Supplemental Environmental Impact Report

Centennial Project

Lead Agency

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1.0 INTRODUCTION

This Supplemental Environmental Impact Report ("SEIR") analyzes the potential environmental impacts associated with the implementation of the Centennial Specific Plan Project. Tejon Ranch ("Applicant") now proposes to implement minor modifications to the Centennial Specific Plan Project, necessitating the preparation of additional environmental analysis and documentation in conformance with the California Environmental Quality Act ("CEQA") Guidelines. The background and the legal basis for preparing an SEIR are described below.

1.1 BACKGROUND

On April 30, 2019, Los Angeles County ("County") certified the Centennial Project Environmental Impact Report, State Clearinghouse No. 2004031072 ("2019 EIR") and issued initial entitlement approvals for the (a) the Centennial Specific Plan to govern the Project's development, (b) a General Plan Amendment to amend the highway maps of the Los Angeles General Plan and the County's Antelope Valley Area Plan, (c) a Zoning Ordinance Amendment to change the property's zoning from Open Space Light-Agricultural (two acre minimum required lot area), Residential Planned Development, Commercial Planned Development and Manufacturing Planned Development to Specific Plan (SP), (d) a Vesting Tentative Parcel Map to create 20 large-lot parcels on 8,408 acres of the Property for lease, conveyance and financing purposes only, (e) a Conditional Use Permit (CUP) to authorize the Specific Plan development process, and (f) a statutory development agreement to vest the approved land use entitlements and provide specified community benefits including but not limited to affordable housing (collectively, the "Approved Project").

Although the 2019 EIR was certified by the Los Angeles County Board of Supervisors, it was subsequently challenged in two separate lawsuits, one of which was brought by Climate Resolve and the other was brought by the Center for Biological Diversity and California Native Plant Society (referred to collectively herein as "CBD/CNPS"), as further described below.

On April 5, 2021, the Los Angeles County Superior Court issued two orders (collectively, the "Court Order") rejecting all CBD/CNPS and most Climate Resolve arguments that the Centennial EIR was deficient under CEQA, upholding the vast majority of the 2019 EIR's assessment of Project impacts, and granting in part Climate Resolve's petition. Following issuance of the Court Order, but prior to final judgment in the Climate Resolve action, the Applicant and Climate Resolve entered into a legally enforceable settlement agreement to finally resolve the Climate Resolve litigation ("Settlement Agreement"), included as Appendix A. The Settlement Agreement became effective and fully enforceable on November 30, 2021. The Settlement Agreement addresses the key issues identified in the Court's ruling in the Climate Resolve litigation: projected impacts related to climate change and wildfire, as discussed in more detail in Section 2.0, *Project Description*, of this SEIR.

Based on the Settlement Agreement, the Project Applicant requests minor amendments to Centennial Specific Plan adopted as part of the 2019 Approved Centennial Project ("Proposed Modifications"), as further described in this SEIR. The SEIR will supplement the Centennial 2019 EIR and will focus the supplemental analysis on climate change (including greenhouse gas emissions) and wildfire.

Despite losing on all of their CEQA challenges, CBD/CNPS, petitioned the trial court to give them party status to the Climate Resolve lawsuit, which was a separate suit. The trial court granted status to CBD/CNPS who went on to be declared successful on the same CEQA issues that Climate Resolve won, despite those challenges now being resolved through a legal settlement. Both the Project Applicant and CBD/CNPS have appealed aspects of the lawsuit to the Appellate Court.

1.2 APPROVED PROJECT OVERVIEW

The Approved Project involves the development of a new master-planned community with residential, commercial, business park, recreational/entertainment, and institutional/civic uses. The Approved Project includes open space, parks, schools, utilities, and infrastructure to support the proposed land uses and future residents based on zoning and development standards outlined in the *Centennial Specific Plan* as approved by the County in 2019.

The Approved Project site encompasses approximately 12,323 acres and authorizes development of up to 19,333 dwelling units (du) on approximately 4,987 gross acres of land designated for residential uses. Other land uses include approximately 7,363,818 square feet (sf) of Business Park uses (office, research and development, and warehousing or light manufacturing uses) on approximately 597 gross acres; and approximately 1,034,550 sf of Commercial uses on approximately 102 acres. Proposed Institutional/Civic land uses (such as schools for higher education, medical facilities, library, and other civic uses) encompass approximately 1,568,160 sf on approximately 110 acres. The Approved Project includes approximately 130,680 sf of Recreation/Entertainment uses (clubhouse, farmers market, childcare facilities, health clubs) on approximately 75 acres. Proposed sites for major Utility facilities (wastewater reclamation facilities, water treatment facility, water bank and materials recovery facility) that would serve the entire community encompass approximately 191 acres, and Kindergarten through 12th grade schools would be located on approximately 145 acres. Approximately 5,624 acres are proposed for Open Space for natural resource protection and greenways, and parks for active and passive recreational use. The Approved Project also includes an integrated network of roadways, walking and biking trails to reduce automobile use and facilitate safe and efficient travel. Additional Approved Project details are outlined in Section 2.0, Project Description.

1.3 CENTENNIAL 2019 EIR

As stated above, the 2019 EIR was certified by the County on April 30, 2019, and evaluated the potential environmental impacts associated with the construction and operation of the Approved Project. The 2019 EIR scope included the following issue areas: Geotechnical; Hydrology and Flood; Hazards and Fire Safety; Water Quality; Land Resources (Agricultural, Forestry, and Mineral Resources); Cultural and Tribal Resources; Biological Resources; Land Use, Entitlements, and Planning; Population, Housing, and Employment; Traffic, Access, and Circulation; Air Resources; Noise; Visual Resources; Parks and Recreation; Education; Fire and Law Enforcement Services; Other Public Services (Library, Solid Waste, and Other Public Facilities); Water Resources; Wastewater Collection; Dry Utilities (Electrical, Fossil Fuels [Natural Gas and Petroleum], Telephone, and Cable Service); Climate Change; Growth-Inducing Impacts; Cumulative Impacts; and Alternatives to the Proposed Project. The significant and unavoidable impacts identified in the 2019 EIR included the following:

- Agricultural and Forest Resources:
    - Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland) to non-agricultural use.
- Population, Housing and Employment:
    - Induce substantial population growth in an area, either directly or indirectly.
- Air Resources:
    - Violate any air quality standard or contribute substantially to an existing or projected air quality violation.
    - Expose sensitive receptors to substantial pollutant concentrations.
    - Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard.
- Noise:
    - Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project, including noise from parking areas.
- Visual Resources:
    - Have a substantial adverse effect on a scenic vista.
    - Substantially degrade the existing visual character or quality of the site and its surroundings because of height, bulk, pattern, scale, character, or other features.
    - Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

- Other Public Services- Solid Waste Management:
    - Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs.
    - Not comply with federal, state, and local statutes and regulations related to solid waste.
- Climate Change:
    - Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
    - Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases.
- Cumulative Impacts:
    - Land Resources (loss of Prime Farmland)
    - Biological Resources (regional wildlife movement, loss of native grasslands)
    - Population, Housing, and Employment (substantial relative to existing conditions)
    - Traffic, Access, and Circulation (without pending improvements by Caltrans)
    - Air Resources (construction and operational emissions in the AVAQMD and the SCAQMD)
    - Noise (traffic noise along segments of SR-138)
    - Visual Resources (change to long range views from public land and nighttime light and glare)
    - Solid Waste (contribution to municipal solid waste disposal)
    - Water Resources (water supplies)
    - Climate Change (greenhouse gas emissions)

1.4 THE CALIFORNIA ENVIRONMENTAL QUALITY ACT

The California Environmental Quality Act (CEQA) (California Public Resources Code, Sections 21000–21189.70.10) requires that all public agencies in the State of California that regulate project activities that have the potential to affect the quality of the environment review the potential effects of the Project and prevent or minimize such effects to the extent feasible prior to approval of the Project. Such activity is reviewed and monitored through the CEQA process, as defined in CEQA and the State CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000–15387). The CEQA process distinguishes varied levels of documentation and public review based on a project's anticipated level of effect to the environment.

When it is determined through preliminary review that a project may likely have one or more significant effects on the environment, then an Environmental Impact Report (EIR) must be

prepared. The "scope" of the EIR may be determined through preparation of an Initial Study and a public scoping process. The EIR should consider both the potential project-specific (direct and indirect) and cumulative environmental impacts that could result from the implementation of the project.

When, as here, an EIR has been certified previously for a project, CEQA includes a strong presumption against requiring any further environmental review. Pursuant to Public Resources Section 21166 and CEQA Guidelines Section 15162:

(a) When an EIR has been certified or a negative declaration adopted for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:

(1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;

(2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or

(3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following:

(A) The project will have one or more significant effects not discussed in the EIR or negative declaration;

(B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;

(C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or

(D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

Pursuant to the State CEQA Guidelines, a Lead Agency must prepare a supplement to an EIR (rather than a subsequent EIR) for a previously certified EIR when any of the following criteria set forth in CEQA Guidelines Section 15163 would occur:

(1) Any of the conditions described in Section 15162 would require the preparation of a subsequent EIR, and

(2) Only minor additions or changes would be necessary to make the previous EIR adequately apply to the project in the changed situation.

As discussed in more detail in in Section 2.0, *Project Description*, the Proposed Modifications are comprised of discretionary, minor amendments to the Centennial Specific that will add, as conditionally permitted uses, utility-scale battery storage within the Specific Plan's Industrial land use designation and, as permitted uses, local microgrid electrical distribution systems to serve the Specific Plan area within renewable energy generated on site in support of the Settlement Agreement's "Net Zero" greenhouse gas ("GHG") program, which program is also discussed in more detail in Section 2.0, *Project Description*. The Proposed Modifications' Specific Plan amendments, included as Appendix E, will also open a majority of the approved Cement Road Realignment for public use in order to improve overall fire resiliency, whereas the Approved Project identified the approved Cement Road Realignment as a private roadway. With implementation of the Proposed Modifications, the Project would only result in minor modifications related to utility-scale battery storage and operation of the approved Cement Road Realignment. However, the County has conservatively determined that a Supplemental EIR is the appropriate CEQA document. Additionally, as set forth in CEQA Guidelines Section 15163, a supplement to a previously certified EIR shall be given the same kind of notice and public review as is given to a draft EIR under Section 15087, and may be circulated by itself without recirculating the previous draft or final EIR.

1.5 PURPOSE OF THIS SUPPLEMENTAL EIR

The primary purpose of this Supplemental EIR is to supplement the 2019 EIR and address the Proposed Modifications.

Information and analysis from the 2019 EIR that is relevant to the analysis of the Project modifications is briefly summarized or described rather than repeated, and the 2019 EIR in its entirety is included in at the County's website: https://planning.lacounty.gov/long-range-planning/centennial-specific-plan/.

This Draft Supplemental EIR is prepared in accordance with CEQA and the State CEQA Guidelines. The County is the Lead Agency under CEQA and is responsible for preparing the Draft Supplemental EIR. The determination that the County is the "lead agency" is made in accordance with Sections 15051 and 15367 of the State CEQA Guidelines, which define the Lead Agency as the public agency that has the principal responsibility for carrying out or approving a project.

The County as Lead Agency has determined that a Supplemental EIR is appropriate to satisfy requirements contained in Public Resources Code Section 21166 and CEQA Guidelines

Section 15163 by fully disclosing new impacts that would occur because of the Proposed Modifications and changes to existing conditions since certification of the prior EIR.

The County has prepared this Draft Supplemental EIR for the following purposes:

- to satisfy the requirements of CEQA and the State CEQA Guidelines;
- to inform the general public, the local community, responsible and interested public agencies, and decisionmakers, including the Los Angeles County Board of Supervisors of the Proposed Modifications and to communicate the potential environmental impacts and measures to mitigate those impacts in accordance with CEQA supplemental review standards;
- to enable the Board of Supervisors to consider the environmental consequences of the Centennial Specific Plan Project when deciding whether to approve the Proposed Modifications; and
- to serve as a source document for responsible agencies to issue permits and approvals, as required, for implementation of the Approved Project with Proposed Modifications.

As described in CEQA and the State CEQA Guidelines, public agencies are charged with the duty to review the potential environmental impacts of a project and to avoid or substantially lessen those impacts where feasible. In satisfying this duty, a public agency has an obligation to balance a project's significant impacts on the environment with its benefits, including economic, social, technological, legal, and other benefits.

The County as Lead Agency is responsible for processing and approving the Proposed Modifications and associated discretionary actions and must consider the information in this Draft Supplemental EIR along with other information that may be presented during the CEQA process in its decisionmaking process. Other public agencies (i.e., responsible and trustee agencies) may also use this Draft Supplemental EIR in their decisionmaking or permitting processes.

Upon certification of the Final Supplemental EIR, the Board of Supervisors will consider whether to approve the Proposed Modifications.

