Plus Jackson Corridor Projects	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
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
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

Intersection		Traffic Control		Cumulative No Project Lane Geometrics				Cumulative Plus Jackson Corridor Projects Lane Geometrics				Project(s) Responsible for Change
		Cumulative	Cumulative Plus Jackson Corridor Projects	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
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
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 Associates 2019

Mitigation Measures

CU-TR-2. Cumulative Intersection Operations.

The project applicant shall implement Mitigation Measures TR-1, TR-2, TR-4, and CU-TR-2. The project applicant shall implement the set of improvements assigned to the project by the Tool (Mitigation Measure TR-1). Where feasible, the number of roadway lanes 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 would propose alternative mitigation measures. These generally include providing additional turn lanes, carrying an additional through lane past the intersection, or designating the intersection as a High Capacity Intersection.

PROJECT

- The project applicant shall implement Mitigation Measures TR-1, TR-2, TR-4, and CU-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 SI-23a** and **Table SI-24a**. **Table SI-23a** and **Table SI-24a** 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 (Project) scenario. **Table SI-23b** and **Table SI-24b** 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 (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 SI-24a** and **Table SI-24b** 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. Constraints to the implementation of mitigations measures (e.g., maximum general plan lanes, existing development) are identified in the "Constraint if Full Mitigation Not Possible" column. 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 "High Capacity Intersections" identified in **Table SI-24b** are provided in Appendix TR-1.

Implementation of Mitigation Measures TR-1, TR-2, TR-4, and CU-TR-2 would result in fair share payments toward improvements that would reduce the cumulative intersection impacts of the 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 SI-24a** and **Table SI-24b**, because many intersections have reached the maximum number of lanes allowed under the General Plan, alternative mitigation, which is subject to the same constraints as the primary mitigation, was recommended. But, even with implementation of this alternative mitigation, some intersections would continue to operate unacceptably. Thus, 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 Projects (Project) conditions. Therefore, the project would have a substantial contribution to a significant cumulative impact. This impact would be considerable and **significant and unavoidable**.

ALTERNATIVE 2

- The project applicant shall implement Mitigation Measures TR-1, TR-2, TR-4, and CU-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 SI-25a** and **Table SI-26a**. **Table SI-25a** and **Table SI-26a** 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 (Alternative 2) scenario. **Table SI-25b** and **Table SI-26b** 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 (Alternative 2) 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 SI-26a** and **Table SI-26b** also identify those intersections that would continue operate at unacceptable levels after mitigation, along with the constraint that precluded full mitigation. 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 "High Capacity Intersections" identified in **Table SI-26b** are provided in Appendix TR-1.

Implementation of Mitigation Measures TR-1, TR-2, TR-4, and CU-TR-2 would result in fair share payments toward improvements that would reduce the cumulative intersection impacts of the Alternative 2. 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 SI-25a** and **Table SI-26b**, because many intersections have reached the maximum number of lanes allowed under the General Plan, alternative mitigation, which is subject to the same constraints as the primary mitigation, was recommended. But, even with implementation of this alternative mitigation, some intersections would continue to operate unacceptably. Thus, the addition of vehicle trips generated by project buildout would result in the exceedance of applicable LOS and delay thresholds under Cumulative Plus Jackson Corridor Projects (Alternative 2) conditions. Therefore, the project would have a substantial contribution to a significant cumulative impact. This impact would be considerable and **significant and unavoidable**.

Table SI-23a: Cumulative Plus Jackson Corridor Projects (Project) Impacted Intersections and County Standard Intersection Geometry

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)	
3	Power Inn Road/Howe Avenue & Folsom Blvd	Signal	F	91.7	Signal	-	-	Yes	Signal	F	84.6	Signal	-	-	Yes
4	Power Inn Road & 14th Avenue	Signal	F	157.9	Signal	F	116.0	Yes	Signal	F	116.5	Signal	F	104.9	Yes
12	Watt Avenue & Folsom Blvd.	Signal	F	180.3	Signal	-	-	Yes	Signal	F	203.6	Signal	-	-	Yes
14	S. Watt Avenue & Kiefer Blvd.	Signal	F	101.5	Signal	F	91.0	Yes	Signal	E	75.9	Signal	E	68.1	No
16	S. Watt Avenue & Jackson Road	Signal	F	234.0	Signal	F	147.2	Yes	Signal	F	191.8	Signal	F	125.7	Yes
17	S. Watt Avenue & Fruitridge Road	Signal	E	71.5	Signal	D	39.2	No	Signal	F	102.4	Signal	D	54.0	No
20	Elk Grove Florin Road/S. Watt Ave. & Florin Road	Signal	F	277.4	Signal	F	146.0	No	Signal	F	204.3	Signal	F	122.6	No
23	Hedge Avenue & Jackson Road	Signal	F	128.3	Signal	D	48.1	No	Signal	D	40.4	Signal	B	19.8	No
25	Hedge Avenue & Elder Creek Road	Signal	F	109.3	Signal	-	-	Yes	Signal	F	122.4	Signal	-	-	Yes
28	Mayhew Road & Kiefer Boulevard	Signal	F	97.5	Signal	E	73.5	No	Signal	E	72.8	Signal	E	60.6	No
29	Mayhew Road & Jackson Road	Signal	F	160.2	Signal	E	69.7	No	Signal	F	129.9	Signal	E	77.9	No
31	Mayhew Road & Elder Creek Road	Signal	F	>300	Signal	E	79.8	No	Signal	F	>300	Signal	D	41.4	No
32	Woodring Drive & Zinfandel Drive	Two-way stop			Round	A	8.8	No	Two-way stop			Round	B	10.5	No
	Eastbound		*F*	*85.7*						*F*	*247.0*				
	Northbound Left Turn		*B*	*10.6*						*B*	*12.4*				
35	Bradshaw Road & US 50 EB Ramps	Signal	E	56.8	Signal	-	-	Yes	Signal	D	39.7	Signal	-	-	No
36	Bradshaw Road & Old Placerville Road	Signal	F	103.0	Signal	F	101.3	Yes	Signal	F	84.8	Signal	E	77.2	Yes
37	Bradshaw Road & Kiefer Boulevard	Signal	F	146.6	Signal	F	119.8	Yes	Signal	F	140.2	Signal	F	116.4	Yes
38	Bradshaw Road & Jackson Road	Signal	F	161.3	Signal	-	-	No	Signal	F	161.2	Signal	-	-	Yes
39	Bradshaw Road & Elder Creek Road	Signal	F	210.1	Signal	F	96.6	No	Signal	F	226.7	Signal	D	67.9	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.			No	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.			No
	Northbound Left Turn		*F*	*>300*						*F*	*>300*				
	Northbound Right Turn		*F*	*243.1*						*F*	*61.9*				
	Westbound Left Turn		*C*	*22.5*						*E*	*42.4*				
43	Happy Lane & Kiefer Boulevard	Signal	F	140.2	Signal	-	-	Yes	Signal	E	70.8	Signal	-	-	No
45	Excelsior Road & Jackson Road	Signal	F	>300	Signal	F	118.6	Yes	Signal	F	280.2	Signal	F	150.7	Yes
46	Excelsior Road & Elder Creek Road	Signal	F	88.7	Signal	B	14.6	No	Signal	E	60.6		B	17.3	No
47	Excelsior Road & Florin Road	Signal	F	109.4	Signal	D	47.2	No	Signal	E	68.0	Signal	E	67.3	No
51	Mather Field Road & Rockingham Drive	Signal	F	>300	Signal	-	-	Yes	Signal	F	169.0	Signal	-	-	Yes

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)	
58	Zinfandel Drive & Douglas Road	Signal	F	219.8	Signal	E	61.9	No	Signal	F	218.2	Signal	E	68.4	No
61	Eagles Nest Road & Florin Road	Two-way stop			Signal	F	142.4	Yes	Two-way stop			Signal	F	137.7	Yes
	Northbound		*F*	*>300*						*F*	*>300*				
	Southbound		*F*	*>300*						*F*	*>300*				
	Eastbound Left Turn		*B*	*11*						*A*	*9.4*				
	Westbound Left Turn		*A*	*8*						*A*	*8.7*				
67	Sunrise Boulevard & Douglas Road	Signal	F	192.2	Signal	-	-	Yes	Signal	F	107.9	Signal	-	-	Yes
69	Sunrise Boulevard & Kiefer Boulevard	Signal	F	>300	Signal	F	118.3	No	Signal	F	259.2	Signal	E	71.1	No
70	Sunrise Boulevard & Jackson Road	Signal	F	90.3	Signal	D	54.4	No	Signal	E	78.3	Signal	D	52.8	No
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	F	127.9	Signal	-	-	Yes	Signal	E	71.0	Signal	-	-	Yes
80	Grant Line Road & Jackson Road	Signal	F	117.3	Signal	E	76.3	No	Signal	F	106.5	Signal	C	34.0	No
86	Power Inn Road & Florin Rd	Signal	F	116.1	Signal	E	60.5	No	Signal	E	72.5	Signal	D	46.2	No
87	Florin Perkins Road & Florin Rd	Signal	E	59.3	Signal	E	58.8	No	Signal	F	113.8	Signal	F	100.0	No
91	Grant Line Rd & Eagles Nest Rd/Sloughhouse Rd	Signal	D	43.2	Signal	D	39.2	No	Signal	D	52.0	Signal	D	36.8	No
92	Grant Line Rd & Calvine Rd	Signal	D	36.5	Signal	B	11.3	No	Signal	C	27.4	Signal	A	9.3	No
93	Grant Line Rd & Dwy/Wilton Rd	Signal	F	83.4	Signal	E	59.7	No	Signal	F	97.4	Signal	F	82.2	Yes
95	Florin Perkins Road & 14th Avenue	Signal	E	65.6	Signal	-	-	Yes	Signal	D	45.3	Signal	-	-	No
96	Jackson Road & 14th Avenue	Signal	F	119.8	Signal	-	-	Yes	Signal	D	54.7	Signal	-	-	Yes
103	Rancho Cordova Pkwy & Douglas Road	Signal	E	57.9	Signal	-	-	No	Signal	E	77.2	Signal	-	-	Yes
303	Rock Creek Pkwy & Jackson Road	Signal	F	128.3	Signal	E	77.4	No	Signal	F	96.4	Signal	D	54.7	No
308	Hedge Avenue & Rock Creek Pkwy WB	Round	E	49.0	Round	B	13.8	No	Round	A	9.9	Round	B	13.4	No
310	Mayhew Road & Rock Creek Pkwy WB	Round	F	297.2	Round	-	-	Yes	Round	F	210.1	Round	-	-	Yes
311	Mayhew Road & Rock Creek Pkwy EB	Round	F	191.0	Round	-	-	Yes	Round	F	>300	Round	-	-	Yes
318	Bradshaw Road & Mayhew Road	Signal	F	163.9	Signal	F	120.2	Yes	Signal	F	128.4	Signal	F	103.6	Yes
319	Bradshaw Road & Collector WJ-10	Signal	F	190.9	Signal	D	44.6	No	Signal	C	28.5	Signal	C	20.5	No
325	Douglas Road & Kiefer Boulevard	Signal	F	162.1	Signal	F	125.9	Yes	Signal	F	103.1	Signal	F	95.7	Yes
329	Routier Ext & Kiefer Boulevard	Signal	F	88.4	Signal	-	-	Yes	Signal	E	71.4	Signal	-	-	Yes
331	Routier Ext/Routier Rd & Old Placerville Road	Signal	F	168.4	Signal	F	130.5	Yes	Signal	F	118.4	Signal	F	110.8	Yes
400	Collector JT-3 & Jackson Road	Signal	F	83.6	Signal	D	47.3	No	Signal	D	48.2	Signal	C	20.7	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.
Source: DKS Associates 2019