1.6 SCOPE OF THIS SUPPLEMENTAL EIR

This Supplemental EIR addresses the key environmental issues identified as part of the Settlement Agreement, discussed above, including projected impacts related to Climate Change (Section 3.0) and Wildfire (Section 4.0). All other environmental topic areas were addressed in full, as outlined in the County-certified Centennial 2019 EIR, as summarized below, and are not further analyzed as part of this Draft SEIR:

Geotechnical

Potential impacts related to geologic materials and soils and surface rupture and groundshaking were discussed in Section 5.1 of the 2019 EIR. The 2019 EIR determined that

the Approved Project would have less than significant impacts related to earthquake faults, groundshaking, seismic-related ground failure, landslides, soil erosion, topsoil loss, lateral spreading, subsidence, liquefaction, collapse, expansive soils, and conflicts with applicable plans and design standards. The Proposed Modifications would not create any new ground disturbances that were not otherwise anticipated by the 2019 EIR. Geotechnical conditions of the Centennial Specific Plan Project site have not changed since the certification of the 2019 EIR and the Proposed Modifications would not cause a new significant geotechnical impact or a substantial increase in the severity of geotechnical impacts previously identified in the 2019 EIR. There is no new information of substantial importance related to geotechnical impacts that was not known and could not have been known when the 2019 EIR was certified.

Hydrology and Flood

Potential impacts related to hydrology and flood were discussed in Section 5.2 of the 2019 EIR. The 2019 EIR determined that the Approved Project would have less than significant impacts related to the creation of drainage system problems, but would require mitigation to reduce to less than significant levels impacts related to drainage pattern alterations, runoff water, flood hazard mapping, flood and flood flows, mudflows, mosquitoes and other vectors, and conflicts with applicable low impact development regulations. The Proposed Modifications would not create any new ground disturbances that were not otherwise anticipated by the 2019 EIR. Hydrology and flood conditions of the Centennial Specific Plan Project site have not changed since the certification of the 2019 EIR and the Proposed Modifications would not cause a new significant impact related to hydrology or flood, or a substantial increase in the severity of hydrology or flood impacts previously identified in the 2019 EIR. There is no new information of substantial importance related to hydrology or flood impacts that was not known and could not have been known when the 2019 EIR was certified.

Hazards, Hazardous Materials, Fire Safety

Potential impacts related to hazards and hazardous materials were discussed in Section 5.3 of the 2019 EIR. The 2019 EIR determined that the Approved Project would have less than significant impacts related to airports and airstrips, but would require mitigation to reduce to less than significant levels impacts related to hazardous material storage and transport, the accidental release of hazardous materials, hazardous emissions, and hazardous material site listings. The Proposed Modifications would not cause a new significant impact related to airports, airstrips, hazardous material storage and transport, the accidental release of hazardous materials, hazardous emissions, or hazardous material site, or substantial increase in the severity of such impacts previously identified in the 2019 EIR, and there is no new information of substantial importance related to such impacts that was not known and could not have been known when the 2019 EIR was certified. Impacts of the Approved Project related to fire safety were also discussed in Section 5.3 of the 2019 EIR and determined that such impacts would be less than significant with mitigation. The fire safety impacts of the Approved Project with Proposed Modifications are discussed in Section 3.2, Wildfire, of this SEIR.

Water Quality

Potential impacts related to water quality were discussed in Section 5.4 of the 2019 EIR. The 2019 EIR determined that the Approved Project would have no water quality impact related to designated Areas of Special Biological Significance, but would require mitigation to reduce to less than significant levels impacts related to construction or post-construction runoff, onsite wastewater treatment systems, water quality degradation, and potential conflicts with water quality standards or waste discharge requirements. The Proposed Modifications would not cause a new significant water quality impact, or a substantial increase in the severity of water quality impacts previously identified in the 2019 EIR. There is no new information of substantial importance related to water quality impacts that was not known and could not have been known when the 2019 EIR was certified.

Land Resources (Agricultural, Forest and Mineral Resources)

Potential impacts related to land resources, including agricultural, forest and mineral resources, were discussed in Section 5.5 of the 2019 EIR. The 2019 EIR determined that the Approved Project would have no impacts related conflicts with forestland or timberland zoning, and forestland conversion, and would have a less than significant impact related to conflicts with existing zoning for agricultural use. However, the 2019 EIR determined that the Approved Project would have a significant and unavoidable impact related to the conversion of prime farmland, unique farmland or farmland of statewide importance. The Proposed Modifications would not create any new ground disturbances that were not otherwise anticipated by the 2019 EIR. Conditions of the Centennial Specific Plan Project site related to land resources have not changed since the certification of the 2019 EIR and the Proposed Modifications would not cause a new significant land resources impact, or substantial increase in the severity of land resources impacts previously identified in the 2019 EIR. There is no new information of substantial importance related to land resources impacts that was not known and could not have been known when the 2019 EIR was certified.

Cultural and Tribal Resources

Potential impacts related to cultural and tribal resources were discussed in Section 5.6 of the 2019 EIR. The 2019 EIR determined that the Approved Project would require mitigation to reduce to less than significant levels impacts related to historical resources, archaeological resources, paleontological resources, disturbances of human remains, and tribal cultural resources. The Proposed Modifications would not create any new ground disturbances that were not otherwise anticipated by the 2019 EIR. Conditions of the Centennial Specific Plan Project site related to cultural and tribal resources have not changed since the certification of the 2019 EIR and the Proposed Modifications would not cause a new significant impact to cultural or tribal resources, or a substantial increase in the severity of impacts to tribal or cultural resources previously identified in the 2019 EIR. There is no new information of substantial importance related to impacts to tribal or cultural resources that was not known and could not have been known when the 2019 EIR was certified.

Biological Resources

Potential impacts related to biological resources were discussed in Section 5.7 of the 2019 EIR. The 2019 EIR determined that the Approved Project would have no impact with respect to potential conflicts with an adopted habitat conservation plan, but would require mitigation to reduce to less than significant levels impacts related to candidate, sensitive, or special status species, designated sensitive natural communities, protected wetlands, and wildlife movement corridors. The Proposed Modifications would not create any new ground disturbances that were not otherwise anticipated by the 2019 EIR. Conditions of the Centennial Specific Plan Project site related to biological resources have not changed since the certification of the 2019 EIR and the Proposed Modifications would not cause a new significant impact to biological resources, or a substantial increase in the severity of impacts to biological resources previously identified in the 2019 EIR.

There is no new information of substantial importance related to impacts to biological resources that was not known and could not have been known when the 2019 EIR was certified. Since the 2019 EIR was certified, Crotch's bumble bee (CBB) has been listed as a candidate species under the California Endangered Species Act, meaning it has been petitioned for listing as an endangered species. However, this change in circumstances regarding the regulatory status of CBB would not result in new significant impacts or a substantial increase in the severity of a significant impact that was not already considered at in the 2019 EIR. Nevertheless, the Applicant's consultant prepared a supplemental Habitat Assessment, dated September 16, 2024, which addresses habitat suitability for CBB on the Project Site (Psomas 2025, refer to Appendix C). The Habitat Assessment concluded that CBB has been previously documented on the Project site, and the site currently contains potentially suitable habitat. The Habitat Assessment further recommends the Applicant implement a Project Design Feature to further avoid impacts to CBB, as described in more detail in Section 2.0 of this SEIR. Notably, CBB was petitioned for listing in October 2018, prior to certification of the 2019 EIR, and the presence of CBB at the Project site was disclosed in the sensitive insect survey conducted for Approved Project and included as Appendix 5.7-B of the 2019 EIR. (As background, in June 2019, the California Fish and Game Commission determined that listing CBB as Endangered "may be warranted" and the species was advanced to Candidacy status. The Commission's determination was challenged in court and CBB's Candidacy status was stayed during the ensuing litigation. The California Court of Appeal ultimately upheld the Commission's determination and the California Supreme Court declined to review the Court of Appeal's decision. The CBB's Candidacy status was reinstated on September 30, 2022.

Land Use, Entitlements, and Planning

Potential impacts related to land use, entitlements, and planning were discussed in Section 5.8 of the 2019 EIR. The 2019 EIR determined that the Approved Project would have no impact with respect to the division of established communities and less than significant impacts with respect to project consistency with applicable planning documents, zoning ordinances, hillside management criteria, Significant Ecological Areas conformance criteria, and other applicable land use criteria. Conditions of the Centennial Specific Plan Project site

related to land use, entitlements, and planning have not changed since the certification of the 2019 EIR and the Proposed Modifications would not cause a new significant impact related to land use, entitlements, or planning, or a substantial increase in the severity of impacts to land use, entitlements, or planning previously identified in the 2019 EIR. There is no new information of substantial importance related to land use, entitlements, or planning impacts that was not known and could not have been known when the 2019 EIR was certified.

Population, Housing, and Employment

Potential impacts related to population, housing, and employment were discussed in Section 5.9 of the 2019 EIR. The 2019 EIR determined that the Approved Project would have less than significant impacts with respect to people and housing displacement, but would have significant and unavoidable impacts with respect to population growth and cumulative regional or local population projections. The Proposed Modifications would not cause a new significant impact related to population, housing, or employment, or a substantial increase in the severity of such impacts previously identified in the 2019 EIR. There is no new information of substantial importance related to population, housing, or employment impacts that was not known and could not have been known when the 2019 EIR was certified.

Traffic, Access, and Circulation

Potential impacts related to traffic, access, and circulation were discussed in Section 5.10 of the 2019 EIR. The 2019 EIR determined that the Approved Project would have no impact with respect to conflicts with adopted policies, plans, and programs related to transit, bicycles, or pedestrian facilities, and would have a less than significant impact with respect to changes to air traffic patterns. The 2019 EIR determined that the Approved Project would require mitigation to reduce to less than significant levels impacts related to hazards associated with a design feature or incompatible uses, impacts related to emergency access, and impacts related conflicts with an applicable congestion management plan or an applicable plan, ordinance, or policy establishing circulation system performance measures. The Proposed Modifications would not cause a new significant impact related to traffic, access, or circulation, or a substantial increase in the severity of such impacts previously identified in the 2019. There is no new information of substantial importance related to traffic, access, or circulation that was not known and could not have been known when the 2019 EIR was certified.

Air Resources

Potential impacts related to air quality were discussed in Section 5.11 of the 2019 EIR. The 2019 EIR determined that the Approved Project would have less than significant impacts with respect to odors and potential conflicts with applicable air quality plans, but significant and unavoidable impacts with respect to air quality standard violations, the exposure of sensitive receptors to substantial pollutant concentrations, and cumulative air quality impacts. The Proposed Modifications would not cause a new significant impact related to air resource, or a substantial increase in the severity of such impacts previously identified in

the 2019 EIR. There is no new information of substantial importance related to air resources that was not known and could not have been known when the 2019 EIR was certified.

Noise

Potential impacts related to noise were discussed in Section 5.12 of the 2019 EIR. The 2019 EIR determined that the Approved Project would have no impact with respect to public airport noise, and a less than significant impact with respect to private airstrip noise. The 2019 EIR also determined that the Approved Project would require mitigation to reduce to less than significant levels impacts related to noise exposure, groundborne vibration, and temporary increases in ambient noise levels, but that the Approved Project would have a significant and unavoidable impact related to permanent increases in ambient noise levels. The Proposed Modifications would not cause a new significant impact related to noise, or a substantial increase in the severity of noise impacts previously identified in the 2019 EIR. There is no new information of substantial importance related to noise that was not known and could not have been known when the 2019 EIR was certified.

Visual Resources

Potential impacts related to visual resources were discussed in Section 5.13 of the 2019 EIR. The 2019 EIR determined that the Approved Project would have less than significant impacts with respect to scenic resources and views from regional riding or hiking trails, but would have significant and unavoidable impacts with respect to scenic vistas, existing visual character, and new sources of substantial light and glare. The Proposed Modifications would not cause a new significant impact related to visual resources, or a substantial increase in the severity of such impacts previously identified in the 2019 EIR. There is no new information of substantial importance related to visual resources that was not known and could not have been known when the 2019 EIR was certified.

Parks and Recreation

Potential impacts related to parks and recreation were discussed in Section 5.14 of the 2019 EIR. The 2019 EIR determined that the Approved Project would have less than significant impacts with respect to regional open space connectivity, but would require mitigation to reduce to a less than significant level impacts related to park capacity and the physical construction of parks and recreational facilities. The Proposed Modifications would not cause a new significant impact related to parks and recreation, or a substantial increase in the severity of parks or recreation impacts previously identified in the 2019 EIR. There is no new information of substantial importance related to parks or recreation that was not known and could not have been known when the 2019 EIR was certified.

Education

Potential impacts related to educational (school) services were discussed in Section 5.15 of the 2019 EIR. The 2019 EIR determined that the Approved Project would, with mitigation, have less than significant impacts related to provision of, or need for, new or physically

altered school facilities. The Proposed Modifications would not cause a new significant impact related to educational facilities, or a substantial increase in such impacts previously identified in the 2019 EIR. There is no new information of substantial importance related to school facilities or capacity that was not known and could not have been known when the 2019 EIR was certified.

Fire and Law Enforcement

Potential impacts related to provision of new or physically altered fire and law enforcement facilities and response times were discussed in Section 5.16 of the 2019 EIR. The 2019 EIR determined that the Approved Project required mitigation to reduce such impacts to less than significant levels. The Proposed Modifications would not cause a new significant impact related to the provision of fire and law enforcement facilities, or a substantial increase in such impacts previously identified in the 2019 EIR, and there is no new information of substantial importance related to fire and law enforcement facilities and response times that was not known and could not have been known when the 2019 EIR was certified.

Other Public Services

Potential impacts related to the provision of other public services, including library and solid waste disposal, were discussed in Section 5.17 of the 2019 EIR. The 2019 EIR determined that the Approved Project would generally have a less than significant impact associated with the provision of new or physically altered government facilities, but that mitigation was required to reduce to less than significant levels associated with the provision of library services. Moreover, the 2019 EIR determined that the Approved Project would have significant and unavoidable impacts related to landfill capacity and conflicts with applicable regulations related to solid waste. The Proposed Modifications would not cause a new significant impact related to the provision of other public services, including library and solid waste disposal services, or a substantial increase in such impacts previously identified in the 2019 EIR, and there is no new information of substantial importance related to such public services that was not known and could not have been known when the 2019 EIR was certified.

Water Resources

Potential impacts related to water resources were discussed in Section 5.18 of the 2019 EIR. The 2019 EIR determined that the Approved Project would have a less than significant impacts with respect to groundwater supplies and groundwater recharge, but would require mitigation to reduce to less than significant levels impacts related to water supplies to serve the Project. The Proposed Modifications would not cause a new significant impact related to water resources, or a substantial increase in water resource impacts previously identified in the 2019 EIR, and there is no new information of substantial importance related to water resources that was not known and could not have been known when the 2019 EIR was certified.

Wastewater

Potential impacts related to wastewater were discussed in Section 5.19 of the 2019 EIR. The 2019 EIR determined that the Approved Project would have less than significant impacts related to water or wastewater capacity problems, but required mitigation to reduce to a less than significant level impacts regarding conflicts with applicable wastewater treatment requirements. The Proposed Modifications would not cause a new significant impact related to wastewater, or a substantial increase in wastewater impacts previously identified in the 2019 EIR, and there is no new information of substantial importance related to wastewater that was not known and could not have been known when the 2019 EIR was certified.

Dry Utilities

Potential impacts related to dry utilities were discussed in Section 5.20 of the 2019 EIR. The 2019 EIR determined that the Approved Project required mitigation to reduce to a less than significant level impacts related to electric systems, natural gas systems, telephone systems, and cable systems. The Proposed Modifications would not cause a new significant impact related to dry utilities, or a substantial increase in such impacts previously identified in the 2019 EIR, and there is no new information of substantial importance related to dry utilities that was not known and could not have been known when the 2019 EIR was certified.

Climate Change

Potential impacts related to climate change were discussed in Section 5.21 of the 2019 EIR. The 2019 EIR determined that the Approved Project would have a significant and unavoidable impacts related to greenhouse gas emissions and potential conflicts with applicable greenhouse gas reduction plans and regulations. The climate change impacts of the Approved Project with Proposed Modification are discussed in Section 3.1, Climate Change, of this SEIR.

Growth Inducing Impacts

Potential growth inducing impacts were discussed in Section 6.0 of the 2019 EIR. The 2019 EIR determined that the existence of the Approved Project makes it reasonably foreseeable that additional proposals seeking Antelope Valley Area Plan (AVAP) amendments affecting land located outside of the AVAP's West Economic Opportunity Area, which could result in a significant impact on the environment, which is considered a significant adverse indirect growth-inducing impact. The Proposed Modifications would not cause a new significant growth-inducing impact, or a substantial increase in the growth-inducing impacts previously identified in the 2019 EIR, and there is no new information of substantial importance related to growth-inducing impacts that was not known and could not have been known when the 2019 EIR was certified.

Cumulative Impacts

Potential cumulative impacts were discussed in Section 7.0 of the 2019 EIR. The 2019 EIR determined that the Approved Project would have significant and unavoidable cumulative impacts related to biological resources (with respect to native perennial grasslands and wildlife movement), land resources (with respect to farmland conversion), traffic (in the absence of pending Caltrans improvements), air quality (with respect to O_3 and PM_{10}), noise (with respect to traffic noise along SR-138), visual resources (with respect to long range views from public land and light pollution), solid waste (with respect to landfill capacity), water resources (with respect to regional water demands under post-2035 conditions), population, housing and employment, and climate change. With the exception of the aforementioned significant and unavoidable cumulative impacts, the 2019 EIR determined that cumulative impacts would be less than significant. The Proposed Modifications would not cause a new significant cumulative impact, or a substantial increase in the cumulative impacts previously identified in the 2019 EIR, and there is no new information of substantial importance related to cumulative impacts that was not known and could not have been known when the 2019 EIR was certified. The cumulative climate change impacts of the Approved Project with Proposed Modifications are discussed in Section 3.1, Climate Change of this SEIR.

1.7 PUBLIC REVIEW PROCESS

In compliance with the State CEQA Guidelines, the County has taken steps to provide opportunities for the public and other public agencies to participate in the environmental review process (as discussed below) and/or to provide input on the Project and scope of this SEIR.

1.7.1 NOTICE OF PREPARATION/SCOPING MEETING

The County distributed a Notice of Preparation (NOP) for a 30-day review period from March 29, 2024 to April 27, 2024 to all interested agencies, organizations, and individuals. In accordance with CEQA Guidelines Section 15082, a Notice of Completion (NOC) was transmitted to the Office of Planning and Research (OPR) State Clearinghouse and the NOP was filed at the Los Angeles County Registrar-Recorder/County Clerk on March 28, 2024.

An in-person scoping meeting was held to solicit suggestions from the public as to the content of the SEIR on April 18, 2024, from 6:00-8:00 PM at the Gorman Elementary School, located at 49847 Gorman School Rd, Gorman, CA 93243. In addition, a virtual (online) scoping meeting was also held the following day on April 19 at 6:00 PM via Zoom. Attendees were able to provide written and oral input regarding the scope of the environmental analyses and Project changes to be incorporated into the SEIR.

The NOP and NOP comments are included in Appendix B, and Table 1-1 includes a summary of the NOP comments received. Table 1-1 also includes a column that identifies which section(s) of this 2019 EIR and SEIR address the individual comments. As the SEIR only addresses impacts related to GHG and wildfire, many of the comments pertaining to

discussions were previously addressed in the 2019 EIR and are identified as such in Table 1-1.

TABLE 1-1
NOTICE OF PREPARATION COMMENT LETTERS

Commenter	Date	Comment	Addressed in 2019 EIR or SEIR Sections
Native American Heritage Commission	4/2/24	Recommended consultation with California Native American tribes and consistency with AB 52 and SB 18.	2019 EIR Section 5.6. Cultural and Tribal Resources
Mar Robbart	4/11/24	Requested the name and information of the Project applicant, and timing of the SEIR completion.	N/A. County planner provided a response with the requested information. Not a CEQA-related issue to be addressed in the SEIR.
California Highway Patrol	4/22/24	Received NOP. Concerns with impact on local operations, traffic congestion, increased response times, enforcement, emergency services calls, and public safety.	2019 EIR Section 5.10. Traffic and Section 5.16. Fire Law Enforcement Services.
Adams Broadwell Joseph & Cardozo (Sheila M. Sannadan)	4/23/24	Requested information on the sizing of utility-scale battery storage and microgrids.	SEIR Section 2.0, Project Description
Adams Broadwell Joseph & Cardozo (Sheila M. Sannadan)	4/24/24	Requested mailed notice of any hearings and/or actions related to the Project.	N/A. County planner provided a response with the requested information. Not a CEQA-related issue to be addressed in the SEIR.
Susan Zahnter	4/27/24	Commenter expressed concerns with how the placement of the utility-scale battery energy storage system, may affect surrounding residences, open-space, viewsheds, air quality, water quality, wildlife movement, earthquakes, fire hazard zones, and safety measures.	The Proposed Modifications would add utility-scale battery storage to the list of uses that are already permitted or conditionally permitted within the Specific Plan's Industrial land use designation, The visual, air quality, water quality, biological,, hazard and fire safety impacts of buildout out of the Specific Plan's Industrial land use designation were previously analyzed in 2019 EIR Section 5.13, Visual Resources, Section 5.11, Air Resources, Section 5.4, Water Quality, Section 5.7, Biological Resources, Section 5.1, Geotechnical, and Section 5.3, Hazards and Fire Safety. SEIR Section 4.0, Wildfire. As discussed above, the Proposed Modifications would not cause a new significant impact related to these impact categories, or a substantial increase in the severity of impacts

TABLE 1-1
NOTICE OF PREPARATION COMMENT LETTERS

Commenter	Date	Comment	Addressed in 2019 EIR or SEIR Sections
			within these categories than were previously identified in the 2019 EIR. Moreover, there is no new information of substantial importance related to these impact categories that was not known and could not have been known when the 2019 EIR was certified. The fire safety impacts of the Approved Project with Proposed Modifications are discussed in Section 4.0 of this SEIR.
California Department of Fish and Wildlife (CDFW)	4/29/24	Concerns with biological resources impacts, specifically including effects to vegetation, listing status changes, focused surveys for Crotch's Bumble Bee, impacts to mountain lions and the California Spotted Owl, updated biological surveys, and impacts from fire. More generally the commenter wanted to ensure the SEIR provided adequate disclosure of environmental impacts, inclusion of feasible mitigation, provision of a biological baseline, direct and indirect impacts affecting biological resources, discussion of project description/alternatives/cumulative impacts, compliance with a Lake and Streambed Alteration and CESA, compensatory mitigation, long-term management of mitigation lands, wildlife friendly fencing, use of native plants and trees, translocation/salvage of plants and animals, scientific collection permit, and wetland resources.	2019 EIR Section 5.7. Biological Resources. As discussed in Section 1.6, Scope of this Supplemental EIR, the Proposed Modifications would not create any new ground disturbances that were not otherwise anticipated by the 2019 EIR. Conditions of the Centennial Specific Plan project site related to biological resources have not changed since the certification of the 2019 EIR and the Proposed Modifications would not cause a new significant impact to biological resources, or a substantial increase in the severity of impacts to biological resources previously identified in the 2019 EIR. Moreover, there is no new information of substantial importance related to impacts to biological resources that was not known and could not have been known when the 2019 EIR was certified. Nevertheless, the Applicant's consultant prepared a supplemental Habitat Assessment, dated September 16, 2024, which addresses habitat suitability for Crotch's bumble bee (CBB) on the Project Site (Psomas 2025, refer to Appendix C). The Habitat Assessment concluded that CBB has been previously documented on the Project site,

TABLE 1-1
NOTICE OF PREPARATION COMMENT LETTERS

Commenter	Date	Comment	Addressed in 2019 EIR or SEIR Sections
			and the site currently contains potentially suitable habitat. The Habitat Assessment further recommends the Applicant implement a Project Design Feature to avoid impacts to CBB, as described in more detail in Section 2.0 of this SEIR.
Tristan Johnson	4/29/24	Requested information regarding the Project based on the NOP signage located on-site.	N/A. County planner provided a response with the requested information.
Adams Broadwell Joseph & Cardozo (Sheila M. Sannadan)	4/29/24	Requested to withdraw CEQA notice request previously sent.	N/A.

1.8 ORGANIZATION OF THE SEIR

This SEIR contains four sections, as listed below. For ease of use, the references have been listed at the end of each section instead of the end of the document in a separate section.

Section 1.0: Introduction.	This section provides an introduction to the SEIR, background on the 2019 EIR, the SEIR process, and the public involvement process.
Section 2.0: Project Description.	This section provides a description of the Modified Project, and includes discussions of the Project's objectives, its design, implementation, and the entitlements required, among other issues.
Section 3.0: Greenhouse Gas Emissions	This section presents the regulatory and environmental settings, threshold criteria, direct and indirect environmental impacts, mitigation measures if needed, and level of significance after mitigation, including identification of any unavoidable significant impacts for Greenhouse Gas Emissions.
Section 4.0: Wildfire	This section presents the regulatory and environmental settings, threshold criteria, direct and indirect environmental impacts, mitigation measures if needed, and level of significance after mitigation, including identification of any unavoidable significant impacts for Wildfire.

1.9 REFERENCES

County of Los Angeles. 2019 (April 30). *Centennial Project Final Certified EIR.*

Psomas. 2025 (February 19). *Crotch's Bumble Bee Habitat Assessment for the Centennial Specific Plan Project.*

2.0 PROJECT DESCRIPTION

2.1 INTRODUCTION

On April 30, 2019, Los Angeles County ("County") certified the Centennial Project Environmental Impact Report ("EIR"), State Clearinghouse No. 2004031072 ("Centennial 2019 EIR" or "2019 EIR") pursuant to the California Environmental Quality Act ("CEQA") and issued initial entitlement approvals for the (a) the Centennial Specific Plan to govern the Project's development, (b) a General Plan Amendment to amend the highway maps of the Los Angeles General Plan and the County's Antelope Valley Area Plan, (c) a Zoning Ordinance Amendment to change the property's zoning from Open Space Light-Agricultural (two acre minimum required lot area), Residential Planned Development, Commercial Planned Development and Manufacturing Planned Development to Specific Plan (SP), (d) a Vesting Tentative Parcel Map to create 20 large-lot parcels on 8,408 acres of the Property for lease, conveyance and financing purposes only, (e) a Conditional Use Permit (CUP) to authorize the Specific Plan development process, and (f) a statutory development agreement to vest the approved land use entitlements and provide specified community benefits including but not limited to affordable housing (collectively the "Approved Project").