Table SI-23b: Cumulative Plus Jackson Corridor Projects (Project) 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	91.7	-	-	-	Signal	F	84.6	-	-	-
4	Power Inn Road & 14th Avenue	Signal	F	116.0	-	-	-	Signal	F	104.9	-	-	-
12	Watt Avenue & Folsom Blvd.	Signal	F	180.3	Signal	D	40.6	Signal	F	203.6	Signal	D	41.7
14	S. Watt Avenue & Kiefer Blvd.	Signal	F	91.0	Signal	SB Ramps A NB Ramps A	SB Ramps 6.5 NB Ramps 4.8	Signal	E	68.1	Signal	SB Ramps B NB Ramps A	SB Ramps 13.9 NB Ramps 5.1
16	S. Watt Avenue & Jackson Road	Signal	F	147.2	-	-	-	Signal	F	125.7	-	-	-
25	Hedge Avenue & Elder Creek Road	Signal	F	109.3	Signal	E	61.0	Signal	F	122.4	Signal	E	74.3
35	Bradshaw Road & US 50 EB Ramps	Signal	E	56.8	-	-	-	Signal	D	39.7	-	-	-
36	Bradshaw Road & Old Placerville Road	Signal	F	101.3	-	-	-	Signal	E	77.2	-	-	-
37	Bradshaw Road & Kiefer Boulevard	Signal	F	119.8	-	-	-	Signal	F	116.4	-	-	-
38	Bradshaw Road & Jackson Road	Signal	F	161.3	Grade Separate			Signal	F	161.2	Grade 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 Routier extension from Old Placerville Rd to Kiefer Blvd.											
43	Happy Lane & Kiefer Boulevard	Signal	F	140.2	Signal	C	26.5	Signal	E	70.8	Signal	B	19.7
45	Excelsior Road & Jackson Road	Signal	F	118.6	-	-	-	Signal	F	150.7	-	-	-
51	Mather Field Road & Rockingham Drive	Signal	F	>300	-	-	-	Signal	F	169.0	-	-	-
61	Eagles Nest Road & Florin Road	Signal	F	142.4	Signal	D	50.4	Signal	F	137.7	Signal	D	45.5
67	Sunrise Boulevard & Douglas Road	Signal	F	192.2	-	-	-	Signal	F	107.9	-	-	-
72	Sheldon Lake Drive/Sunrise Boulevard & Grant Line Road	Signal	F	127.9	Signal	E	68.0	Signal	E	71.0	Signal	C	27.3
93	Grant Line Rd & Dwy/Wilton Rd	Signal	E	59.7	Signal	C	22.0	Signal	F	82.2	Signal	C	28.6
95	Florin Perkins Road & 14th Avenue	Signal	E	65.6	-	-	-	Signal	D	45.3	-	-	-
96	Jackson Road & 14th Avenue	Signal	F	119.8	-	-	-	Signal	D	54.7	-	-	-
103	Rancho Cordova Pkwy & Douglas Road	Signal	E	57.9	Signal	D	39.0	Signal	E	77.2	Signal	E	62.7
310	Mayhew Road & Rock Creek Pkwy WB	Round	F	297.2				Round	F	210.1			
311	Mayhew Road & Rock Creek Pkwy EB	Round	F	191.0	Signal	E	78.6	Round	F	>300	Signal	D	40.5
318	Bradshaw Road & Mayhew Road	Signal	F	120.2	Signal	E	78.3	Signal	F	103.6	Signal	E	68.6
325	Douglas Road & Kiefer Boulevard	Signal	F	125.9	-	-	-	Signal	F	95.7	-	-	-
329	Routier Ext & Kiefer Boulevard	Signal	F	88.4	Signal	D	48.6	Signal	E	71.4	Signal	E	59.4
331	Routier Ext/Routier Rd & Old Placerville Road	Signal	F	130.5	Signal	D	53.6	Signal	F	110.8	Signal	D	35.0

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 2019

Table SI-24a: Cumulative Plus Jackson Corridor Projects (Project) Intersection Impacts and Mitigations

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	
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									No
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
35	Bradshaw Road & US 50 Eastbound Ramps	Signal	Signal									Yes
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
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.				No
43	Kiefer Boulevard & Happy Ln	Signal	Signal									No
45	Excelsior Road & Jackson Road	Signal	Signal									Yes

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	
46	Excelsior Road & Elder Creek Road	Signal	Signal									No
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
67	Sunrise Boulevard & Douglas Road	Signal	Signal									Yes
69	Sunrise Boulevard & Kiefer Boulevard	Signal	Signal									No
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									No
86	Power Inn Road & Florin Rd	Signal	Signal									No
87	Florin Perkins Road & Florin Rd	Signal	Signal									
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

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	
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

[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.

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 2019

Table SI-24b: Cumulative Plus Jackson Corridor Projects (Project) Intersection Impacts and Mitigations

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 Mitgation?	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				
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									Yes	Yes	Triple NBL, Free WBR and SBL via tunnel	Maximum General Plan Lanes
25	Hedge Avenue & Elder Creek Road	Signal	Signal									No	No	Dual NBL, Dual SBL	
35	Bradshaw Road & US 50 Eastbound Ramps	Signal	Signal									Yes	No		Maximum General Plan Lanes
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		
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 Route extension from Old Placerville Rd to Kiefer Blvd	Maximum General Plan Lanes
43	Kiefer Boulevard & Happy Ln	Signal	Signal									No	No		Maximum lanes
45	Excelsior Road & Jackson Road	Signal	Signal									Yes	No	NBR overlap	Maximum General Plan Lanes

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 Mitgation?	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
61	Eagles Nest Rd/ Eagles Nest Road & Florin Road	Signal	Signal									No	No		
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		
93	Grant Line Rd & Driveway/Wilton Rd	Signal	Signal									No	No	Dual SBL, Dual WBL, Dual WBR	
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									No	No	WBR Overlap	Maximum General Plan lanes
310	Mayhew Road & Rock Creek Pkwy Westbound	Roundabout	Signal									No	No		
311	Mayhew Road & Rock Creek Pkwy Eastbound	Roundabout										No	No		
318	Bradshaw Road & Mayhew Road	Signal	Signal									No	No	HCI, Triple EBL and dual SBR	Maximum General Plan lanes
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	

[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.
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 2019

Table SI-25a: Cumulative Plus Jackson Corridor Projects (Alternative 2) 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
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*				
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

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)	
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
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	Rock Creek Pkwy & Jackson Road	Signal	F	128.3	Signal	E	77.4	No	Signal	F	96.4	Signal	D	54.7	No
308	Hedge Avenue & Rock Creek Pkwy WB	Round	F	60.5	Round	C	15.5	No	Round	B	11.2	Round	B	10.2	No
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	171.2	-	-	-	Yes	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

(-): No changes to intersection geometry or operation.

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.

Table SI-25b: Cumulative Plus Jackson Corridor Projects (Alternative 2) 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	Grade Separate			Signal	F	67.8	Grade 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 Routier 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	-	-	-

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)
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. (-): No changes to intersection geometry or operation.
Bold values do not meet LOS policy. Red values with light gray shading indicate project impacts.
Source: DKS Associates 2019

Table SI-26a: Cumulative Plus Jackson Corridor Projects (Alternative 2) Intersection Impacts and Mitigations

Intersection		Traffic Control		Cumulative Plus Jackson Corridor Projects Lane Geometrics				County Standard Mitigated Cumulative Plus Jackson Corridor Projects				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

Intersection		Traffic Control		Cumulative Plus Jackson Corridor Projects Lane Geometrics				County Standard Mitigated Cumulative Plus Jackson Corridor Projects				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	
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
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

Intersection		Traffic Control		Cumulative Plus Jackson Corridor Projects Lane Geometrics				County Standard Mitigated Cumulative Plus Jackson Corridor Projects				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	
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	Rock Creek Pkwy & Jackson Road	Signal	Signal									No
308	Hedge Avenue & Rock Creek Pkwy Westbound	Roundabout	Roundabout									No
310	Mayhew Road & Rock Creek Pkwy Westbound	Roundabout	Roundabout									Yes
311	Mayhew Road & Rock Creek Pkwy Eastbound	Roundabout	Roundabout									Yes
318	Bradshaw Road & Mayhew Road	Signal	Signal									Yes
319	Bradshaw Road & Collector WJ-10	Signal	Signal									Yes
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

[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.

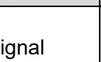
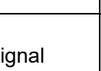
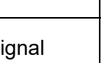
[2] Alternative mitigations represent proposed mitigations beyond the General Plan or standard intersection geometry, excluding high capacity intersections, as proposed by the County of Sacramento.

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 2019

Table SI-26b: Cumulative Plus Jackson Corridor Projects (Alternative 2) 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		
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		
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
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		

	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				
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 SBR	
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		
318	Bradshaw Road & Mayhew Road	Signal	Signal									Yes	No	HCI, Triple EBL and dual SBR	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	

[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.

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 2019

CUMULATIVE FREEWAY FACILITY IMPACTS

PROJECT

CUMULATIVE FREEWAY SEGMENTS

Table SI-27 summarizes a.m. and p.m. peak hour US 50 freeway mainline operations under the Cumulative Plus Jackson Corridor Projects (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 SI-28 and **Table SI-29** summarize a.m. and p.m. peak hour freeway ramp intersection queuing under the Cumulative No Project and Cumulative Plus Jackson Corridor Projects (Project) scenario. As shown in **Table SI-29**, implementation of the Jackson Corridor Projects (Project) scenario 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 (Project), 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 SI-27: Cumulative Plus Jackson Corridor Projects (Project) Peak Hour Freeway Basic Segment Level of Service

Direction	Location	Cumulative No Project				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
Eastbound US 50	SR 99 / SR 51 to Stockton Boulevard	8,751	D	8,621	D	9,283	D	8,855	D
	Stockton Boulevard to 59th Street	8,168	F	7,811	F	8,622	F	8,051	F
	59th Street to 65th Street	7,637	D	7,341	D	8,092	E	7,521	D
	65th Street to Howe Avenue	8,019	D	7,658	D	8,284	D	7,812	D
	Howe Avenue to Watt Avenue	7,213	C	6,680	C	7,350	C	6,679	C
	Watt Avenue to Bradshaw Road	9,633	F	8,976	E	9,853	F	9,056	E
	Bradshaw Rd to Mather Field Rd	9,467	F	9,033	C	9,492	F	9,015	C
	Mather Field Rd to Zinfandel Drive	9,072	D	8,765	D	9,251	D	8,916	D
	Zinfandel Drive to Sunrise Blvd	6,313	C	6,367	F	6,426	C	6,551	F
	Sunrise Bl to Rancho Cordova Pkwy	5,835	C	5,875	F	5,918	C	6,121	F
	Rancho Cordova Pkwy to Hazel Ave	7,170	D	6,651	F	7,270	D	6,929	F
Westbound US 50	Hazel Ave to Rancho Cordova Pkwy	5,376	B	5,168	C	5,642	B	5,218	C
	Rancho Cordova Pkwy to Sunrise Bl	6,906	C	4,367	B	7,074	C	4,461	B
	Sunrise Blvd to Zinfandel Drive	8,587	D	5,211	B	8,789	D	5,378	B
	Zinfandel Drive to Mather Field Rd	9,480	D	7,384	C	9,503	D	7,454	C
	Mather Field Rd to Bradshaw Road	9,560	F	8,696	D	9,424	F	8,544	D
	Bradshaw Road to Watt Avenue	9,001	F	7,871	D	8,902	F	8,099	E
	Watt Avenue to Howe Avenue	7,880	F	5,864	F	7,704	F	6,132	F
	Howe Avenue to 65th Street	8,761	F	8,080	F	9,014	F	8,384	F
	65th Street to 59th Street	8,809	F	7,970	F	9,037	F	8,296	F
	59th Street to Stockton Boulevard	9,692	D	8,290	F	9,903	D	8,656	F
	Stockton Boulevard to SR 99 / SR 51	10,187	E	9,660	F	10,330	E	9,916	F

Bold values denote level of service “F” conditions.
Red shaded values indicate project impacts.
Source: DKS Associates 2019

Table SI-28: 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 2019

Table SI-29: Cumulative Plus Jackson Corridor Projects (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	148	-	1,065	167	-	510
	Watt Avenue	1,500	-	1,500	273	-	567	213	-	373
	Bradshaw Road	1,250	-	1,250	189	-	1132	119	-	764
	Mather Field Road	1,385	-	1,385	165	-	383	315	-	285
	Zinfandel Drive	1,025	1,025	1,025	150	1,407	1,341	448	371	675
	Sunrise Boulevard	1,695	-	1,695	109	-	196	211	-	105
	Rancho Cordova Pkwy.	-	-	1,850	-	-	369	-	-	521
	Hazel Avenue	1,310	-	1,310	302	-	27	770	-	18
Westbound US-50	Hazel Avenue	1,995		1,995	320		801	343		654
	Rancho Cordova Pkwy	1,065	-	-	1,736	-	-	1,703	-	-
	Sunrise Boulevard	1,540	-	1,540	58	-	165	44	-	403
	Zinfandel Drive	1,065	-	1,065	271	-	58	177	-	202
	Mather Field Road	1,335	-	1,335	512	-	474	264	-	238
	Bradshaw Road	1,330	-	1,330	237	-	119	324	-	54
	Watt Avenue	1,480	-	1,480	271	-	764	174	-	606
	Howe Avenue	1,355	1,355	1,355	43	412	707	175	412	742

Red shaded values indicate project impacts.

L = left turn movement, T = through movement, R = right turn movement

Source: DKS Associates 2019

CUMULATIVE FREEWAY MERGE / DIVERGE / WEAVE SEGMENTS

Table SI-30 summarizes a.m. and p.m. peak hour freeway operations at ramp junctions and weaving areas under the Cumulative Plus Jackson Corridor Projects (Project) scenario. Detailed freeway ramp junction and weaving area operations calculations are included in Appendix TR-1.

As shown in **Table SI-30**, 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 (Project) scenario would result in unacceptable operating conditions along freeway facilities within the study area, the project would have a considerable contribution to a significant cumulative.