On May 15, 2019, Climate Resolve, a nonprofit public benefit corporation, filed a petition commencing litigation in the Los Angeles County Superior Court, challenging the County's approval of the Project and certification of the EIR. On May 29, 2019, two other nonprofit organizations, the Center for Biological Diversity and the California Native Plant Society ("CBD/CNPS"), filed a separate petition challenging the County's approval of the Project and certification of the EIR.

CBD/CNPS's challenge focused on issues related to the adequacy of the EIR's project description, its analysis of biological resources, its analysis of impacts to the Pacific Crest Trail, its analysis of consistency with the Southern California Association of Governments ("SCAG") Regional Transportation Plan/Sustainable Communities Strategy ("RTP/SCS") and the Los Angeles County General Plan, and its analysis of alternatives to the proposed project. CBD/CNPS also alleged the Project was inconsistent with Planning and Zoning Law.

Climate Resolve's challenge focused on issues related to the EIR's analysis of greenhouse gas ("GHG") impacts and analysis of wildfire impacts.

On April 5, 2021, the Los Angeles County Superior Court issued two orders (collectively, the "Court Order") denying CBD/CNPS's petition in its entirety and granting Climate Resolve's petition.

Following issuance of the Court Order, but prior to final judgment in the Climate Resolve action, the Project proponent and Climate Resolve entered into a legally enforceable settlement agreement to finally resolve the Climate Resolve litigation ("Settlement Agreement"), included as Appendix A. The Settlement Agreement became effective and fully enforceable on November 30, 2021. The Settlement Agreement addresses the key issues

identified in the Court's ruling in the Climate Resolve litigation: projected impacts related to climate change and wildfire, as discussed further below.

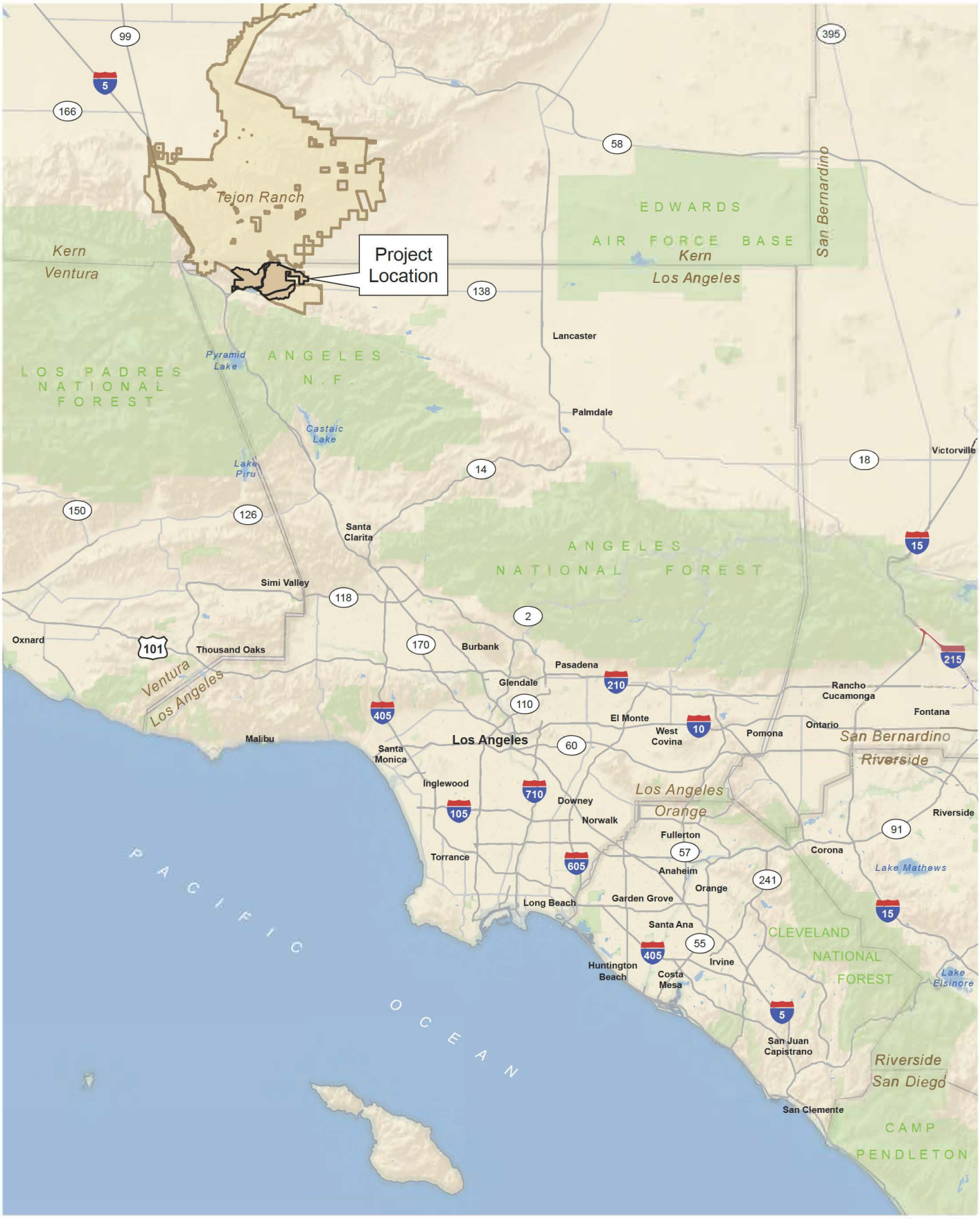
Following dismissal of the Climate Resolve litigation, CBD/CNPS requested permission from the Superior Court to join those arguments raised by Climate Resolve, and the court granted the request. This allowed CBD/CNPS to be granted judgment based on the issues raised by Climate Resolve. The Superior Court entered judgment on March 22, 2023. Both the Project Applicant and CBD/CNPS have appealed different aspects of the Court Order to the Court of Appeal, which is expected to render a decision sometime in 2025.

Since the Project was approved in 2019, the Applicant has proposed discretionary amendments to the approved Specific Plan that will add, as conditionally permitted uses, utility-scale battery storage within the Specific Plan's Industrial land use designation and, as permitted uses, local microgrid electrical distribution systems to serve the Specific Plan area within renewable energy generated on site. The Applicant has also proposed opening the existing Cement Road, and the approved Cement Road Realignment, for public use to improve overall fire resiliency (whereas the Approved Project identified Cement Road as a private roadway). Based on these proposed changes, the Project Applicant requests minor amendments to Centennial Specific Plan adopted as part of the 2019 Approved Centennial Project ("Proposed Modifications"), as further described in this Supplemental Environmental Impact Report ("SEIR"). The SEIR will supplement the Centennial 2019 EIR and will focus the supplemental analysis on climate change (including greenhouse gas emissions) and wildfire.

2.2 PROJECT LOCATION

The site of the Approved Project with Proposed Modifications has not changed from the Project site described in the 2019 EIR. The site and consists of approximately 12,323 acres (or approximately 19.3 square miles), and is located in the northwestern portion of the Antelope Valley in unincorporated Los Angeles County (the "Project site"). The Project site's western boundary is approximately one mile east of Interstate (I) 5, and State Route (SR) 138 runs through the southern portion of the Project site. The Project site is located approximately 35 miles north of Santa Clarita, 5 miles east of Gorman, 36 miles west of Lancaster, and 50 miles south of Bakersfield. The community of Gorman in Los Angeles County is adjacent to I-5 approximately four miles north of the I-5/SR-138 junction. As presented in Exhibit 2-1, Regional Location, and Exhibit 2-2, Project Vicinity Map, depicts the Project site in a regional and local context, respectively.

As shown on Exhibit 2-2, the Project site is immediately south of the divergence in the California Aqueduct into its East and West Branches. The West Branch of the Aqueduct runs in a north-south direction and generally bisects the Project site. The East Branch runs off-site along the northern boundary of the Project site. Quail Lake is adjacent to the Project site's southern boundary. The Project site's eastern boundary is 290th Street West. The Project site extends for approximately seven miles between its western boundary (west of Quail Lake) and its eastern boundary near 290th Street West. Elevations range from approximately 3,000 feet above mean sea level (msl) on the floor of Antelope Valley in the



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Regional Location

Exhibit 2-1

Centennial Supplemental Environmental Impact Report

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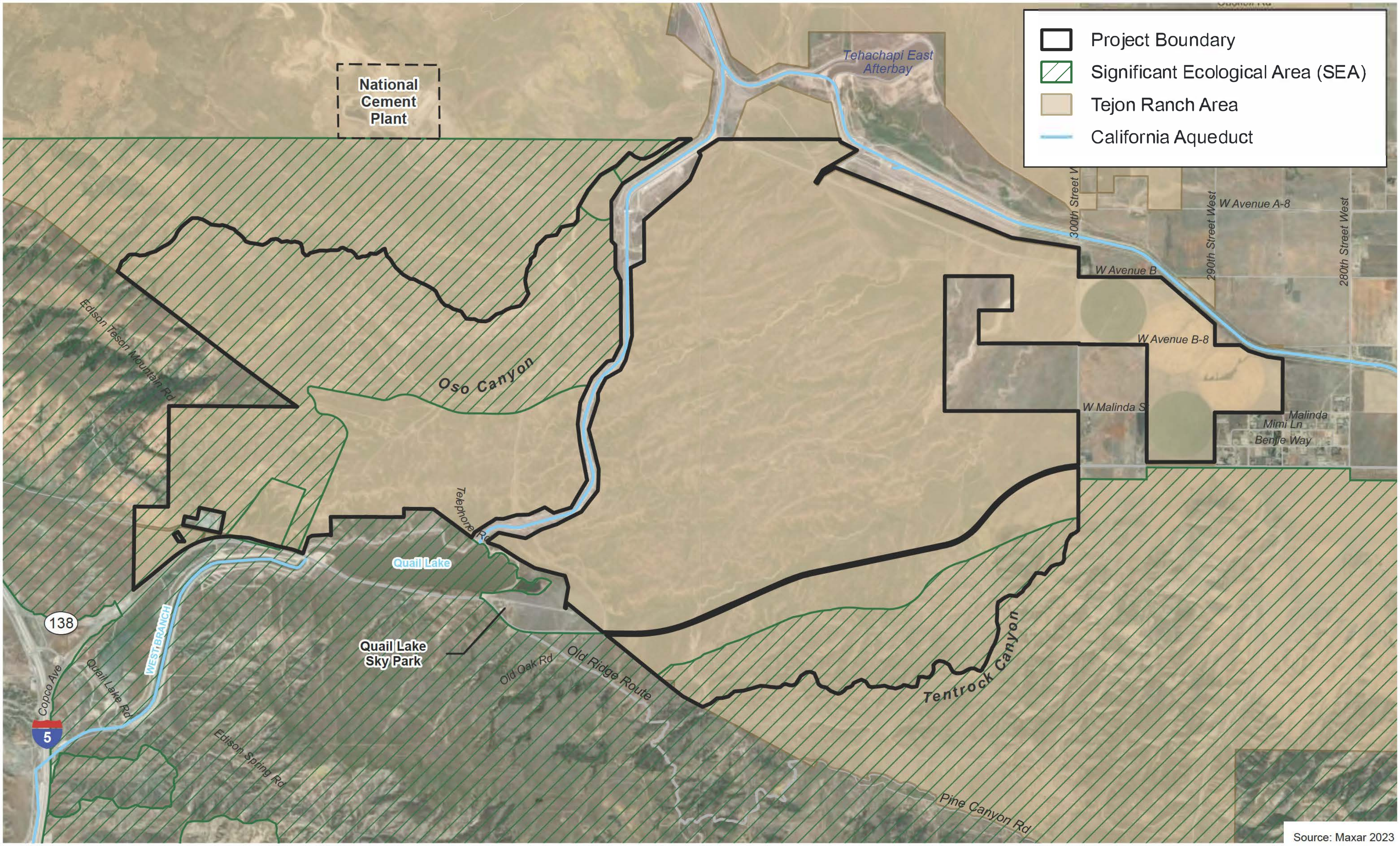

Aerial and Project Boundary

Exhibit 2-2

Centennial Supplemental Environmental Impact Report

N W E S

1 0.5 0 1 Mile

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northeastern portion of the site to approximately 4,250 feet above msl in the northwestern portion of the property.

The Project site is generally bound by the Tehachapi Mountains to the north, and the Antelope Valley to the east; the northern edges of the Liebre and San Gabriel Mountains (Angeles National Forest) are approximately one mile to the south, and privately owned vacant land is immediately adjacent to the site to the west. The Los Padres National Forest is approximately seven miles to the west.

There are two "Not a Part" (NAP) parcels located within the Project site boundaries. These two parcels are in the western portion of the Project site, encompassing 25.2 and 1.9 acres, and are owned by Southern California Edison (SCE). One of these parcels includes an Edison substation, and the other is vacant. Additionally, although the California Aqueduct (West Branch) and the SR-138 pass through the Project site, they are not part of the Project site nor within the Project boundaries.