ALTERNATIVE 2

CUMULATIVE FREEWAY SEGMENTS

Table SI-31 summarizes a.m. and p.m. peak hour US 50 freeway mainline operations under the Cumulative Plus Jackson Corridor Projects (Alternative 2) 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 SI-32 and **Table SI-33** summarize a.m. and p.m. peak hour freeway ramp intersection queuing under the Cumulative No Project and Cumulative Plus Jackson Corridor Projects (Alternative 2 scenario. As shown in **Table SI-33**, implementation of the Jackson Corridor Projects (Alternative 2) scenario 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 (Alternative 2), 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

CUMULATIVE FREEWAY MERGE / DIVERGE / WEAVE SEGMENTS

Table SI-34 summarizes a.m. and p.m. peak hour freeway operations at ramp junctions and weaving areas under the Cumulative Plus Jackson Corridor Projects (Alternative 2) scenario. Detailed freeway ramp junction and weaving area operations calculations are included in Appendix TR-1.

As shown in **Table SI-34**, 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 (Alternative 2) scenario 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.

Table SI-30: Cumulative Plus Jackson Corridor Projects (Project) 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		777		928		724	
	Howe Avenue / Hornet Drive Exit		2,088	F	2,140	F	2,125	F	2,267	F
	Southbound Howe Avenue Loop Entrance	One-Lane Merge	729	D	1,342	D	722	D	1,338	D
	Northbound Howe Avenue Slip Entrance	One-Lane Merge	609	D	532	D	520	D	519	D
	Watt Avenue Exit	Two-Lane Diverge	1,538	B	1,705	B	1,530	B	1,604	A
	Southbound Watt Avenue Loop Entrance	One-Lane Merge	1,615	D	1,368	C	1,546	D	1,213	C
	Northbound Watt Avenue Slip Entrance	One-Lane Merge	682	D	588	C	642	D	597	C
	Bradshaw Road Exit	Two-Lane Diverge	2,068	F	1,631	B	2,255	F	1,835	C
	Southbound Bradshaw Road Loop Entrance	One-Lane Merge	268	D	422	D	272	D	505	D
	Northbound Bradshaw Road Slip Entrance	One-Lane Merge	1,486	D	1,029	C	1,491	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	251	C	169	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 Mather Field Road Slip Entrance	Weave	431	F	894	F	607	F	1,123	F
	Zinfandel Drive Exit		3,083		1,861		3,090		1,797	
	Southbound Zinfandel Drive Loop Entrance	One-Lane Merge	183	C	173	C	186	C	151	C
	Northbound Zinfandel Drive Slip Entrance	Lane Addition	665	A	714	B	667	B	784	B
	Sunrise Boulevard Exit	Major Diverge	1,878	C	2,308	C	1,923	C	2,364	C
	Sunrise Boulevard Entrance	Lane Addition / Weave	1,233	D	1,122	C	1,185	B	1,162	C
	Rancho Cordova Parkway Exit	Major Diverge / Weave	374		763		330	C	816	
	Rancho Cordova Parkway Entrance	Weave	1,787	F	1,748	F	1,747	F	1,823	F
	Hazel Avenue Exit		1,904		2,611		1,915		2,718	
	Hazel Avenue Entrance	Weave	1,174	E	2,148	F	1,070	D	2,091	D
	Aerojet Road Exit		584		203		625		171	
West- bound US 50	Hazel Avenue Exit	Two-Lane Diverge	1,098	B	1,031	C	1,058	B	1,032	C
	Northbound Hazel Avenue Loop Entrance	One-Lane Merge	69	B	434	C	89	B	434	C
	Southbound Hazel Avenue Slip Entrance	Weave	2,306		2,263		2,374		2,302	
	Rancho Cordova Parkway Exit		1,800	F	2,225	F	1,882	F	2,173	F

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
	Rancho Cordova Parkway Entrance	Lane Addition / Weave	1,428	C	1,165	B	1,380	C	1,138	B
	Sunrise Boulevard Exit	Major Diverge / Weave	729		751	C	736		729	C
	Northbound Sunrise Boulevard Loop Entrance	Lane Addition	169	A	259	A	174	A	234	A
	Southbound Sunrise Boulevard Slip Entrance	Lane Addition	2,323	F	1,524	C	2,355	F	1,613	C
	Zinfandel Drive Exit	One-Lane Diverge	1,384	E	1,183	D	1,409	E	1,200	D
	Northbound Zinfandel Drive Loop Entrance	Lane Addition	909	C	1,443	D	797	C	1,295	C
	Southbound Zinfandel Drive Slip Entrance	One-Lane Merge	1,544	D	663	B	1,400	D	663	B
	Mather Field Road Exit	One-Lane Drop	1,350	D	826	C	1,586	D	1,025	C
	Northbound Mather Field Road Loop Entrance	One-Lane Merge	626	C	1,192	C	507	C	1,193	C
	Southbound Mather Field Road Slip Entrance	One-Lane Merge	303	C	504	C	423	C	428	B
	Bradshaw Road Exit	Two-Lane Diverge	1,533	C	1,756	B	1,704	C	1,809	B
	Northbound Bradshaw Road Loop Entrance	One-Lane Merge	999	F	927	D	1,381	F	1,593	D
	Southbound Bradshaw Road Slip Entrance	One-Lane Merge	385	F	851	D	393	F	816	D
	Watt Avenue Exit	Major Diverge	1,568	E	1,112	D	1,407	E	991	D

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 Watt Avenue Loop Entrance	One-Lane Merge	774	D	1,125	D	742	D	1,100	D
	Southbound Watt Avenue Slip Entrance	Lane Addition	1,134	D	1,062	C	912	D	1,006	D
	Howe Avenue Exit	Major Diverge	1,879	E	1,687	D	1,701	E	1,695	D
	Northbound Howe Avenue	One-Lane Merge	613	D	572	D	608	D	563	D
	Loop Entrance									
	Southbound Howe Avenue Slip Entrance	One-Lane Merge	668	F	699	C	812	F	646	C

Bold values denote level of service “F” conditions.

Red shaded values indicate project impacts.

Source: DKS Associates 2019

Table SI-31: Cumulative Plus Jackson Corridor Projects (Alternative 2) Peak Hour Freeway Basic Segment Level of Service

Direc-tion	Location	Cumulative No Project				Cumulative Plus Jackson Corridor Projects			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Vol.	LOS	Vol.	LOS	Vol.	LOS	Vol.	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

Direc-tion	Location	Cumulative No Project				Cumulative Plus Jackson Corridor Projects			
		A.M. Peak Hour		P.M. Peak Hour		A.M. Peak Hour		P.M. Peak Hour	
		Vol.	LOS	Vol.	LOS	Vol.	LOS	Vol.	LOS
	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**

Notes: Vol. = Volume

Bold values denote level of service "F" conditions.

Red shaded values indicate project impacts.

Source: DKS Associates 2019

Table SI-32: 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 2019

Table SI-33: Cumulative Plus Jackson Corridor Projects (Alternative 2) 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 2019

Table SI-34: Cumulative Plus Jackson Corridor Projects (Alternative 2) 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 Vol.	LOS	Ramp Vol.	LOS	Ramp Vol.	LOS	Ramp Vol.	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 Vol.	LOS	Ramp Vol.	LOS	Ramp Vol.	LOS	Ramp Vol.	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

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 Vol.	LOS	Ramp Vol.	LOS	Ramp Vol.	LOS	Ramp Vol.	LOS
	Northbound Zinfandel Drive Loop Entrance	Lane Addition	909	C	1,443	D	803	C	1,295	C
	Southbound Zinfandel Drive Slip Entrance	One-Lane Merge	1,544	D	663	B	1,349	D	663	B
	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

Notes: Ramp vol. = Ramp volume

Bold values denote level of service "F" conditions.

Red shaded values indicate project impacts.

Source: DKS Associates 2019

PROJECT AND ALTERNATIVE 2

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.

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)

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

PROJECT

Table SI-35 summarizes the results of the rural roadway segment functionality analysis under the Cumulative Plus Jackson Corridor Projects (Project) 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 SI-13** depicts the location of the segments along which functionality impacts would occur.

As stated above, the Joint TIS and in Chapter 20, "Traffic and Circulation," it was 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 Project. As shown in **Table SI-35,** implementation of the Jackson Corridor Projects (Project) 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.

Table SI-35: Cumulative Plus Jackson Corridor Projects (Project) 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	34,000	Yes[3]
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	Rancho Cordova/County	2	23	Yes	8,369	6	Arterial M	50,410	Yes[3]
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	County	2	20	Yes	740	4	Arterial M	13,170	Yes[3]
20	Eagles Nest Rd	Jackson Rd	Florin Rd	County	2	<21	Yes	517	2	Arterial M	9,180	Yes
21	Eagles Nest Rd	Florin Rd	Grant Line Rd	County	2	<21	Yes	189	2	Arterial M	4,470	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	County	2	23	Yes	5,576	4	Arterial M	48,190	Yes[3]
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	County	2	23	Yes	5,797	4	Arterial M	33,950	Yes[3]
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	County	2	23	Yes	5,355	4	Arterial M	40,630	Yes[3]
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	County	2	23	Yes	2,158	3	Arterial M	33,740	Yes[3]
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	County	2	22	Yes	3,716	2	Arterial M	27,590	Yes
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	County	2	<21	Yes	5,075	3	Arterial M	37,130	Yes[3]
32	Excelsior Rd	Elder Creek Rd	Florin Rd	County	2	<21	Yes	4,203	3	Arterial M	12,510	Yes[3]
33	Excelsior Rd	Florin Rd	Gerber Rd	County	2	<21	Yes	5,423	2	Arterial M	12,810	Yes
34	Excelsior Rd	Gerber Rd	Calvine Rd	County	2	<21	Yes	4,229	2	Arterial M	8,160	Yes
39	Florin Rd	South Watt Ave	Hedge Ave	County	2	22	Yes	7,718	4	Arterial M	14,880	Yes[3]
40	Florin Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	6,312	4	Arterial M	17,360	Yes[3]
41	Florin Rd	Mayhew Rd	Bradshaw Rd	County	2	22	Yes	6,317	4	Arterial M	23,450	Yes[3]
42	Florin Rd	Bradshaw Rd	Excelsior Rd	County	2	22	Yes	3,478	4	Arterial M	25,600	Yes[3]
43	Florin Rd	Excelsior Rd	Sunrise Blvd	County	2	22	Yes	3,835	2	Arterial M	17,620	Yes
48	Fruitridge Rd	Fruitridge Rd	Hedge Ave	City of Sacramento/ County	2	22	Yes	2,890	3	Arterial M	20,600	Yes[3]
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	County	2	22	Yes	1,790	4	Arterial M	17,810	Yes[3]
50	Grant Line Rd	White Rock Rd	Douglas Rd	Rancho Cordova/County	2	22	Yes	7,189	4	Arterial M	41,060	Yes[3]
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	County	2	22	Yes	4,635	4	Arterial M	13,720	Yes[3]
59	Hedge Ave	Jackson Rd	Fruitridge Rd	County	2	22	Yes	3,061	2	Arterial M	9,920	Yes
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	City of Sacramento/County	2	22	Yes	3,737	2	Arterial M	6,870	Yes
61	Hedge Ave	Elder Creek Rd	Florin Rd	County	2	22	Yes	2,722	2	Arterial M	21,920	Yes
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	County	2	26	Yes	13,030	6	Arterial M	59,220	Yes[3]
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	County	2	26	Yes	10,478	4	Arterial M	62,440	Yes[3]

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]
74	Kiefer Blvd	Florin Perkins Rd	South Watt Ave	City of Sacramento/County	2	22	Yes	4,616	2	Arterial M	4,940	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	County	2	22	Yes	4,618	6	Arterial M	51,510	Yes[3]
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	County	2	22	Yes	656	3	Arterial M	39,640	Yes[3]
83	Mather Blvd-Excelsior Rd[4]	Douglas Rd	Kiefer Blvd	County	2	22	Yes	6,751	2	Res Collector F	6,350	No
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	County	2	22	Yes	1,616	4	Arterial M	53,200	Yes[3]
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	Rancho Cordova/County	2	20	Yes	2,490	4	Arterial M	55,990	Yes[3]
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	County	2	<21	Yes	2,848	4	Arterial M	22,240	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.

[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.

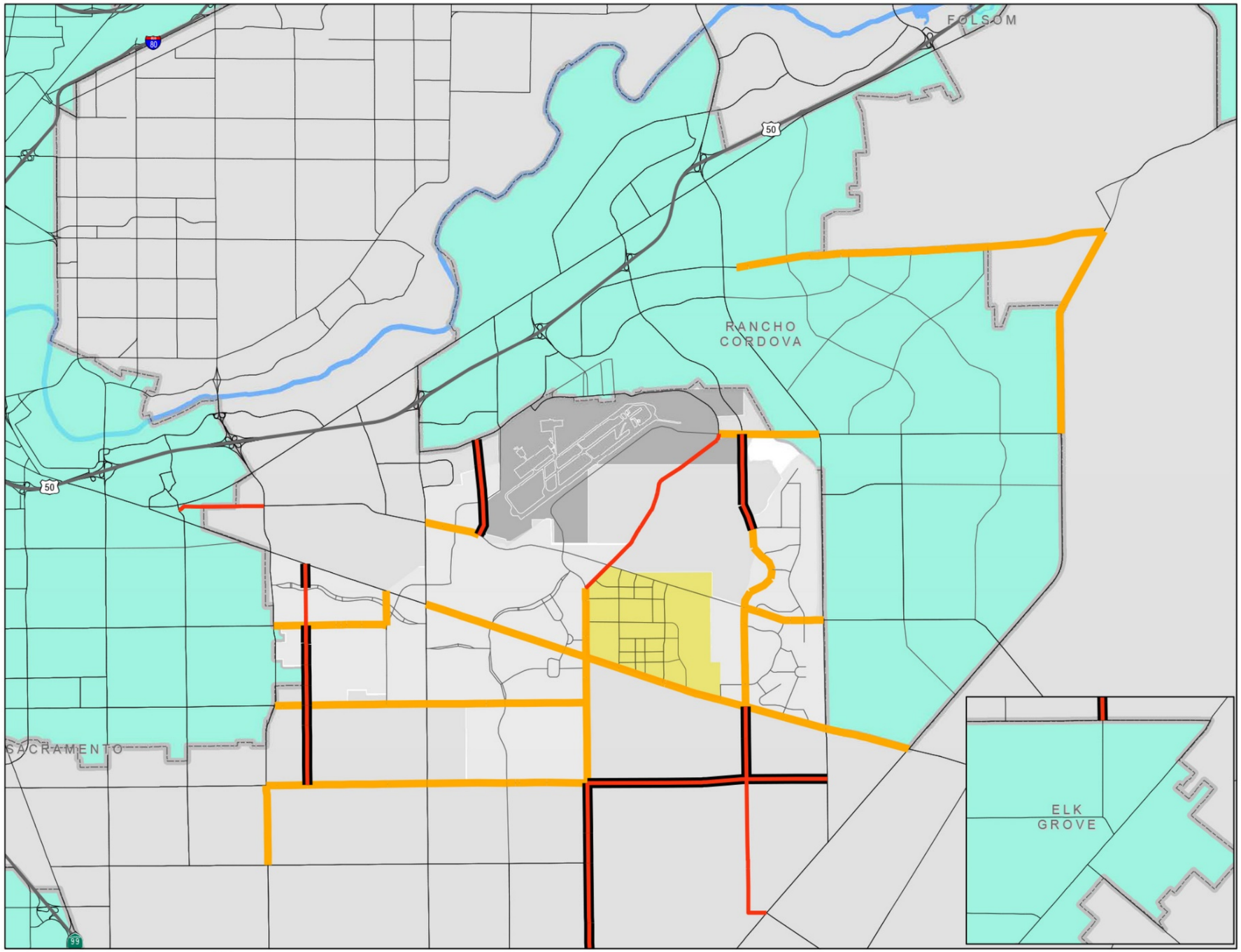
[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.

[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.

Red text with light gray shading indicate project impacts.

Source: DKS Associates 2019



Source: Image prepared and provided by DKS Associates in 2019

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Plate SI-13: Cumulative Plus Jackson Corridor Projects (Project) – Functionality Impacts

ALTERNATIVE 2

Table SI-36 summarizes the results of the rural roadway segment functionality analysis under the Jackson Corridor Projects (Alternative 2) scenario. As stated above, the traffic analysis assumed that Alternative 2 would construct several travel lanes on roadway segments that are internal to, or on the boundary of the Jackson Township 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 Alternative 2. **Plate SI-14** depicts the location of the segments along which functionality impacts would occur.

As shown in **Table SI-36**, implementation of the Jackson Corridor Projects (Alternative 2) would result in functionality impacts along 19 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 Measure TR-1, TR-2, and TR-8. 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 would include widening the deficient rural roadway segments to County standards.
>
> 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.

PROJECT

Implementation of Mitigation Measures TR-1, TR-2, TR-8, 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 (Project) scenario as shown in **Table SI-37**. However, it cannot be guaranteed that all of these improvements would be implemented concurrent with the phasing of development proposed for the 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 the Jackson Township 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 a **significant and unavoidable** cumulative roadway functionality impact.

ALTERNATIVE 2

Implementation of Mitigation Measures TR-1, TR-2, TR-8, 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 (Alternative 2) scenario as shown in **Table SI-38**. However, it cannot be guaranteed that all of these improvements would be implemented concurrent with the phasing of development proposed for the 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 the Jackson Township 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 a **significant and unavoidable** cumulative roadway functionality impact.

Table SI-36: Cumulative Plus Jackson Corridor Projects (Alternative 2) 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	33,660	Yes[3]
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	County	2	23	Yes	5,355	4	Arterial M	40,490	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	2	Arterial M	13,820	Yes
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

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]
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.

[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.

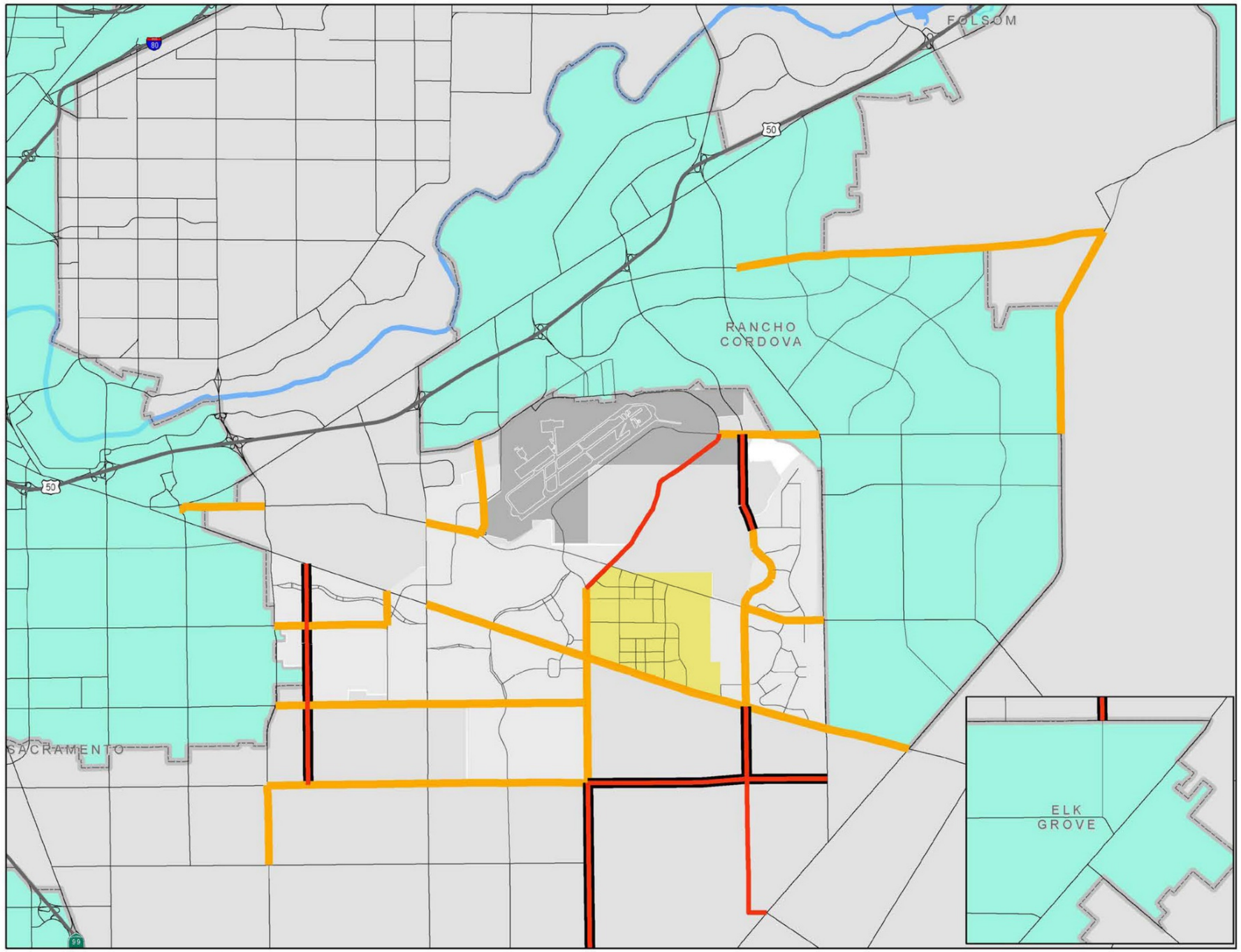
[3] The potential for an impact exists should the project generate traffic volumes on the roadway exceeding 6,000 ADT, or increasing more than 600 ADT on a roadway already above 6,000 ADT, prior to the construction of roadway improvements.

[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.

Red text with light gray shading indicate project impacts.

Source: DKS Associates 2019



Source: Image prepared and provided by DKS Associates in 2019

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Plate SI-14: Cumulative Plus Jackson Corridor Projects (Alternative 2) – Functionality Impacts

Table SI-37: Cumulative Plus Jackson Corridor Projects (Project) 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]		
15	Douglas Rd	Mather Blvd	Zinfandel Dr	4	Arterial M	34,000	Yes[3]	Widen to County standards [5]	No
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	50,410	Yes[3]	Widen to County standards [5]	No
19	Eagles Nest Rd	Kiefer Blvd	Jackson Rd	4	Arterial M	13,170	Yes[3]	Widen to County standards [5]	No
20	Eagles Nest Rd	Jackson Rd	Florin Rd	2	Arterial M	9,180	Yes	Widen to County standards [5]	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	4	Arterial M	48,190	Yes[3]	Widen to County standards [5]	No
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	4	Arterial M	33,950	Yes[3]	Widen to County standards [5]	No
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	40,630	Yes[3]	Widen to County standards [5]	No
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	3	Arterial M	33,740	Yes[3]	Widen to County standards [5]	No
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	2	Arterial M	27,590	Yes	Widen to County standards [5]	No
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	3	Arterial M	37,130	Yes[3]	Widen to County standards [5]	No
32	Excelsior Rd	Elder Creek Rd	Florin Rd	3	Arterial M	12,510	Yes[3]	Widen to County standards [5]	No
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Arterial M	12,810	Yes	Widen to County standards [5]	No
34	Excelsior Rd	Gerber Rd	Calvine Rd	2	Arterial M	8,160	Yes	Widen to County standards [5]	No
39	Florin Rd	South Watt Ave	Hedge Ave	4	Arterial M	14,880	Yes[3]	Widen to County standards [5]	No
40	Florin Rd	Hedge Ave	Mayhew Rd	4	Arterial M	17,360	Yes[3]	Widen to County standards [5]	No
41	Florin Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	23,450	Yes[3]	Widen to County standards [5]	No
42	Florin Rd	Bradshaw Rd	Excelsior Rd	4	Arterial M	25,600	Yes[3]	Widen to County standards [5]	No
43	Florin Rd	Excelsior Rd	Sunrise Blvd	2	Arterial M	17,620	Yes	Widen to County standards [5]	No
48	Fruitridge Rd	Fruitridge Rd	Hedge Ave	3	Arterial M	20,600	Yes[3]	Widen to County standards [5]	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]		
49	Fruitridge Rd	Hedge Ave	Mayhew Rd	4	Arterial M	17,810	Yes[3]	Widen to County standards [5]	No
50	Grant Line Rd	White Rock Rd	Douglas Rd	4	Arterial M	41,060	Yes[3]	Widen to County standards [5]	No
58	Happy Ln	Old Placerville Rd	Kiefer Blvd	4	Arterial M	13,720	Yes[3]	Widen to County standards [5]	No
59	Hedge Ave	Jackson Rd	Fruitridge Rd	2	Arterial M	9,920	Yes	Widen to County standards [5]	No
60	Hedge Ave	Fruitridge Rd	Elder Creek Rd	2	Arterial M	6,870	Yes	Widen to County standards [5]	No
61	Hedge Ave	Elder Creek Rd	Florin Rd	2	Arterial M	21,920	Yes	Widen to County standards [5]	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	6	Arterial M	59,220	Yes[3]	Widen to County standards [5]	No
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	4	Arterial M	62,440	Yes[3]	Widen to County standards [5]	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	6	Arterial M	51,510	Yes[3]	Widen to County standards [5]	No
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	3	Arterial M	39,640	Yes[3]	Widen to County standards [5]	No
89	Mayhew Rd	Jackson Rd	Fruitridge Rd	4	Arterial M	53,200	Yes[3]	Widen to County standards [5]	No
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	4	Arterial M	55,990	Yes[3]	Widen to County standards [5]	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	4	Arterial M	22,240	Yes[3]	Widen to County standards [5]	No

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 2019

Table SI-38: Cumulative Plus Jackson Corridor Projects (Alternative 2) 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]		
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
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	33,660	Yes[3]	Widen to County standards [5]	No
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	40,490	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 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
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

ID	Roadway	Segment		Cumulative Plus Jackson Corridor Projects				Mitigation	Impact after Mitigation?
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Functionality Impact? [2]		
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	2	Arterial M	13,820	Yes	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 standards [5]	No
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

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.
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.
Red text with light gray shading indicate project impacts.
Source: DKS Associates 2019

CUMULATIVE PLUS JACKSON TOWNSHIP PROJECT

CUMULATIVE ROADWAY SEGMENT OPERATIONS CUMULATIVE PLUS JACKSON TOWNSHIP PROJECT

PROJECT

Table SI-39 summarizes the results of the operations analysis for the traffic study area roadway segments under the Cumulative No Project and Cumulative Plus Jackson Township Project (Project) 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 SI-39**, the addition of vehicle trips generated by the Jackson Township Project (Project) scenario would result in the exceedance of applicable LOS and V/C thresholds along 13 roadway segments in the study area. Thus, this impact would be **cumulatively considerable.**

ALTERNATIVE 2

Table SI-40 summarizes the results of the operations analysis for the traffic study area roadway segments under the Cumulative No Project and Cumulative Plus Jackson Township Project (Alternative 2) conditions. 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 SI-40**, the addition of vehicle trips generated by the Jackson Township Project (Alternative 2) scenario would result in the exceedance of applicable LOS and V/C thresholds along 14 roadway segments in the study area. Thus, this impact would be **cumulatively considerable.**

MITIGATION MEASURES

CU-TR-5. Cumulative Roadway Segment Operations Cumulative Jackson Township 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 necessary improvements. Where feasible, the number of roadway lanes would be increased to mitigate the impact. However, the increased number of lanes could not exceed the maximum General Plan designations of the appropriate jurisdictions.