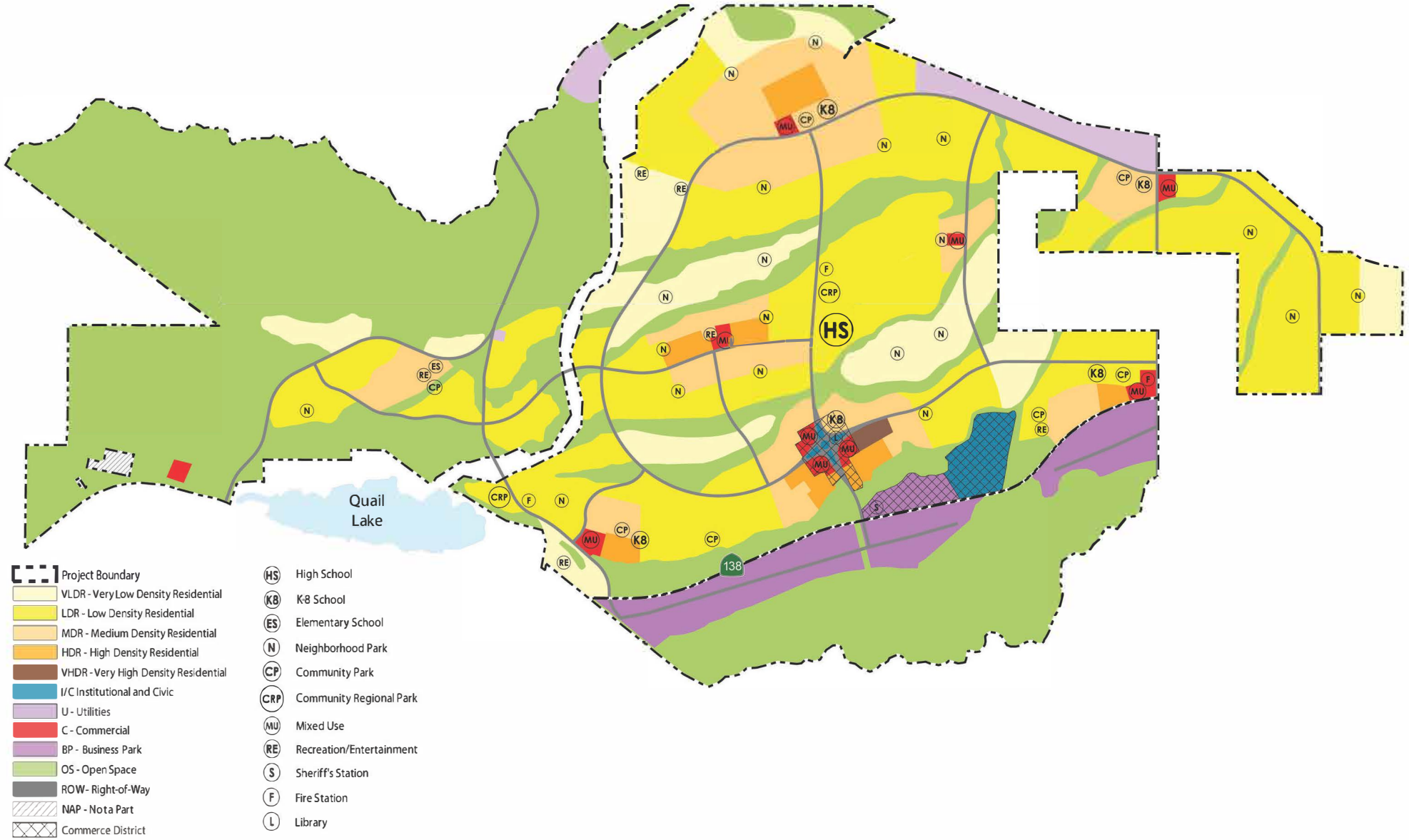
2.3 APPROVED PROJECT OVERVIEW

The Approved Project involves the development of a new master-planned community with residential, commercial, business park, recreational/entertainment, and institutional/civic uses. The Approved Project includes open space, parks, schools, utilities, and infrastructure to support the proposed land uses and future residents. The Approved Project's land uses (including proposed land use designations) are depicted on Exhibit 2-3, Conceptual Land Use Plan. As noted above, the NAP parcels shown on Exhibit 2-3 are not owned by the Project Applicant/Developer and are not included in the Conceptual Land Use Plan.

The primary entitlement action associated with the Approved Project included the adoption of the *Centennial Specific Plan,* additional entitlement actions included a General Plan Amendment, Zone Change to Specific Plan; Development Agreement; Parcel Map; and Conditional Use Permits (CUPs) for Grading and Project-related infrastructure. Project buildout would be implemented in phases, based on future market conditions, over an approximate 20-year period through a series of future tract and parcel maps.

As identified in Table 2-1, Centennial Project Overview, the Approved Project site encompasses approximately 12,323 acres and authorizes development of up to 19,333 dwelling units (du) on approximately 4,987 gross acres[1] of land designated for residential uses. Other land uses include approximately 7,363,818 square feet (sf) of Business Park uses (office, research and development, and warehousing or light manufacturing uses) on approximately 597 gross acres; and approximately 1,034,550 sf of Commercial uses on approximately 102 acres. Proposed Institutional/Civic land uses (such as schools for higher education, medical facilities, library, and other civic uses) encompass approximately 1,568,160 sf on approximately 110 acres.

[1] Acreages for all categories are considered gross acreage and does not account for transitional slopes or internal slopes. Actual developable acreage may be reduced with future detailed planning.



Source: Placeworks 2017

Centennial Project – Conceptual Land Use Plan

Exhibit 2-3

Centennial Supplemental Environmental Impact Report

N W E S

Map Not to Scale

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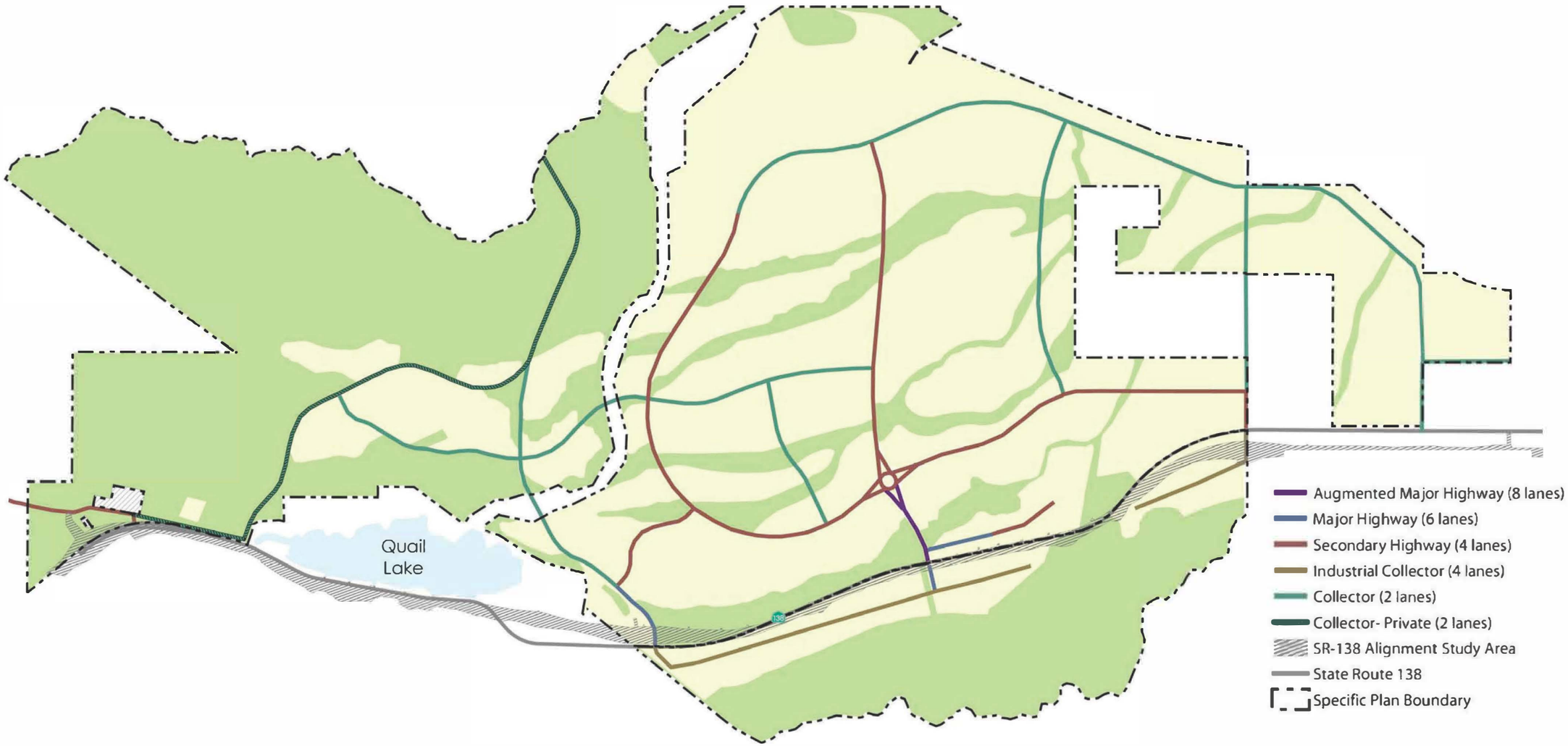
The Approved Project includes approximately 130,680 sf of Recreation/Entertainment uses (clubhouse, farmers market, childcare facilities, health clubs) on approximately 75 acres. Proposed sites for major Utility facilities that would serve the entire community (e.g., wastewater reclamation facilities, water treatment facility, water bank, materials recovery facility) encompass approximately 191 acres, and Kindergarten through 12th grade (K-12 schools would be located on approximately 145 acres. Approximately 5,624 acres (approximately 45.6 percent) of the 12,323-acre Approved Project site are proposed for Open Space for natural resource protection and greenways, and parks for active and passive recreational use. The Approved Project also includes a vehicular and a non-vehicular circulation system.

The Approved Project includes an integrated network of roadways, as shown on Exhibit 2-4, Backbone Roads 2019, walking and biking trails to reduce automobile use and facilitate safe and efficient travel. An extensive network of sidewalks, greenway trails (approximately 13 miles), and community trails (approximately 60 miles) would link residential, schools, shopping, and employment areas. Specific Plan Design Metrics of the Approved Project ensure that parks and mixed-use centers are within walkable proximity to residences to further minimize internal vehicle trips. Consistent with State and regional planning objectives that focus on reducing the use of single occupancy vehicles (SOVs) for travel, the Approved Project must meet the following mobility performance standards: (1) a minimum of 20 percent of total daily peak morning and afternoon external (e.g., commuting) trips must be completed by using non-SOV transit modes; and (2) a minimum of 30 percent of total daily internal (e.g., local) trips must be completed by using non-SOV transit modes.

TABLE 2-1
CENTENNIAL PROJECT OVERVIEW

Land Use	Gross Acres	Maximum Permitted Density/Intensity	
		Units	Square footage
Residential	4,987	19,333	-
Business Park (BP)	597	-	7,363,818
Commercial (C)	102	-	1,034,550
Institutional/Civic (I/C)	110	-	1,568,160
Recreation/Entertainment (R/E)	75	-	130,680
Utility (U)	191	-	-
Right of Way (ROW) [a]	327	-	-
School (S) Overlay	146	-	-
Open Space (OS) Overlay	5,624	-	-
Park (P) Overlay	163	-	-
TOTAL	**12,323**	**19,333**	

Source: Placeworks 2017.
Note: totals may not add due to rounding.
[a] The ROW include acreage for the arterials and collectors identified in the Centennial Circulation Plan.



Source: Dudek 2019

Backbone Roads (2019)

Exhibit 2-4

Centennial Supplemental Environmental Impact Report

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Map not to scale

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In the future, the Project Applicant/Developer will submit applications for tentative tract maps (TTMs) and other approvals needed for the development ("future approvals"), and/or the Project Applicant/Developer may request changes in the Conceptual Land Use Plan or other aspects of the project in accordance with Chapter 4 of the *Centennial Specific Plan.* Implementation of the Project, including subsequent County approvals, are described in Chapter 4 of the *Centennial Specific Plan.*

2.4 APPROVED CENTENNIAL SPECIFIC PLAN

The *California Government Code* establishes the authority for cities and counties to adopt specific plans either by resolution as policy or by ordinance as regulation. Specific plans are customized regulatory documents established to provide a framework for the planning and development of multi-use projects. They provide more focused guidance and regulations by detailing the permitted uses of specific areas. They describe a project's purpose, vision, and features and present the project description including type and distribution of land uses (which constitutes zoning, infrastructure plans, development standards, and implementation measures).

The *Centennial Specific Plan* is a regulatory document that was previously approved by the County Board of Supervisors on April 30, 2019 and included as Appendix D. Upon adoption of the *Centennial Specific Plan*, the development standards and zoning of the *Centennial Specific Plan* became the zoning for the site. (Chapters One through Four of the *Centennial Specific Plan*—including Appendices 1-A, 1-C, and 1-D—would be adopted by ordinance, and Appendix 1-B, 2-A, and 2-B of the *Centennial Specific Plan* would be adopted by resolution.)

A statistical summary of the *Centennial Specific Plan* is provided in Table 2-2, Centennial Specific Plan Statistical Table. The *Centennial Specific Plan* has organized the development into nine "Villages" as well as areas designated as Public Facilities, Civic, and Business Park (described below and in Section 2.1 of the *Centennial Specific Plan*).