PROJECT

Implementation of Mitigation Measures TR-1, TR-2, TR-3, CU-TR-1, and CU-TR-5 would result in fair share payments toward improvements that would reduce the cumulative roadway segment impacts of the Project. As shown in **Table SI-41**, 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 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 Jackson Township Project (Project) as shown in **Table SI-41**. However, as shown in **Table SI-41**, seven roadway segments operating unacceptably under the Cumulative Plus Jackson Township (Project) 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**.**

Table SI-39: Cumulative Roadway Segment Levels of Service - Impacts Triggered by Jackson Township Project (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	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6	2	Arterial M	11,960	0.66	B	3	Arterial M	37,780	2.10	F	West Jackson
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd	2	Arterial M	11,960	0.66	B	3	Arterial M	37,130	2.06	F	West Jackson
66.2	Jackson Rd	14th Ave	Rock Creek Pkwy	4	Arterial M	40,320	1.12	F	4	Arterial M	61,500	1.71	F	
66.3	Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy	4	Arterial M	34,630	0.96	E	4	Arterial M	57,370	1.59	F	
67	Jackson Rd	South Watt Ave	Hedge Ave	4	Arterial M	38,240	1.06	F	4	Arterial M	67,850	1.88	F	
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4	2	Rural Hwy	23,120	1.01	F	6	Arterial M	59,220	1.10	F	West Jackson
70.2	Jackson Rd	Collector WJ-4	Happy Ln	2	Rural Hwy	23,190	1.01	F	6	Arterial M	59,210	1.10	F	West Jackson
71.1	Jackson Rd	Excelsior Rd	Collector JT-3	2	Rural Hwy	23,020	1.01	F	4	Arterial M	62,440	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	40,520	1.13	F	Jackson Township
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	4	Arterial M	31,730	0.88	D	4	Arterial M	45,430	1.26	F	
79	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	20,760	0.58	A	4	Arterial M	33,480	0.93	E	
405	Collector JT-3	Collector JT-5	Jackson Rd						2	Arterial M	20,320	1.13	F	Jackson Township

Note: Gray shading indicates 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
Bold values do not meet LOS policy. Red values with light gray shading indicate project impacts.
Source: DKS Associates 2019

Table SI-40: Cumulative Roadway Segment Levels of Service - Impacts Triggered by Jackson Township Project (Alternative 2)

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	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	
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	
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
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	
67	Jackson Rd	South Watt Ave	Hedge Ave	4	Arterial M	38,240	1.06	F	4	Arterial M	66,380	1.84	F	
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
70.2	Jackson Rd	Collector WJ-4	Happy Ln	2	Rural Hwy	23,190	1.01	F	6	Arterial M	59,660	1.10	F	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
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	4	Arterial M	31,730	0.88	D	4	Arterial M	45,290	1.26	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	

Note: Gray shading indicates 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
Bold values do not meet LOS policy. Red values with light gray shading indicate project impacts.
Source: DKS Associates 2019

Table SI-41: Cumulative Plus Jackson Corridor Projects Roadway Segment Mitigations - Impacts Triggered by Jackson Township Project (Project)

ID	Roadway	Segment		Cumulative Plus Jackson Corridor Projects					Mitigated Cumulative Plus Jackson Corridor Projects						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
31.1	Excelsior Rd	Jackson Rd	Collector WJ-6	3	Arterial M	37,780	2.10	F	6	Arterial M	0.70	B	No		
31.2	Excelsior Rd	Collector WJ-6	Elder Creek Rd	3	Arterial M	37,130	2.06	F	6	Arterial M	0.69	B	No		
66.2	Jackson Rd	14th Ave	Rock Creek Pkwy	4	Arterial M	61,500	1.71	F	4	Arterial M	1.71	F	Yes		Maximum General Plan lanes
66.3	Jackson Rd	Rock Creek Pkwy	Aspen 1 Dwy	4	Arterial M	57,370	1.59	F	4	Arterial M	1.59	F	Yes		Maximum General Plan lanes
67	Jackson Rd	South Watt Ave	Hedge Ave	4	Arterial M	67,850	1.88	F	6	Arterial M	1.26	F	Yes		Maximum General Plan lanes
70.1	Jackson Rd	Bradshaw Rd	Collector WJ-4	6	Arterial M	59,220	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	59,210	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	62,440	1.73	F	6	Arterial M	1.16	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	40,520	1.13	F	6	Arterial M	0.75	C	No		
71.4	Jackson Rd	Collector JT-4	Eagles Nest Rd	4	Arterial M	37,510	1.04	F					No		
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	4	Arterial M	45,430	1.26	F	6	Arterial M	0.84	D	No		
79	Kiefer Blvd	Sunrise Blvd	Rancho Cordova Pkwy	4	Arterial M	33,480	0.93	E	4	Arterial M	0.93	E	Yes		Maximum General Plan lanes
405	Collector JT-3	Collector JT-5	Jackson Rd	2	Arterial M	20,320	1.13	F	4	Arterial M	0.56	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.

Bold values do not meet LOS policy. Red values with light gray shading indicate project impacts.

Source: DKS Associates 2019

ALTERNATIVE 2

Implementation of Mitigation Measures TR-1, TR-2, TR-3, CU-TR-1, and CU-TR-5 would result in fair share payments toward improvements that would reduce the cumulative roadway segment impacts of the Project. As shown in **Table SI-42**, implementation of Mitigation Measure CU-TR-5 would result in fair share payment toward improvements that would reduce the impacts of the Jackson Township Project (Project) as shown in **Table SI-42**. However, as shown in **Table SI-42**, seven roadway segments operating unacceptably under the Cumulative Plus Jackson Township (Alternative 2) 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 JACKSON TOWNSHIP PROJECT

PROJECT

Table SI-43 and **Table SI-44** summarize the results of the operations analysis for the study area intersections under Cumulative Plus Jackson Township Project (Project) conditions. The tables include the implementation of intersection changes associated with the Jackson Township Project. **Table SI-44** 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 SI-43** 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 Jackson Township Project (Project) conditions:

- Eagles Nest Road and Florin Road

As shown in **Table SI-43**, the addition of vehicle trips generated by the Jackson Township Project would result in the exceedance of applicable LOS and delay thresholds under Cumulative Plus Jackson Township Project (Project) conditions. Thus, the project would result in a considerable contribution to a significant cumulative impact.

ALTERNATIVE 2

Table SI-45 and **Table SI-46** summarize the results of the operations analysis for the study area intersections under Cumulative Plus Jackson Township Project (Alternative 2) conditions. The tables include the implementation of intersection changes associated with the Jackson Township Project. **Table SI-46** 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 SI-45** 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 Jackson Township Project (Alternative 2) conditions:

- Eagles Nest Road and Florin Road

As shown in **Table SI-45**, the addition of vehicle trips generated by the Jackson Township Project would result in the exceedance of applicable LOS and delay thresholds under Cumulative Plus Jackson Township Project (Alternative 2) conditions. Thus, the project would result in a considerable contribution to a significant cumulative impact.

MITIGATION MEASURES

CU-TR-6. Cumulative Intersection Operations Cumulative Jackson Township Project

> The project applicant shall implement Mitigation Measure CU-TR-2. The project applicant shall implement the set of improvements assigned to the project by the Tool (Mitigation Measure TR-1). Where feasible, the number of roadway lanes 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 would propose alternative mitigation measures. These generally include providing additional turn lanes, carrying an additional through lane past the intersection, or designating the intersection as a High Capacity Intersection.

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 SI-47a** through **Table SI-48b** below.

Table SI-47a and **Table SI-48a** 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 Township Project (Project) scenario. **Table SI-47b** and **Table SI-48b** 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 Township Project (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 SI-48a** and **Table SI-48b** 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 of Mitigation Measure CU-TR-6 would result in fair share payments toward improvements that would reduce the impacts of the Jackson Township Project as shown in **Table SI-47a** and **Table SI-47b**. However, as shown in **Table SI-48a** and **Table SI-48b**, it cannot be guaranteed that all of these improvements would be implemented concurrent with the phasing of development proposed for the Jackson Township 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 Jackson Township 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.

ALTERNATIVE 2

- The project applicant shall implement Mitigation Measures TR-1, TR-2, TR-4, and CU-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 SI-49a** and **Table SI-50a**. **Table SI-49a** and **Table SI-50a** 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 (Alternative 2) scenario. **Table SI-49b** and **Table SI-50b** 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 (Alternative 2) 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 SI-50a** and **Table SI-50b** also identify those intersections that would continue operate at unacceptable levels after mitigation, along with the constraint that precluded full mitigation. 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 "High Capacity Intersections" identified in **Table SI-50b** are provided in Appendix TR-1.

Implementation of mitigation TR-1, TR-2, TR-4, and CU-TR-2 would result in fair share payments toward improvements that would reduce the cumulative intersection impacts of the Alternative 2. 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 SI-50a** and **Table SI-50b**, 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. Thus, the addition of vehicle trips generated by project buildout would result in the exceedance of applicable LOS and delay thresholds under Cumulative Plus Jackson Corridor Projects (Alternative 2) conditions. Therefore, Alternative 2 would have a substantial contribution to a significant cumulative impact. This impact would be considerable and **significant and unavoidable**.

Table SI-42: Cumulative Plus Jackson Corridor Projects Roadway Segment Mitigations - Impacts Triggered by Jackson Township Project (Alternative 2)

ID	Roadway	Segment		Cumulative Plus Jackson Corridor Projects					Mitigated Cumulative Plus Jackson Corridor Projects						
		From	To	Travel Lanes	Facility Type[1]	Forecasted Volume	Volume/ Capacity Ratio	Level of Service	Travel Lanes	Facility Type[1]	Volume / Capacity Ratio	Level of Service	LOS Impact with Mitigation?	Alternative Mitigation[2]	Constraint if Full Mitigation Not Possible
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		
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		
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
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
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		
73	Jackson Rd	Sunrise Blvd	Grant Line Rd	4	Arterial M	45,290	1.26	F	6	Arterial M	0.84	D	No		
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

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.

Bold values do not meet LOS policy. Red values with light gray shading indicate project impacts.

Source: DKS Associates 2019

Table SI-43: Cumulative Plus Jackson Corridor Projects Intersection Levels of Service - Impacts Triggered by Jackson Township Project (Project)

	Intersection	A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Township 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	>300	Yes	Signal	D	39.0	Signal	F	269.1	Yes
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
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*	
69	Sunrise Boulevard & Kiefer Boulevard	Signal	F	151.0	Signal	F	>300	Yes	Signal	F	138.0	Signal	F	261.4	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 2019

Table SI-44: Cumulative Plus Jackson Corridor Projects Intersection Geometrics - Impacts Triggered by Jackson Township Project (Project)

	Intersection	Traffic Control		Super Cumulative No Project Lane Geometrics				Super Cumulative Plus Jackson Township Projects Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus Plus Jackson Township Projects	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
45	Excelsior Road & Jackson Road	Signal	Signal									West Jackson; Jackson Township
47	Excelsior Road & Florin Road	All-way stop	Signal									West Jackson
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									
69	Sunrise Boulevard & Kiefer Boulevard	Signal	Signal									NewBridge; 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 Associates 2019

Table SI-45: Cumulative Plus Jackson Corridor Projects Intersection Levels of Service - Impacts Triggered by Jackson Township Project (Alternative 2)

	Intersection	A.M. Peak Hour							P.M. Peak Hour						
		Cumulative No Project			Cumulative Plus Jackson Township Projects			LOS Impact	Cumulative No Project			Cumulative Plus Jackson Township 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
51	Mather Field Road & Rockingham Drive	Signal	F	156.5	Signal	F	>300	Yes	Signal	F	119.4	Signal	F	170.3	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*	

Note: Gray shading represents changes in traffic control that the project is responsible to provide.
Source: DKS Associates 2019

Table SI-46: Cumulative Plus Jackson Corridor Projects Intersection Geometrics - Impacts Triggered by Jackson Township Project (Alternative 2)

Intersection		Traffic Control		Super Cumulative No Project Lane Geometrics				Super Cumulative Plus Jackson Township Projects Lane Geometrics				Project(s) Responsible for Change
		Existing	Existing Plus Plus Jackson Township Projects	NB Approach	SB Approach	EB Approach	WB Approach	NB Approach	SB Approach	EB Approach	WB Approach	
45	Excelsior Road & Jackson Road	Signal	Signal									West Jackson; Jackson Township
51	Mather Field Road & Rockingham Drive	Signal	Signal									
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Two-way stop	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 2019

Table SI-47a: Cumulative Plus Jackson Corridor Projects Intersection Impacts and Mitigations - Impacts Triggered by Jackson Township (Project)

Intersection		A.M. Peak Hour							P.M. Peak Hour						
		Cumulative Plus Plus Jackson Corridor Projects			County Standard Mitigated Cumulative Plus Jackson Corridor Projects			Alternative Mitigation Needed	Cumulative Plus All			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)	
45	Excelsior Road & Jackson Road	Signal	F	>300	Signal	F	118.6	Yes	Signal	F	269.1	Signal	F	150.7	Yes
47	Excelsior Road & Florin Road	Signal	F	111.2	Signal	D	47.2	No	Signal	E	74.2	Signal	E	67.3	No
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	61.9	No	Signal	F	220.1	Signal	E	68.4	No
61	Eagles Nest Road & Florin Road	Two-way stop			Signal	F	142.4	Yes	Two-way stop			Signal	F	137.7	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*				
69	Sunrise Boulevard & Kiefer Boulevard	Signal	F	>300	Signal	F	118.3	No	Signal	F	261.4	Signal	E	71.1	No

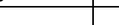
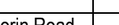
Note: Gray shading represents changes in traffic control that the project is responsible to provide.
Bold values do not meet LOS policy. Red values with light gray shading indicate project impacts.
Source: DKS Associates 2019

Table SI-47b: Cumulative Plus Jackson Corridor Projects Intersection Impacts and Mitigations - Impacts Triggered by Jackson Township (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)
45	Excelsior Road & Jackson Road	Signal	F	118.6	Signal	-	-	Signal	F	150.7	Signal	-	-
51	Mather Field Road & Rockingham Drive	Signal	F	>300	Signal	-	-	Signal	F	>300	Signal	-	-
61	Eagles Nest Road & Florin Road	Signal	F	142.4	Signal	D	50.4	Signal	F	137.7	Signal	D	45.5

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 2019

Table SI-48a: Cumulative Plus Jackson Corridor Projects Intersection Impacts and Mitigations - Impacts Triggered by Jackson Township (Project)

		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	
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
69	Sunrise Boulevard & Kiefer Boulevard	Signal	Signal									No

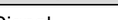
[1] High capacity intersections are defined in the Sacramento County General Plan and may include grade separations, additional turn lanes, and/or other features as deemed appropriate by the County.

[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.

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 2019

Table SI-48b: Cumulative Plus Jackson Corridor Projects Intersection Impacts and Mitigations - Impacts Triggered by Jackson Township (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				
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		

[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.

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 2019

Table SI-49a: Cumulative Plus Jackson Corridor Projects Intersection Impacts and Mitigations - Impacts Triggered by Jackson Township (Alternative 2)

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)	
45	Excelsior Road & Jackson Road	Signal	F	330.8	Signal	F	106.9	Yes	Signal	F	269.1	Signal	F	144.6	Yes
51	Mather Field Road & Rockingham Drive	Signal	F	>300				Yes	Signal	F	170.3				Yes
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*				

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 2019

Table SI-49b: Cumulative Plus Jackson Corridor Projects Intersection Impacts and Mitigations - Impacts Triggered by Jackson Township (Alternative 2)

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)
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

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 2019

Table SI-50a: Cumulative Plus Jackson Corridor Projects Intersection Impacts and Mitigations - Impacts Triggered by Jackson Township (Alternative 2)

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 Mitgation?
		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	
45	Excelsior Road & Jackson Road	Signal	Signal									Yes
51	Mather Field Road & Rockingham Drive	Signal	Signal									Yes
61	Eagles Nest Rd/Eagles Nest Road & Florin Road	Two-way stop	Signal									Yes

[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.

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 2019

Table SI-50b: Cumulative Plus Jackson Corridor Projects Intersection Impacts and Mitigations - Impacts Triggered by Jackson Township (Alternative 2)

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 Mitgation?	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				
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		

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.

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 2019

FREEWAY FACILITY IMPACTS CUMULATIVE PLUS JACKSON TOWNSHIP PROJECT

PROJECT

CUMULATIVE FREEWAY SEGMENTS CUMULATIVE JACKSON TOWNSHIP PROJECT

With implementation of the Cumulative Plus Project scenario, the Caltrans' threshold of significance (5 percent V/C increase) would not be exceeded along any of the freeway segments analyzed. Detailed freeway mainline operations calculations are included in Appendix TR-1. Additionally, none of the impacts shown in **Table SI-27** would be triggered by the Cumulative Plus Project scenario alone.

CUMULATIVE FREEWAY RAMP INTERSECTION QUEUING CUMULATIVE JACKSON TOWNSHIP PROJECT

Table SI-28 and Table SI-29 show the a.m. and p.m. peak hour freeway ramp intersection queuing under the Cumulative Plus Project scenario. Detailed freeway mainline operations calculations are included in Appendix TR-1. None of the impacts shown in **Table SI-28 and Table SI-29** would be triggered by the Cumulative Plus Project scenario alone.

CUMULATIVE FREEWAY MERGE / DIVERGE / WEAVE SEGMENTS CUMULATIVE JACKSON TOWNSHIP PROJECT

Table SI-30 summarizes a.m. and p.m. peak hour freeway operations at merge/diverge/weave segments under the Cumulative Plus Project scenario. Detailed merge/diverge/weave data and analysis is included in Appendix TR-1. As shown in **Table SI-30**, with implementation of the Cumulative Plus Project scenario, none of the merge/diverge/weave segments would experience merge / diverge LOS worse than the freeway's LOS. Thus, the Cumulative Plus Project scenario would not trigger any impacts.

In summary, because the addition of Project traffic to the freeway facilities in the study area would not result in the degradation of service along any freeway facility in the study area, the project would not have a considerable contribution to a significant cumulative freeway impact**.**

ALTERNATIVE 2

CUMULATIVE FREEWAY SEGMENTS CUMULATIVE JACKSON TOWNSHIP PROJECT

With implementation Alternative 2, the Caltrans' threshold of significance (5 percent V/C increase) would not be exceeded along any of the freeway segments analyzed. Detailed freeway mainline operations calculations are included in Appendix TR-1. Additionally, none of the impacts shown in **Table SI-31** would be triggered by the Alternative 2 alone.

CUMULATIVE FREEWAY RAMP INTERSECTION QUEUING CUMULATIVE JACKSON TOWNSHIP PROJECT

Table SI-32 and Table SI-33 show the a.m. and p.m. peak hour freeway ramp intersection queuing under the Cumulative Plus Alternative 2 scenario. Detailed freeway mainline operations calculations are included in Appendix TR-1. None of the impacts shown in **Table SI-32 and Table SI-33** would be triggered by Alternative 2 alone.

CUMULATIVE FREEWAY MERGE / DIVERGE / WEAVE SEGMENTS CUMULATIVE JACKSON TOWNSHIP PROJECT

Table SI-34 summarizes a.m. and p.m. peak hour freeway operations at merge/diverge/weave segments under the Cumulative Plus Alternative 2 scenario. Detailed merge/diverge/weave data and analysis is included in Appendix TR-1. As shown in **Table SI-34**, with implementation of Alternative 2, none of the merge/diverge/weave segments would experience merge / diverge LOS worse than the freeway's LOS. Thus, the Cumulative Plus Alternative 2 scenario would not trigger any impacts.

In summary, because the addition of Alternative 2 traffic to the freeway facilities in the study area would not result in the degradation of service along any freeway facility in the study area, the project would not have a considerable contribution to a significant cumulative freeway impact**.**

MITIGATION MEASURES

No mitigation is required.

CUMULATIVE ROADWAY FUNCTIONALITY IMPACTS CUMULATIVE JACKSON TOWNSHIP PROJECT

PROJECT

Table SI-51 summarizes the results of the rural roadway segment functionality analysis under Cumulative Plus Project conditions. This table includes the number of lanes assumed with the implementation of the 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 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 20, "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 Project.

As shown in **Table SI-51**, the implementation of the Jackson Township Project would result in functionality impacts along 20 roadway segments within the project study area. Therefore, the project would have a considerable contribution to a significant cumulative impact.

ALTERNATIVE 2

Table SI-52 summarizes the results of the rural roadway segment functionality analysis under Cumulative Plus Alternative 2 conditions. As stated above, the traffic analysis assumed that Alternative 2 would construct several travel lanes on roadway segments that are internal to, or on the boundary of the Jackson Township 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 Alternative 2.

As shown in **Table SI-52**, implementation of Alternative 2 would result in functionality impacts along 22 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-7. Cumulative Roadway Functionality Improvements

The project applicant shall implement Mitigation Measures TR-1, TR-2, and TR-8 and CU-TR-4. 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 would include widening the deficient rural roadway segments to County standards.

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.

PROJECT

Implementation of Mitigation Measures TR-1, TR-2, TR-8, CU-TR-4, and CU-TR-7 would result in fair share payment toward improvements that would reduce the cumulative roadway functionality impacts of the Cumulative Plus Jackson Township (Project) scenario as shown in **Table SI-53**. However, it cannot be guaranteed that all of these improvements would be implemented concurrent with the phasing of development proposed for the 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 the Jackson Township 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 SI-51: Cumulative Plus Jackson Corridor Projects Functionality - Impacts Triggered by Jackson Township (Project)

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	34,000	Yes[3]
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	Rancho Cordova/County	2	23	Yes	8,369	6	Arterial M	50,410	Yes[3]
25	Elder Creek Rd	South Watt Ave	Hedge Ave	County	2	23	Yes	5,576	4	Arterial M	48,190	Yes[3]
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	County	2	23	Yes	5,797	4	Arterial M	33,950	Yes[3]
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	County	2	23	Yes	5,355	4	Arterial M	40,630	Yes[3]
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	County	2	23	Yes	2,158	3	Arterial M	33,740	Yes[3]
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	County	2	22	Yes	3,716	2	Arterial M	27,590	Yes
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	County	2	<21	Yes	5,075	3	Arterial M	37,130	Yes[3]
32	Excelsior Rd	Elder Creek Rd	Florin Rd	County	2	<21	Yes	4,203	3	Arterial M	12,510	Yes[3]
33	Excelsior Rd	Florin Rd	Gerber Rd	County	2	<21	Yes	5,423	2	Arterial M	12,810	Yes
41	Florin Rd	Mayhew Rd	Bradshaw Rd	County	2	22	Yes	6,317	4	Arterial M	23,450	Yes[3]
42	Florin Rd	Bradshaw Rd	Excelsior Rd	County	2	22	Yes	3,478	4	Arterial M	25,600	Yes[3]
48	Fruitridge Rd	Fruitridge Rd	Hedge Ave	City of Sacramento/ County	2	22	Yes	2,890	3	Arterial M	20,600	Yes[3]
50	Grant Line Rd	White Rock Rd	Douglas Rd	Rancho Cordova/County	2	22	Yes	7,189	4	Arterial M	41,060	Yes[3]
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	County	2	26	Yes	13,030	6	Arterial M	59,220	Yes[3]
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	County	2	26	Yes	10,478	4	Arterial M	62,440	Yes[3]
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	County	2	22	Yes	4,618	6	Arterial M	51,510	Yes[3]
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	County	2	22	Yes	656	3	Arterial M	39,640	Yes[3]
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	Rancho Cordova/County	2	20	Yes	2,490	4	Arterial M	55,990	Yes[3]
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	County	2	<21	Yes	2,848	4	Arterial M	22,240	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.

[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.

Red text with light gray shading indicate project impacts.