TABLE 2-2
CENTENNIAL SPECIFIC PLAN STATISTICAL TABLE

Land Use	Gross Acres	Dwelling Units	Square Feet
Village 1			
Residential			
Very Low Density	89	126	–
Low Density	371	1,210	–
Medium Density	36	234	–
High Density	23	255	–
Commercial	13	–	141,570
Recreation/Entertainment Overlay	50	–	87,120
School Overlay	15	–	–
Park Overlay	38	–	–
Right-of-Way	26	–	–
Subtotal	**661**	**1,825**	**228,690**
Village 2			
Residential			
Low Density	313	930	–
Medium Density	139	873	–
High Density	45	480	–
Commercial	10	–	98,010
Recreation/Entertainment Overlay	4	–	6,970
Park Overlay	12	–	–
Right-of-Way	29	–	–
Subtotal	**552**	**2,283**	**104,980**
Village 3			
Residential			
Medium Density	155	972	–
High Density	58	600	–
Very High Density	18	300	–
Commercial	30	–	294,030
Institutional/Civic	8	–	139,392
School Overlay	15	–	–
Park Overlay	3	–	–
Right-of-Way	33	–	–
Subtotal	**320**	**1,872**	**433,422**
Village 4			
Residential			
Very Low Density	295	410	–
Low Density	168	560	–
Recreation/Entertainment Overlay	10	–	17,424

TABLE 2-2
CENTENNIAL SPECIFIC PLAN STATISTICAL TABLE

Land Use	Gross Acres	Dwelling Units	Square Feet
Park Overlay	9	–	–
Right-of-Way	12	–	–
Subtotal	**494**	**970**	**17,424**
Village 5			
Residential			
Very Low Density	87	116	–
Low Density	454	1,495	–
Medium Density	427	2,709	–
High Density	52	555	–
Commercial	9	–	87,120
School Overlay	15	–	–
Park Overlay	22	–	–
Right-of-Way	35	–	–
Subtotal	**1,101**	**4,875**	**87,120**
Village 6			
Residential			
Very Low Density	207	286	–
Low Density	283	1,080	–
Medium Density	44	279	–
Commercial	5	–	54,450
School Overlay	60	–	–
Park Overlay	34	–	–
Right-of-Way	14	–	–
Subtotal	**647**	**1,645**	**54,450**
Village 7			
Residential			
Very Low Density	80	112	–
Low Density	235	845	–
Medium Density	51	324	–
High Density	16	165	–
Commercial	16	–	163,350
Recreation/Entertainment	5	–	8,712
School Overlay	15	–	–
Park Overlay	12	–	–
Right-of-Way	12	–	–
Subtotal	**443**	**1,446**	**172,062**

TABLE 2-2
CENTENNIAL SPECIFIC PLAN STATISTICAL TABLE

Land Use	Gross Acres	Dwelling Units	Square Feet
Village 8			
Residential			
Very Low Density	69	96	–
Low Density	738	2,450	–
Medium Density	46	297	–
Commercial	10	–	108,900
School Overlay	15	–	–
Park Overlay	19	–	–
Right-of-Way	20	–	–
Subtotal	**917**	**2,843**	**108,900**
Village 9			
Residential			
Very Low Density	88	124	–
Low Density	335	1,090	–
Medium Density	65	360	–
Recreation/Entertainment Overlay	6	–	10,454
School Overlay	10	–	–
Park Overlay	13	–	–
Utility	3	–	–
Right-of-Way	14	–	–
Subtotal	**534**	**1,574**	**10,454**
Land Use Areas Not Within a Village			
Commercial	9	–	87,120
Institutional/Civic	102	–	1,428,768
Business Park	597	–	7,363,818
Open Space	5,624	–	–
Utility	188	–	–
Right-of-Way	132	–	–
Subtotal	**6,652**	**–**	**8,869,453**
Totals	***12,323***	***19,333***	***10,097,208***
Source: Placeworks 2019.			

2.5 PURPOSE OF THE APPROVED PROJECT WITH PROPOSED MODIFICATIONS

The underlying purpose of the Approved Project with Proposed Modifications is the same as the project purpose described in the 2019 EIR, and stems from the need to develop a sustainable community in the greater Los Angeles County region that creates a balance among residential, commercial, and other employment-generating uses and institutional/public uses, all while being sensitive to the environment.

The Approved Project with Proposed Modifications is designed to be in compliance with the vision, assumptions, goals, and policies of the *Antelope Valley Area Plan* (AVAP), which was adopted by the Los Angeles County Board of Supervisors on June 16, 2015 (LACDRP 2015). The AVAP is one of 11 community-based Area Plans that falls under the *County of Los Angeles General Plan,* and as such, the AVAP serves as the General Plan for the Project site. The potential implementation of the Approved Project with Proposed Modifications was known at the time of the development of the AVAP and was accounted for in the AVAP's land use and population/employment growth assumptions, as well as implementation program.

The AVAP sets forth a vision that includes the creation of opportunities for the Antelope Valley to change and grow while preserving the rural lifestyle enjoyed by current residents and support a vibrant economy. The AVAP was prepared to achieve this vision through the development of four types of environments that would facilitate the preservation of rural areas of the Antelope Valley, including:

1. Rural Preserve Areas, where residential densities would be reduced in order to protect important ecological and agricultural resources and to minimize development in very high hazard areas;
2. Rural Town Areas, where maximum residential densities and minimum lot sizes would be established to preserve rural character;
3. Rural Town Centers, where urban commercial uses would be discouraged but rural commercial uses would be incentivized; and
4. Economic Opportunity Areas (EOAs), where plans for major infrastructure development are underway that may create the need for more detailed planning activities for these areas in the future.

The AVAP identifies three EOAs, and the Project site is located entirely within the West EOA. EOAs are defined as clusters of land with higher development densities along the routes of two proposed major infrastructure projects in the Antelope Valley; the High Desert Corridor (HDC) and the Northwest 138 Corridor Improvement (NW138) Project. The West EOA is adjacent to the SR-138. This joint project (SCH No. 2013111016) between the California Department of Transportation (Caltrans) and the Los Angeles County Metropolitan Transportation Authority (Metro) proposes widening and slightly realigning SR-138. The Centennial Project complements the County's AVAP by capitalizing on the transportation

infrastructure investment that State and regional agencies are bringing into the area, while still achieving the overall goal of rural preservation in the Antelope Valley.

Prior to any master-planned development approval in the West EOA, a specific plan, community plan, or other similar planning document is required to ensure orderly development. EOAs include land use designations that allow for a balanced mix of residential, commercial, and light industrial uses, while preserving the rural character and ecological resources of the surrounding areas. As such, the Approved Project with Proposed Modifications implements the requirements of the AVAP by including a balance of land uses consistent with the intent and the land use designations set forth for the West EOA in the AVAP. Additionally, as the Approved Project with Proposed Modifications would be consistent with the specific conditions of the AVAP, it would also be consistent with the general provisions as set forth in the *County of Los Angeles General Plan*.

2.6 OBJECTIVES OF THE APPROVED PROJECT WITH PROPOSED MODIFICATIONS

The Approved Project with Proposed Modifications demonstrates consistency with the AVAP through the following Project Objectives:

1. Implement the Antelope Valley Area Plan (AVAP) by creating an environmentally and economically sustainable master-planned community on the Project site to help accommodate planned regional population and economic growth within the West EOA.
2. Design the Project to maximize efficient utilization of regional infrastructure while preserving hundreds of thousands of acres of contiguous natural open space and important biological resources.
3. Size the Project to include a broad range of employment, residential, institutional, and recreational land uses to encourage walkability and wellness, while reducing off-site employment-related commuter trips.
4. Ensure that all Project site infrastructure and public services are funded by the Project to avoid creating any financial obligations on existing residents and other taxpayers.
5. Integrate a multi-modal transportation network, renewable energy, water conservation, community wellness, and other green development features into the Project's design, build out, and ongoing operations.

These Project Objectives remain unchanged from those articulated in the 2019 EIR.

2.7 CLIMATE RESOLVE SETTLEMENT AGREEMENT

As stated above, on April 5, 2021, the Los Angeles County Superior Court issued the Court Order rejecting all CBD/CNPS and most Climate Resolve arguments that the Centennial EIR was deficient under CEQA. The Court Order specifically upheld almost all components of the EIR's GHG analysis, including by way of example the fact that substantial evidence supported the 2019 EIR's determination that the Approved Project is consistent with Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) adopted by the Southern California Association of Governments (SCAG) to establish a regional land use pattern capable of achieving regional GHG reduction for the land use sector adopted by the California Air Resources Board (CARB). The Court also found that the 2019 EIR use of a service population metric to assess the Approved Project's compliance with statewide GHG reduction targets was supported by substantial evidence. In addition, the Court found that the 2019 EIR did not mislead as to the cumulative effects of GHG emissions and properly explained that carbon emissions caused by the Approved Project's consumption of electricity would be fully offset with an equivalent amount of carbon emission reductions. In addition, the Court upheld the 2019 EIR's calculation of GHG emission reductions associated with the Approved Project's affordable housing commitment and its use of electric vehicles during the Project lifetime. Finally, the Court determined that substantial evidence supports the 2019 EIR's calculation of the Approved Project's GHG emissions and GHG emission reductions associated with applicable mitigation measures and Project Design Features.

Following issuance of the Court Order in the Climate Resolve litigation, the Approved Project proponent, Centennial LLC and its affiliate Tejon Ranchcorp., and Climate Resolve, a nonprofit public benefit corporation, entered into an agreement to resolve such litigation (Settlement Agreement). The Settlement Agreement became effective and fully enforceable on November 30, 2021. As a result of the Settlement Agreement, the Climate Resolve lawsuit was dismissed by the Court with prejudice. A copy of the Settlement Agreement is included as Appendix A. The Settlement Agreement is legally binding on the Approved Project proponent. Compliance with the Settlement Agreement is required by the Applicant, but the County has no obligations under the Settlement Agreement. No revisions to the entitlements in the Approved Project are required for the Applicant to comply with the Settlement Agreement. The Settlement Agreement addresses the key issues identified in the Court's ruling in the Climate Resolve litigation: projected impacts related to climate change and wildfire, as discussed further below.

As explained in more detail in Draft SEIR Section 3.1, Climate Change, the Settlement Agreement requires the Approved Project annually eliminate more than three times the annual GHG emissions produced by the Approved Project, as calculated by the 2019 EIR and upheld by the Court. Whereas the 2019 EIR determined that 157,642 metric tons of carbon dioxide equivalent per year ($MTCO_2e$/yr) of the Approved Project's GHG emissions would not be directly offset by Project Development Features and required mitigation measures, the Settlement Agreement requires proponents of the Approved Project to ensure 500,000 $MTCO_2e$ in GHG reductions annually through implementation of various GHG reduction measures specified in the Settlement Agreement. The Settlement Agreement thus requires

that development of the Approved Project result in no net increase of GHG emissions over baseline conditions, as recognized by CARB in its 2022 Scoping Plan.

Additionally, as discussed in further detail in Draft SEIR Section 3.2, Wildfire, the Court Order specifically upheld almost all components of the EIR's fire hazard analysis, including by way of example the fact that the 2019 EIR adequately disclosed impacts from introducing development and new ignition sources in the area. The Court also found that the 2019 EIR's discussion and analysis of the on-site potential impact of the Approved Project related to wildfires was legally adequate. The Court, however, held that the County failed to proceed as required by law because the 2019 EIR did not adequately analyze wildfire risks beyond the Project site and did not adequately explain why off-site fire risks posed by the Project would be reduced to a less than significant level. The Settlement Agreement requires enhanced wildfire prevention and protection, including on- and off-site fire mitigation commitments, including a Project-specific Fire Protection Plan (FPP) that identifies community fire hazard reduction measures including building design and fuel management requirements. The Settlement Agreement also requires the Project proponent to establish a Good Neighbor Firewise Fund of $500,000 annually to aid communities with a population of less than 10,000 located within 15 miles of the Tejon Ranch in order to reduce off-site fire risks, increase fire prevention, protection, and response measures and reduce or avoid impacts to Project residents and neighboring communities.

Following full execution of the Settlement Agreement, on November 30, 2021, Climate Resolve filed with the Court a dismissal with prejudice of the Climate Resolve litigation, which dismissal was ordered by the Court on December 3, 2021. In early 2022, however, the Court determined that CBD/CNPS was also a prevailing party in the dismissed Climate Resolve lawsuit, and ultimately issued a final Judgment ordering the de-certification of the 2019 EIR and rescission of the entitlements of the Approved Project pending correction of the Cap-and Trade description, any modified cumulative GHG impact analyses warranted by the corrected Cap-and-Trade regulatory description and correction of the 2019 EIR's off-site wildfire analysis. An appeal of this Judgment is pending. Until the appeal is resolved, the 2019 EIR remains certified and the approved entitlements remain in place.