Source: DKS Associates 2019

Table SI-52: Cumulative Plus Jackson Corridor Projects Functionality – Impacts Triggered by Jackson Township (Alternative 2)

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]
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]
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	County	2	23	Yes	5,355	4	Arterial M	40,490	Yes[3]
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	County	2	23	Yes	2,158	3	Arterial M	30,740	Yes[3]
30.2	Excelsior Rd	Douglas Rd	Collector WJ-1/ Collector JT-1	County	2		Yes	3,716	4	Arterial M	26,970	Yes[3]
30.3	Excelsior Rd	Collector WJ-1/ Collector JT-1	Collector WJ-2/ Collector JT-2	County	2		Yes	3,716	4	Arterial M	25,900	Yes[3]
30.4	Excelsior Rd	Collector WJ-2/ Collector JT-2	Jackson Rd	County	2		Yes	3,716	4	Arterial M	25,400	Yes[3]
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
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]
48	Fruitridge Rd	South Watt Ave	Hedge Ave	City of Sacramento/ County	2	22	Yes	2,890	3	Arterial M	24,240	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]
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]
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]
116.3	White Rock Rd	Americanos Blvd	Grant Line Rd	Rancho Cordova/County	2		Yes	2,490	4	Arterial M	16,530	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.

[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.

Red text with light gray shading indicate project impacts.

Source: DKS Associates 2019

Table SI-53: Cumulative Plus Jackson Corridor Projects Functionality Mitigations - Impacts Triggered by Jackson Township (Project)

ID	Roadway	Segment		Cumulative Plus Jackson Corridor 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	34,000	Yes[3]	Widen to County standards [5]	No
16	Douglas Rd	Zinfandel Dr	Sunrise Blvd	6	Arterial M	50,410	Yes[3]	Widen to County standards [5]	No
25	Elder Creek Rd	South Watt Ave	Hedge Ave	4	Arterial M	48,190	Yes[3]	Widen to County standards [5]	No
26	Elder Creek Rd	Hedge Ave	Mayhew Rd	4	Arterial M	33,950	Yes[3]	Widen to County standards [5]	No
27	Elder Creek Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	40,630	Yes[3]	Widen to County standards [5]	No
28	Elder Creek Rd	Bradshaw Rd	Excelsior Rd	3	Arterial M	33,740	Yes[3]	Widen to County standards [5]	No
30	Excelsior Rd	Kiefer Blvd	Jackson Rd	2	Arterial M	27,590	Yes	Widen to County standards [5]	No
31	Excelsior Rd	Jackson Rd	Elder Creek Rd	3	Arterial M	37,130	Yes[3]	Widen to County standards [5]	No
32	Excelsior Rd	Elder Creek Rd	Florin Rd	3	Arterial M	12,510	Yes[3]	Widen to County standards [5]	No
33	Excelsior Rd	Florin Rd	Gerber Rd	2	Arterial M	12,810	Yes	Widen to County standards [5]	No
41	Florin Rd	Mayhew Rd	Bradshaw Rd	4	Arterial M	23,450	Yes[3]	Widen to County standards [5]	No
42	Florin Rd	Bradshaw Rd	Excelsior Rd	4	Arterial M	25,600	Yes[3]	Widen to County standards [5]	No
48	Fruitridge Rd	Fruitridge Rd	Hedge Ave	3	Arterial M	20,600	Yes[3]	Widen to County standards [5]	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]		
50	Grant Line Rd	White Rock Rd	Douglas Rd	4	Arterial M	41,060	Yes[3]	Widen to County standards [5]	No
70	Jackson Rd	Bradshaw Rd	Excelsior Rd	6	Arterial M	59,220	Yes[3]	Widen to County standards [5]	No
71	Jackson Rd	Excelsior Rd	Eagles Nest Rd	4	Arterial M	62,440	Yes[3]	Widen to County standards [5]	No
77	Kiefer Blvd	Bradshaw Rd	Happy Ln	6	Arterial M	51,510	Yes[3]	Widen to County standards [5]	No
78	Kiefer Blvd	Zinfandel Dr	Sunrise Blvd	3	Arterial M	39,640	Yes[3]	Widen to County standards [5]	No
116	White Rock Rd	Fitzgerald Rd	Grant Line Rd	4	Arterial M	55,990	Yes[3]	Widen to County standards [5]	No
123	Zinfandel Dr	Douglas Rd	Kiefer Blvd	4	Arterial M	22,240	Yes[3]	Widen to County standards [5]	No

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.

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.

Red text with light gray shading indicate project impacts.

Source: DKS Associates 2019

ALTERNATIVE 2

Implementation of Mitigation Measures TR-1, TR-2, TR-8, CU-TR-4, and CU-TR-7 would result in fair share payment toward improvements that would reduce the cumulative roadway functionality impacts of the Cumulative Plus Jackson Township (Alternative 2) scenario as shown in **Table SI-53**. However, it cannot be guaranteed that all of these improvements would be implemented concurrent with the phasing of development proposed for Alternative 2 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 the Jackson Township 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, Alternative 2 would have a **considerable contribution** to **significant and unavoidable** cumulative roadway functionality impact.

WATER SUPPLY

CUMULATIVE SETTING

The Plan area is in the unincorporated Sacramento County, near several other projects including NewBridge, Mather South, 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 would serve the 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 19, “Water Supply,” SCWA has been planning for and implementing regional water supply infrastructure upgrades in the Zone 40/41 area that serves the 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 NewBridge 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 NewBridge projects are approved and proceed (SCWA 2016).

SCWA has included the Project and other anticipated projects including in the build-out scenario for future water demands. **Table SI-54** provides a summary and schedule of the SCWA’s planned water supply projects that are planned through 2040 to meet projected water demand.

Table SI-54: 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 Project and Alternative 2 would not result in a considerable contribution such that a new significant cumulative impact related to water supply would occur. The cumulative impact 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 Highway 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.

NEWBRIDGE SPECIFIC PLAN AREA

The NewBridge 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 NewBridge Specific 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 NewBridge plan boundary and Sunrise Boulevard.

WEST JACKSON HIGHWAY MASTER PLAN

The West Jackson Highway Master Plan 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. 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 Road 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 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). 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. Because the Plan Area under the Project and Alternative 2 have the same geographic boundaries, the energy infrastructure within the Plan Area would not change with implementation of Alternative 2.

The Jackson Bulk Substation (bulk substation) and ancillary facilities, however, would be at least partially located outside of the boundaries of these master plans. Should Option 1 be selected for the bulk substation, it would be located offsite 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 SI-55** 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 before construction of any of the proposed substations which will determine the environmental impacts and respective mitigation measures.

Table SI-55: 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 Road, 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 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.

Affected Resources	Potential 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 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

Affected Resources	Potential Impacts
	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 in the Plan Area 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**.
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

Affected Resources	Potential Impacts
	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 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).

Affected Resources	Potential Impacts
	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 Plan Area 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 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}

Affected Resources	Potential Impacts
	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 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 applicants for the NewBridge Specific Plan, the West Jackson Highway Master Plan, the Jackson Township Specific Plan, and the Mather South Community Master Plan, shall each 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 project approval.

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 before 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 before 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 practicable.

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 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.

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 NO_x reductions sufficient to demonstrate compliance with the SMAQMD's maximum allowable mass emissions threshold of 85 pounds per day (lbs/day) of NO_x.

   - 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 NO_x.

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 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 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 before 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 before 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. Before 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 before 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.

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22 ADDITIONAL ANALYSIS

This chapter provides additional analysis about the Jackson Township Project's (Project's) potential effects in the region, including socioeconomic considerations, potential growth inducement, and environmental justice issues. This discussion is provided to inform decision makers about any potential implications of the Project or Alternative 2 and to comply with the California Environmental Quality Act (CEQA). While many of these topics are not required to be addressed by CEQA, they are nonetheless discussed here because the Sacramento Local Area Formation Commission (LAFCo) has policies requiring their consideration.

SOCIOECONOMICS

Section 15131 of the State CEQA Guidelines establishes parameters for evaluation of social and economic effects. Economic and social effects are not to be treated as significant effects on the environment, but may influence the analysis and decision-making in three key ways: (1) where a decision on a project would generate economic or social changes that, in turn, would result in physical changes that require analysis; (2) where social and economic conditions may inform the determination of whether a physical change resulting from the project would be significant; and (3) in determining whether changes in a project are feasible to reduce or avoid the significant effect on the environment identified in the environmental impact report (EIR).

PLAN AREA DEMOGRAPHICS

The Project is in unincorporated Sacramento County, California, between the City of Rancho Cordova to the north and the City of Elk Grove to the south, in Census Tract 90.05. As indicated in Table 22-1, Census Tract 90.05 is reflective of countywide trends in terms of median age of the population, percentage of the population over 65 years old, portion of the population that self-identifies as Hispanic or Latino, unemployment rate, and average household size (U.S. Census Bureau 2017). The percentage of the total population below the poverty level in Census Tract 90.05 is slightly lower than county-wide, while the portion of households that primarily speak a language other than English is slightly higher near the Project than the county overall.

There are no areas in Sacramento that can be described as areas of minority concentration (i.e., areas with minority concentration above 51 percent of total population) (SHRA 2016). As demonstrated in Table 22-2, Census Tract 90.05 is primarily white (nearly 60 percent), with other races comprising similar proportions of the population as in Sacramento County overall.

Table 22-1: Population Characteristics of Census Tract 90.05 and Sacramento County

	Census Tract 90.05 (Including Project Area)		Sacramento County	
	Number	**Percent of Total**	**Number**	**Percent of Total**
Total Population	**3,337**	**-**	**1,495,400**	**-**
Median age	31.1	-	35.9	-
Population over 65 years old	321	9.6	194,729	13.0
Population below poverty level	466	14.0	246,203	16.7
Hispanic or Latino Origin	770	23.0	340,565	22.8
Labor Force (16 years old or older)	**1,772**	**-**	**730,604**	**-**
Unemployed	177	10.0	64,373	8.8
Total Housing Units	**1,214**	**-**	**564,349**	**-**
Households	**408**	**-**	**532,050**	**-**
Average Household Size	2.82	-	2.76	-
Limited English-speaking Households	117	10.0	36,035	6.8

Source: U.S. Census Bureau 2017

Table 22-2: Demographics of Census Tract 90.05 and Sacramento County

	Census Tract 90.05 (Including Project Area)		Sacramento County	
	Number	**Percent of Total**	**Number**	**Percent of Total**
Total Population	**3,337**	**-**	**1,495,400**	**-**
White alone	2,000	59.9	877,495	58.7
Black or African American alone	295	8.8	147,425	9.9
American Indian or Alaska Native alone	59	1.8	10,384	0.7
Asian alone	265	7.9	229,441	15.3
Native Hawaiian and other Pacific Islander alone	46	1.4	16,019	1.1
Some Other Race alone	264	7.9	109,241	7.3
Two or more races	408	12.2	105,395	7.0

Source: U.S. Census Bureau 2017

Affordable Housing

Although there are existing rural residential homes in the Plan Area, it is not a substantial source of affordable housing. Furthermore, there would not be a net loss in affordable housing, as the seven high density sites in the Plan Area meet the criteria for providing affordable housing and would accommodate 2,137 affordable units. This accounts for 34.8 percent of the units in the Plan Area and satisfies the Project's share of the County's overall obligation. The Project is, therefore, not anticipated to affect the County's ability to adequately provide housing affordable to all household income levels. Refer to Chapter 15, "Land Use," for further discussion of the proportional obligation to regional housing needs within the unincorporated area of Sacramento County.

Growth Inducement

Growth can be induced through the elimination of obstacles to growth, through the stimulation of economic activity within the region, or through the establishment of policies or other precedents that directly or indirectly encourage additional growth. An EIR must discuss ways in which a project could directly or indirectly foster economic or population growth, or result in the construction of additional housing (Section 15126.2[d] of the State CEQA Guidelines). Although growth inducement itself is not considered an environmental effect, it could potentially lead to adverse environmental effects. Examples of projects likely to have significant growth-inducing impacts include extensions or expansions of infrastructure systems beyond what is needed to serve project-specific demand, and development of new residential subdivisions or industrial parks in areas that are only sparsely developed or are underdeveloped.

The Project would result in growth in the unincorporated area of the county by planning residential and commercial land uses in an area that is currently planned and used for primarily agriculture and is outside of the Urban Policy Area (UPA). This may indirectly reduce constraints to growth in the area. The Project would extend the UPA, which currently follows the northern border of the Plan Area, to include the Plan Area (see Plate PD-8 in Chapter 2, "Project Description"). As a result, the properties south of Jackson Road (also referred to as Jackson Highway), which are also currently zoned and used for agriculture, would be adjacent to the UPA. This area is within the USB and could be subject to increased development pressure following Project implementation because it would be adjacent to the UPA. However, it is worth noting that a large portion of the area south of Jackson Road directly adjacent to the Plan Area is part of the South Sacramento Habitat Conservation Plan preserve area, so development pressure to the south may be reduced.

The County has adopted policies that support the eventual development of the area between the UPA and the USB. Sacramento County 2030 General Plan Policies LU-119 and LU-120 sets the standards for UPA expansion, and the Office of Planning and Environmental Review has determined that the Project meets these standards. Implementing a policy in the manner it was intended to be applied is not precedent-setting. Further, there are pending draft land use plans that border the Plan Area to the east and the west (see Plate PD-2 in Chapter 2, "Project Description") that further

support the County's intent to allow growth and development in the area. Because the area is anticipated for future development, infrastructure (including roads) has been sized to accommodate buildout and the Project includes the extension of utilities beyond what is currently planned in the near-term by the providers. This concurrent planning process has been implemented through the County to encourage well-planned growth and is consistent with the growth identified in the Sacramento Region Blueprint and the 2030 General Plan. The development of these adjacent areas is separate from, and in no way reliant on, the Project.

The decision to allow any subsequent projects that result from induced growth would be the subject of separate discretionary processes by the respective lead agency(ies). Because the decision to allow growth is subject to separate discretionary decision making, and such decision making is itself subject to CEQA, this analysis of growth-inducing effects is not intended to determine site-specific environmental impacts and specific mitigation for any potentially induced growth. Rather, the discussion is intended to disclose the potential for environmental effects to occur more generally, such that decision makers are aware that additional environmental effects are a possibility if growth-inducing projects are approved. The decision of whether impacts do occur, their extent, and the ability to mitigate them is appropriately left to consideration by the agency responsible for approving such projects at the time complete applications for development are submitted.

Conversion of Open Space

Open space land is defined in Section 65560(h) of the California Government Code as:

- lands designated for the preservation of natural resources;
- land used for the managed production of resources, including forest lands, rangeland, agricultural lands;
- space for outdoor recreation, including areas of outstanding scenic, historic, and cultural value and areas particularly suited for park and recreation purposes;
- space for public health and safety, including areas that require special management or regulation because of hazardous or special conditions such as earthquake fault zones, unstable soil areas, flood plains, watersheds, areas presenting high fire risks, areas required for the protection of water quality and water reservoirs, and areas required for the protection and enhancement of air quality;
- space in support of the mission of military installations; and
- area to protect Native American historical, cultural, and sacred sites.

Section 56059 of the Cortese-Knox-Hertzberg Local Government Reorganization Act utilizes the open space definition under Government Code Section 65560. A portion of the Plan Area is considered open space because it is currently designated as Agriculture on the Sacramento General Plan Land Use Diagram, whereas the remainder of the Plan Area is designated for industrial uses. With the exception of the

area set aside as wetland preserve, implementation of the Project would result in the conversion of a portion of the Plan Area's open space areas to urban uses.

Loss of open space is inherent in greenfield development. Implementation of Mitigation Measure AG-1 would obligate the Project Applicant to offset the loss of Important Farmland through 1:1 preservation of farmland within a permanent conservation easement. While conservation of agricultural land of the same quality elsewhere in the region could partially offset the direct conversion of Important Farmland and prime agricultural land that could occur within the Plan Area, this approach would not create new open space land to replace lands that could be lost. However, by preserving the highest value, or most sensitive, open space (i.e., much of the vernal pool habitat), and with implementation mitigation required to address the loss of Farmland, the loss of open space would be partially addressed consistent with adopted policies requiring protection or mitigation for loss of resources.

Environmental Justice

When considering a proposal, LAFCo must evaluate the extent to which the Project would promote environmental justice. The Cortese-Knox-Hertzberg Local Government Reorganization Act Section 56668(o) defines environmental justice as the fair treatment of people of all races, cultures, and incomes with respect to the location of public facilities and the provision of public services. As described above, the race, culture, and income of the occupants of the Plan Area and the immediate vicinity is comparable to the average demographics of the remainder of the county.

As described in Chapter 17, "Public Services," the Project has been designed to distribute future public facilities and services in an equitable fashion amongst the proposed land uses and a Public Facilities Financing Plan has been developed. The Project includes 368 acres of parks and open space areas, as well as 101 acres in public and quasi-public zones. The Project includes several internal neighborhood and community parks strategically located so that all residents are within proximity of park amenities. An initial sewer study and an initial water system study have been prepared, both of which indicate adequate capacity to serve the Project through existing and planned infrastructure. In addition, the Project is not anticipated to affect the provision of existing public services.

The effects of providing the public services and utilities to the Plan Area are evaluated throughout this EIR as part of the overall proposal. The EIR concludes that there are a number of significant and unavoidable impacts related to: aesthetics, agricultural resources, air quality, biological resources, hydrology and water quality, noise, and traffic and circulation. See Table ES-1 in "Executive Summary," for a summary of anticipated impacts. Existing land uses, including residences, would be subject to these effects. However, the proposal would not be implemented in a manner that discriminates against any population with respect to the location and provision of public services and utilities. The Project would be consistent with State policies designed to ensure that the location of public facilities and the provision of public services is carried out in a manner that ensures the fair treatment of people of all races, cultures, and

income levels, including minority populations and low-income populations. Further, there are no areas in Sacramento that can be described as areas of minority concentration (i.e., areas with minority concentration above 51 percent of total population) (SHRA 2016). As such, the project would not have disproportionate impacts to minority or disadvantaged populations.

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24 ACKNOWLEDGEMENTS

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GLOSSARY OF ACRONYMS / ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
AB	Assembly Bill
ACE	Affordable Clean Energy
ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
ADT	Average Daily Trips
afy	acre-feet per year
ALUC	Airport Land Use Commission
ALUCP	airport land use compatibility plans
APE	Area of Potential Effect
APPA	Airport Planning Policy Area
AQMP	Air Quality Mitigation Plan
ARA	Aggregate Resource Areas
ATCM	Asbestos Airborne Toxic Control Measure
BMO	Basin Management Objective
BMP	best management practices
BSL	Beach Stone Lakes
Btu	British thermal unit
C&D	Construction and Demolition
CAA	Clean Air Act
CAAQS	California ambient air quality standards
CAFE	Corporate Average Fuel Economy
CAL FIRE	California Department of Forestry and Fire Protection
Cal/EPA	California Environmental Protection Agency
Cal/OSHA	California Occupational Safety and Health Administration
CalEEMod	California Emissions Estimator Model

CalEPA	California EPA
Caltrans	California Department of Transportation
CAMx	Compressive Air Quality Model
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
CDFW	California Department of Fish and Wildlife
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CESA	California Endangered Species Act
CFC	California Fire Code
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
CHP	California Highway Patrol
CLOMR	Conditional Letter of Map Revision
CLUP	comprehensive land use plans
CNDDB	California Natural Diversity Database
CNEL	community noise equivalent level
CNG	compressed natural gas
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide-equivalent
CPUC	California Public Utilities Commission
CRHR	California Register of Historical Resources
CRPD	Cordova Recreation and Park District
CSCGMP	Central Sacramento County Groundwater Management Plan
CSMP	US 50 Corridor System Management Plan

CSWMP	Comprehensive Stormwater Management Program
CVP	Central Valley Project
CWA	Clean Water Act
CWPP	Community Wildfire Protection Plan
dB	decibel
diesel PM	diesel particulate matter
DS/FDR	Dam Safety and Flood Damage Reduction Project
DTS	California Department of Toxic Substance Control
du/ac	dwelling units per acre
DUE	dwelling unit equivalent
DWR	California Department of Water Resources
EAP	Energy Action Plan
EGU	electric generating units
EGUSD	Elk Grove Unified School District
EIR	environmental impact report
EMD	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
ESA	federal Endangered Species Act
EV	electric vehicle
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
FR	Federal Register
GHG	greenhouse gas
GHGRP	greenhouse gas reduction plan
gpm	gallons per minute

HARP	Hotspots Analysis and Reporting Program
HCM	*Highway Capacity Manual*
HCP	habitat conservation plan
HMP	*Hydromodification Management Plan*
HOV	high-occupancy vehicle
HRI	heat rate improvement
Hz	hertz
I-80	Interstate 80
ICM	integrated corridor management
IEPR	Integrated Energy Policy Report
IMP	infrastructure master plan
in/sec	inches per second
ITS	Caltrans intelligent transportation systems
Jackson Township	Jackson Township Specific Plan
Joint TIS	Joint Transportation Impact Study
JPA	Capital SouthEast Connector Joint Powers Authority
kV	kilovolt
LAFCo	local agency formation commission
lb/day	pounds per day
LCFS	Low Carbon Fuel Standard
LID	Low Impact Development
LOS	level of service
LZ	lighting zone
Mather South Project	Mather South Community Master Plan
Metro Fire	Sacramento Metropolitan Fire District
mgd	million gallons per day
MMT	million metric tons

$MMTCO_2e$	million metric tons of CO_2 equivalents
mph	miles per hour
MPO	metropolitan planning organization
MRZ	Mineral Resource Zones
MS4	municipal separate storm sewer system
MSAT	Mobile Source Air Toxics
$MTCO_2e$/Ksf	$MTCO_2e$ per thousand square feet of floor space
MTIP	Metropolitan Transportation Improvement Program
MTP/SCS	*Metropolitan Transportation Plan/Sustainable Communities Strategy 2035*
MWELO	California Model Water Efficient Landscape Ordinance
N_2O	nitrous oxide
NAAQS	national ambient air quality standards
NAHC	Native American Heritage Commission
NewBridge	NewBridge Specific Plan
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NMFS	National Oceanic and Atmospheric Administration, National Marine Fisheries Service
NO	nitric oxide
NO_2	nitrogen dioxide
NOC	Notice of Completion
NOI	Notice of Intent
NOP	Notice of Preparation
NO_X	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NSA	North Service Area
OEHHA	Office of Environmental Health Hazard Assessment
OES	California Office of Emergency Services
OPR	Governor's Office of Planning and Research

OSHA	federal Occupational Safety and Health Administration
ozone	photochemical smog
PCB	polychlorinated biphenyl
PEA	preliminary endangerment assessment
PG&E	Pacific Gas & Electric Company
PM_{10} and $PM_{2.5}$)	particulate matter
$PM_{2.5}$	Fine particulate matter
Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 1969
PPV	peak particle velocity
PRC	Public Resources Code
RCP	Representative Concentration Pathway
RCRA	Resource Conservation and Recovery Act
Recovery Plan	*Recovery Plan for Vernal Pool Ecosystems of California and Southern Oregon*
Regional San or SRCSD	Sacramento Regional County Sanitation District
RMS	root-mean-square
ROG	reactive organic gases
RPS	renewable portfolio standard
RWQCB	regional water quality control board
SacDOT	Sacramento County Department of Transportation
SacOES	Sacramento County Office of Emergency Services
SACOG	Sacramento area Council of Government
SacRT	Sacramento Regional Transit District
SAF Plan	State Alternative Fuels Plan
SARA	Superfund Amendments and Reauthorization Act
SASD	Sacramento Area Sewer District
SB	Senate Bill
SCBMP	Sacramento County Bicycle Master Plan
SCGA	Sacramento Central Groundwater Authority
SCPMP	Sacramento County Pedestrian Master Plan

SCS	sustainable communities strategies
SCTDF	Sacramento County Transportation Development Fee
SCTMF	Sacramento Countywide Transportation Mitigation Fee
SCWA	Sacramento County Water Agency
SFNA	Sacramento Federal Nonattainment Area for ozone
SGMA	Sustainable Groundwater Management Act of 2014
SMAQMD	Sacramento Metropolitan Air Quality Management District
SMUD	Sacramento Metropolitan Utility District
SO_2	sulfur dioxide
SOI	sphere of influence
SPA	Special Planning Area
SPL	sound pressure level
SPLS	Sacramento Public Library System
SR	State Route
SR 16	Jackson Road
SRFECC	Sacramento Regional Fire/EMS Communications Center
SRWTP	Sacramento Regional Wastewater Treatment Plant
SSCA	South Sacramento Conservation Agency
SSD	Sacramento County Sheriff's Department
SSHCP	South Sacramento Habitat Conservation Plan
SSQP	Sacramento Stormwater Quality Partnership
SVAB	Sacramento Valley Air Basin
SVE	soil vapor extraction
SWPPP	stormwater pollution prevention plan
SWRCB	State Water Resource Control Board
TAC	toxic air contaminant
TCR	Caltrans' US 50 Transportation Concept Report
TDS	total dissolved solids
TMA	Transportation Management Association
tons/year	tons per year

Tool	Dynamic Implementation Tool
Transportation Report	*Jackson Township Specific Plan Amendment Transportation Impact Report*
UBC	Uniform Building Code
ULOP	Urban level of flood protection
UPA	Urban Policy Area
US 50	U.S. Highway 50
USACE	U.S. Army Corps of Engineers
USB	Urban Services Boundary
USDA	U.S. Department of Agriculture
USDOT	U.S. Department of Transportation
USFWS	U.S. Fish and Wildlife Service
UWMP	urban water management plan
V/C	volume-to-capacity
VdB	vibration decibels
VMT	vehicle miles traveled
VOC	volatile organic compounds
VSWTP	Vineyard Surface Water Treatment Plant
WDR	waste discharge requirement
West Jackson	West Jackson Highway Master Plan
WRCC	Western Regional Climate Center
WSA	water supply assessment
WSMP	water supply master plan