2.7.1 CLIMATE CHANGE SETTLEMENT OBLIGATIONS

With regard to climate change, as discussed in further detail in Draft SEIR Section 3.1, Climate Change, the Settlement Agreement requires the Approved Project to be a "Net Zero GHG Project" - *i.e.*, all of the Approved Project's unmitigated emissions must be counterbalanced by an equivalent amount of GHG reductions from the atmosphere such that it will generate no net increase in GHG emissions above existing conditions. In fact, the Settlement Agreement requires the Approved Project to be established as a greater-than Net Zero GHG Project because it requires more than *three times* full offset mitigation of the Approved Project's unmitigated GHG emissions. As discussed, the 2019 EIR determined that the Approved Project would generate approximately 157,642 $MTCO_2e/y$ in unmitigated GHG emissions, a calculation that the Los Angeles Superior Court determined was supported by substantial evidence. The Settlement Agreement, however, requires the Approved Project to mitigate 500,000 $MTCO_2e/yr$ over the Approved Project's 30-year lifespan.

Per the Settlement Agreement, the Approved Project's 3x Net Zero GHG commitment will be accomplished by two types of GHG reduction measures, including the Itemized and Non-Itemized GHG reduction measures to be implemented in phases (i.e., on a tract map by tract map basis) as the Centennial Specific plan community develops. Satisfaction of the Settlement Agreement's Net Zero GHG requirements will be confirmed and monitored by Centennial Monitoring Group (CMG), which is an independent non-profit group established to monitor compliance with the Settlement Agreement and implementation of terms. The Group would be led by a Board consisting of two members appointed by the Project Applicant, two members appointed by Climate Resolve, and one independent member jointly appointed by Climate Resolve and the Project Applicant.

In addition, a True-Up option is available at fifteen years. Prior to the expiration of fourteen years from the Settlement Agreement effective date, the Project Applicant may elect to undertake a comprehensive process called the "True-Up" that assesses the extent to which the Approved Project has progressed towards becoming a Net Zero GHG Project and would revisit the calculations and assumptions used to calculate the requirements of the Settlement Agreement. This would then go to the CMG Board for review and approval of the modified assumptions and calculations and itemized and non-itemized GHG reduction measures.

Itemized GHG Reduction Measures

The Settlement Agreement requires the Project Applicant, Centennial LLC, and its parent company, Tejon Ranchcorp, to implement the following itemized GHG reduction measures:

- Ensure through enforceable Covenants, Conditions & Restrictions (CC&Rs) that no natural gas infrastructure may be installed within the Centennial Specific Plan project site for residential buildings, recreation centers, and/or public facilities, and through CC&Rs ensure that natural gas use is prohibited in such structures;
- Ensure through enforceable CC&R's that natural gas use prohibited for use by Non-Residential tenants for non-essential uses, which include space heating, non-industrial water heating, space cooling, and non-commercial cooking;
- Prohibit all fireplaces that use fossil fuels within the Centennial Specific Plan project site, as well as within Tejon Ranchcorp's Grapevine Specific Plan project site in Kern County;
- All building developers, including without limitation residential commercial, industrial, or public buildings, must install battery storage systems as required by code. If battery storage systems are not required by code, all building developers shall be required to offer such systems as an option available for purchase or lease;
- Provide an inflation-adjusted $5,000 in reimbursement incentives to the renters or purchasers of each of the project's dwelling units to support the purchase of an electric vehicle (EV) until such time as the incentive has been provided to fifty percent of the project's dwelling units. Informational material on the incentives must be provide at the time of home purchase or rental and regularly advertised through HOA communications;

- Prior to issuance of certificate of occupancy, install one operable Level-2 or higher-capacity EV charger at each of the project's single-family dwelling units;
- Prior to issuance of certificate of occupancy, install operable Level-2 or higher-capacity EV chargers in the parking area of each of the project's multi-unit Residential buildings in such capacity that one charger is provide for one assigned parking space for each of the building's dwelling units;
- Install in nearby parking spaces for each of the project's Non-Residential structures operable Level-2 or higher-capacity EV chargers at a rate of at least one EV charger for each 3,500 square feet of space and no fewer than 3,500 charging connectors. The required EV chargers must be installed and made operatable prior to issuance of a certificate of occupancy for the relevant Non-Residential structure;
- Install 100 operable EV chargers to serve Medium-Duty and Heavy-Duty vehicles at the Tejon Ranch Commerce Center. The first of these EV chargers must be installed and made operable prior to receipt of a certificate of occupancy for the 100,972nd square feet of non-residential uses within the Centennial Specific Plan area, and one additional EV charger must be installed and made operable at the Tejon Ranch Commerce Center prior to issuance of a certificate of occupancy for each subsequent 100,972 square feet of non-residential uses within the Centennial Specific Plan thereafter;
- Establish enforceable CC&Rs requiring the project's Non-Residential owners to maintain and keep operable the EV chargers located on their respective properties, and include in CC&Rs a non-enforceable encouragement to opt into any available one hundred percent renewable energy source as a power supply;
- Provide $7,500 in reimbursement incentives per vehicle for 500 vehicles to businesses that conduct activities on Tejon Ranch to purchase Medium-Duty and Heavy-Duty vehicles (i.e., Class 1-7 trucks or vans) expected to be used in part on Tejon Ranch, for a total of $3,750,000. Such EV incentives must be offered to businesses or other entities for Class 1-7 vehicles that conduct activities on Tejon Ranch, to be awarded in $7,500 grants with one $7,500 grant awarded prior to the certificate of occupancy for the 38th dwelling unit within the Centennial Specific Plan area, and additional $7500 grants for every subsequent 38th dwelling unit until the incentives are fully depleted.
- Provide an EV grant program of $5,000 per vehicle for 300 vehicles for public agency service fleets that serve the Centennial Specific Plan community, but which are controlled by public agencies no specific to the project, such as for public safety, maintenance, and operations for a total of $1,500,000. In addition, provide an EV grant program of $5,000 per vehicle to provide for up to 100 vehicles for project-specific community agencies or organizations, including the Homeowners Association, Commercial and Hospitality Associations, and Transportation Management Association, for a total of $500,000. The total of $2,000,000 in EV incentives must be offered to public service and community service fleet vehicles used at the project site must be awarded in $5,000 grants, within one $5,000 grant awarded prior to issuance of the certificate of occupancy for the 48th dwelling unit in

the project site, and additional $5,000 grants for every subsequent 48th dwelling unit until the incentives are fully depleted.

- Provide incentives totaling $8,000,000 to support the purchase of school and transit buses and vans for the project's schools and community transit fleets, and for the installation of EV chargers to serve them. Such incentives must be awarded in $20,000 grants, with the first grant awarded prior to issuance of the certificate of occupancy for the 48th dwelling unit within the Centennial Specific Plan area and an additional $20,000 grant for each subsequent 48th dwelling unit until the incentives are fully depleted.
- Install 5,000 operable Level-2 or higher-capacity EV chargers in disadvantaged communities located within the jurisdictional boundary of the South Coast Air Management District, with the first EV charger installed prior to issuance of a certificate of occupancy for the 4th dwelling unit within the Centennial Specific Plan area, with one additional EV charger installed for every 4th dwelling unit thereafter.
- Establish enforceable CC&R governing residential building in the Grapevine Specific Plan project site prohibiting the installation of natural gas infrastructure serving residential buildings, and ensuring that natural gas use is prohibited in such structures.

Non-Itemized GHG Reduction Measures

The Approved Project will be established as a Net Zero GHG community by also implementing certain non-itemized GHG reduction measures specified in section 1.b of the Settlement Agreement. The non-itemized GHG reduction commitments include funding one of CARB's approved list of Offset Project Registries (Climate Action Reserve, Verra, American Carbon Registry); funding the development of a new GHG mitigation methodology under CARB or a CARB approved registry; or directly undertake or fund projects on Tejon Ranch directly resulting in a quantified mitigation credit by CARB or a CARB approved Registry. The Settlement Agreement generally prohibits the purchase of emission offsets to fulfill the Settlement Agreement's emission reduction obligations unless approved as a last resort compliance option for one phase of the overall project by a majority vote of the CMG Board, and only to the extent the Board determines that it will otherwise be infeasible for the Project Applicant to reduce or avoid the GHG emissions of that phase of the project to become a Net Zero GHG Project under the terms of the Settlement Agreement. Any such Board vote, however, would be on a temporary, phase-by-phase case and would not be applicable to the entire Project.

Transparent Reporting

The Settlement Agreement requires the Project Applicant to annually publish a report documenting all actions taken in the prior calendar year to comply with the Settlement Agreement's GHG emission reduction requirements, including information on all itemized and non-itemized GHG reduction measures organized by project phase (i.e., organized by each vesting tentative tract map) and information regarding the implementation of the FPP. The required annual report must also list actions the Project Applicant plans to undertake in

the following calendar year to comply with its Settlement Agreement obligations. By way of illustration, the annual report shall include data for the relevant reporting periods that detail applications for tract maps and building permits; the type and amount of EV incentives listed in the Settlement Agreement that have been reserved and actually disbursed; the number, model type, and locations of operative EV chargers installed by the Project Applicant; and the description number and type of onsite and Registry-certified offsite GHG emission reduction measures planned and actually implemented by the Project Applicant.

The annual report must also provide a cumulative total of mitigation credits awarded by Offset Project Registries to the Project Applicant for non-itemized GHG reduction measures since the effective date of the Settlement Agreement and an accounting of how such mitigation credits have been allocated to phases of the Centennial Specific Plan project to enable the CMG to track progress towards achieving Net Zero GHG emissions. Moreover, if the Project's non-residential customers procure biogas for use in place of natural gas, the Settlement Agreement requires the Project Applicant to ask Southern California Gas Company to report on the origins of that biogas as a term of their contract and must include that report in each annual report.

The Settlement Agreement requires each annual report to be made publicly available for download from the Project website free of charge, and the Project Applicant must issue a press release announcing the availability of each annual report for public review. Each annual report must be approved by a majority vote of the CMG, and any disputes regarding the reporting process are subject to a dispute resolution process set forth in section 2.f of the Settlement Agreement.

2.7.2 WILDFIRE SETTLEMENT OBLIGATIONS

With regard to wildfire, as discussed in further detail in Draft SEIR Section 3.2, Wildfire, the Settlement Agreement requires enhanced wildfire prevention and protection, including funding of on- and off-site fire mitigation commitments including a Project-specific FPP, which identifies community fire hazard reduction measures including building, design, and fuel management requirements and a Good Neighbor Firewise Fund, which provides grants to need-based applicants, as discussed further below.

Fire Protection Plan

The Settlement Agreement requires the Approved Project to implement a Project specific FPP, which identifies community fire hazard reduction measures including building, design, and fuel management requirements. The FPP will be updated and submitted to the CMG for compliance monitoring purposes any time Centennial files a tract map to include new or modified State or County fire prevention, protection and response requirements. The CMG Board would be responsible for ongoing compliance and review to ensure the FPP policies are implemented, including evaluating evacuation policies every two years after the initial residences are occupied.

Per the FPP, prior to filing the first application for a building permit for dwelling units, Centennial is required to create a Master Homeowners Association (HOA), which requires that the governing documents of the Master HOA vest the governing board of the Master HOA with authority to impose fines on any homeowner who violates any provision of the CC&R related to fire safety requirements. Moreover, the HOA governing documents must establish a schedule of reasonable monetary penalties to be assessed by the Master HOA against any homeowner that violates any provision of the CC&Rs related to fire safety requirements. In addition, the HOA governing documents must make the Master HOA responsible for the long-term funding and ongoing maintenance of private roads and fire protection systems, including fire sprinklers and private fire hydrants, fuel modification vegetation management in Project common areas, including but not limited to roadsides (including a minimum of 20 feet clearance on each side of roads within the Project development footprint adjacent to open space areas), open space and landscape areas, and fuel modification zones. The FPP further obligates the Project proponent to ensure that the HOA hires a qualified third-party compliance inspector approved by the Los Angeles County Fire Department to conduct a fuel management zone inspection and to submit a Fuel Management Report to the CMG on or before June 1 of each year certifying that vegetation management activities throughout the Project site have been timely and properly performed. In addition, the Settlement Agreement obligates the Master HOA to establish a reverse 9-1-1 system capable of contacting every listed telephone number in the community by computer at a rate of at least 250 calls per minute. To fund these obligations, the Settlement Agreement requires that the Master HOA be authorized to assess on each Project dwelling unit an ongoing, permanent fee, tax, or assessment in the total cumulative amount for the Project of no more than $500,000 per year, inflation adjusted, with a presumptive pro-rata allocation of $26 per dwelling unit, which revenues the Master HOA must disperse consistent with the Settlement Agreement's required FPP.

Per the required FPP, the Master HOA must also establish a Fire Protection Education Committee (FPEC) to promote education and tools that provide information to Project homeowners about the Project's overall fire safety requirements, as described in the FPP, and about each homeowner's individual obligations thereunder. In addition, the FPEC must promote education programs and tools that provide information to homeowners about wildland fire ecology, management, protection and fire prevention, and it must coordinate with LACoFD to identify opportunities for improvement in all areas of wildland fire communication, education, protection and prevention. The Settlement Agreement requires that the HOA's governing documents obligate the FPEC to prepare and implement a community-wide fire education program based on the National Fire Protection Association's (NFPA) Firewise Communities program and designed to establish the Project as a NFPA Firewise USA site and to fully educate Project homeowners of their responsibilities under the FPP.

Good Neighbor Firewise Fund

The Settlement Agreement also requires the Approved Project to establish a Good Neighbor Firewise Fund of $500,000 annually, which provide grants to need-based applicants to be awarded by the CMG to aid communities with a population of less than 10,000 within

15 miles of Tejon Ranch in order to reduce off-site fire risks and increase fire prevention, protection and response capabilities. The Settlement Agreement authorizes the CMG to review applications for the fund and award grants to fund the following activities:

- Updating planning documents and zoning ordinances, including general plans, community plans, specific plans, local hazard mitigation plans, community wildfire protection plans, climate adaptation plans, and local coastal programs to protect against the impacts of wildfires;
- Developing and adopting a comprehensive retrofit strategy;
- Funding fire-hardening retrofits of residential units and other buildings;
- Reviewing and updating the local designation of lands within the jurisdiction as very high fire hazard severity zones;
- Implementing wildfire risk reduction standards, including development and adoption of any appropriate local ordinances, rules, or regulations;
- Establishing and initial funding of an enforcement program for fuel and vegetation management;
- Performing infrastructure planning, including for access roads, water supplies providing fire protection, or other public facilities necessary to support the wildfire risk reduction standards;
- Partnering with other local entities to implement wildfire risk reduction;
- Updating local planning processes to otherwise support wildfire risk reduction;
- Completing any environmental review associated with the listed activities;
- Covering the costs of temporary staffing or consulting needs associated with the listed activities;
- Implementing community-scale risk reduction programs to become Firewise USA sites;
- Implementing resiliency plans such as resiliency centers with stable electricity supplies (e.g., microgrid, solar, and battery equipment) available to residents during times of power shutdowns or other emergencies; and
- Other fire-related risk-reduction activities that may be approved by the CMG Board.

2.8 DESCRIPTION OF THE PROPOSED MODIFICATIONS

The Proposed Modifications are comprised of discretionary amendments to the Centennial Specific Plan that will add, as conditionally permitted uses, utility-scale battery storage within the Specific Plan's Industrial land use designation and, as permitted uses, local microgrid electrical distribution systems to serve the Specific Plan area within renewable energy generated on site in support of the Net Zero GHG Program. The proposed Specific Plan amendments, included as Appendix E, will also open the majority of the approved Cement Road Realignment for public use in order to improve overall fire resiliency, whereas

the Approved Project identified the approved Cement Road Realignment as a private roadway.

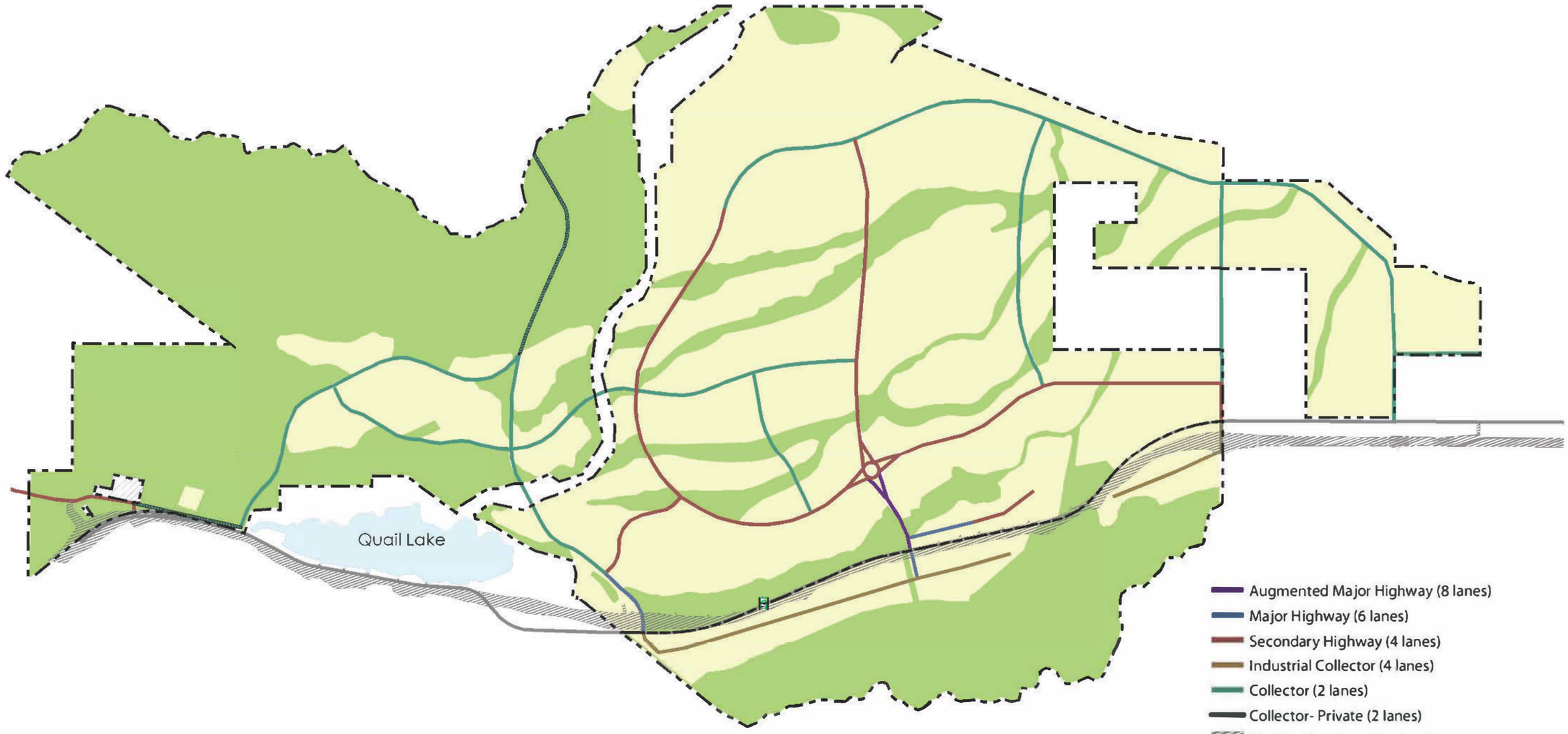
Specifically, the Proposed Modifications would implement the following Specific Plan adjustments:

- **Revise Specific Plan Figure 3-1**: Figure 3-1 of the approved Centennial Specific Plan, which is referenced as Exhibit 2-4 in the SEIR and depicts the Project's backbone roadways, would be revised to redesignate the approved Cement Road Realignment as a public, rather than a private, collector street. The Approved Project's Figure 3-1 depicts the approved Cement Road Realignment as "Collector – Private (2 lanes)", whereas the Proposed Modifications' Figure 3-1 depicts the approved Cement Road Realignment as "Collector (2 lanes)", as shown on the proposed new Figure 3-1 set forth below, and included as Exhibit 2-5, Backbone Roads in the SEIR.
- **Revise Specific Plan Circulation Element:** The Circulation Element of the approved Specific Plan would be revised to add the following new paragraph to the end of Circulation Element section 3.2.2:

  > "In coordination with DRP, Centennial will provide five public roadway connections to SR-138 to allow residents multiple access points to Regional Circulation. This will include changing the National Cement Plant Road from being a private road with emergency access only to a public road that will meet LA Public Works and Fire Department's road and safety standards. In addition, the use of 2 lane collectors that will service sub-division housing neighborhoods within the villages will limit the numbers of homes located on a dead-end street with no secondary access. The circulation and design of roadways for these neighborhoods should encourage looped design with multiple connections to main collectors, allowing the flow of traffic to be optimal and provide multiple points of access for emergency vehicles."

- **Revise Specific Plan Table 2-16**: Table 2-16 of the approved Centennial Specific Plan, which sets forth the Specific Plan's Land Use Matrix, would be revised to do the following:

  - Add "Utility-Scale Battery Storage" as a new land use type within Table 2-16's "Light Industrial" category of use types, and would designate such use as "M" – i.e., Permitted with Ministerial Review – within the Specific Plan's Commercial (C), Business Park (BP), School, Utility (U), Institutional and Civic (IC), and Recreation/Entertainment (R/E) land use designations, as shown on the proposed new Table 2-16, included as part of Appendix E.
  - Add "Renewable Energy Microgrids" as a new land use type within Table 2-1's "Accessory Uses and Structures" category of use types, and would designate such use a "P" -i.e., Permitted – within the Specific Plan's Very Low Density Residential (VLDR), Low Density Residential (LDR), Medium Density



Source: Dudek 2024

Backbone Roads

Exhibit 2-5

Centennial Supplemental Environmental Impact Report

N W E S Map not to scale

PSOMAS

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Residential (MDR), High Density Residential (HDR), Very High density Residential (VHDR), Mixed Use (MU), Commercial (C), Business Park (BP) School, Recreation/Entertainment (RE), Utility (U), and Institutional/Civic (I/C) land use designations, and would designate such use as "M" – i.e., Permitted with Ministerial Review – within the Specific Plan's Park land use designation, as shown on the proposed new Table 2-16 set forth below.

Other than the Proposed Modifications, no other changes to the Approved Project are proposed.

New Project Design Feature

Crotch's bumble bee (CBB) is a near endemic species in California. It occurs throughout most of southwestern California including the Mediterranean region, along the Pacific coast, western deserts (sporadically), Great Valley, and adjacent foothills. It was historically common in the Central Valley of California, but currently appears to be absent from most of it, specifically in the center of its historic range. It has also been documented in southwest Nevada near the California boarder and in Baja California, Mexico in the Sierra de Jaurez Mountain Range. While this species can be found in most native habitats, it prefers grassland and scrub habitat types. It can also be found in urban areas with landscaped flowering plants. The presence of CBB at the project site was disclosed in the sensitive insect survey conducted for Approved Project and included as Appendix 5.7-B of the 2019 EIR.

CBB was petitioned for listing under the California Endangered Species Act in October 2018, prior to certification of the 2019 EIR, and the presence of CBB at the project site was disclosed in sensitive insect survey conducted for Approved Project and included as Appendix 5.7-B of the 2019 EIR. In June 2019, the California Fish and Game Commission determined that listing CBB as Endangered "may be warranted" and the species was advanced to Candidacy status. The Commission's determination was challenged in court and CBB's Candidacy status was stayed during the ensuing litigation. The California Court of Appeal ultimately upheld the Commission's determination and the California Supreme Court declined to review the Court of Appeal's decision. The CBB's Candidacy status was reinstated on September 30, 2022.

This change in the regulatory status of CBB since certification of the 2019 EIR would not result in new significant impacts or a substantial increase in the severity of a significant impact that was not already considered at in the 2019 EIR. Nevertheless, the Applicant's consultant prepared a supplemental Habitat Assessment, dated September 16, 2024, which addresses habitat suitability for Crotch's bumble bee (CBB) on the Project Site (Psomas 2025, refer to Appendix C). The Habitat Assessment concluded that CBB has been previously documented on the Project site, and the site currently contains potentially suitable habitat. Although impacts to CBB were not directly assessed in the 2019 EIR, the Approved Project's Mitigation Monitoring and Reporting Program includes Mitigation Measures (MM) for sensitive plants and wildlife species that would also reduce adverse effects to CBB, such as MM 7-3, MM 7-4, MM 7-10, MM 7-11, MM 7-12, MM 7-13, MM 7-15, MM 7-16, MM 7-17, MM 7-18, MM 7-21, and MM 7-22. These measures include various habitat preservation and

restoration requirements for habitat suitable for CBB; fencing of work areas; development of a Landscaping Plan to restrict invasive species; scavenger proof waste management program and homeowner education on avoiding attracting wildlife; monitoring and control of Argentine ants; restriction of public access to the open space areas and promotion of public education and awareness of such areas; pet leash requirements; protocols for reducing the potential for introduction, and monitoring of, of pathogens and pests into the site; the requirement for an Implementation Plan to avoid impacts to the adjacent Significant Ecological Area; and the requirement for any golf courses constructed be designed in accordance with the Audubon Cooperative Sanctuary Program for Golf Courses designed to promote ecologically sound land management and to conserve natural resources.

The Habitat Assessment further recommends, and the Applicant proposes to implement, a Project Design Feature (PDF) to further avoid impacts to CBB, as follows:

CBB PDF

If Project ground-disturbing activities are scheduled to occur during the Crotch's bumble bee colony active period, a habitat assessment shall be conducted by a qualified biologist to identify suitable foraging and nesting habitat for CBB. The qualified biologist shall conduct preconstruction surveys for CBB in suitable habitat identified during the habitat assessment, using methodology accepted by California Department of Fish and Wildlife. If CBB is not detected, no further measures are required. A qualified biologist shall be present during ground-disturbing Project activities that occur during the CBB colony active period.

If CBB is detected:

1. No ground-disturbing activities shall occur within 100-feet of any known nest locations, or as determined by a qualified biologist through evaluation of topographic features or distribution of nectar resources. The no disturbance buffer shall be in place for the duration of the nesting colony active period, unless a nest is determined to be inactive by a qualified biologist or is relocated or removed with California Department of Fish and Wildlife (CDFW) authorization.

2. The Project Applicant shall prepare a CBB Avoidance and Minimization Plan for review and approval of CDFW, which shall include additional, site-specific measures to avoid take of CBB during Project ground-disturbing activities during the nesting colony active period.

3. If the CBB remains a candidate species for listing, or has been listed as endangered or threatened, under the California Endangered Species Act (CESA), and if Project activities will cause "take" of CBB, as defined by CESA, the Project Applicant shall obtain authorization for such take pursuant to Fish and Game Code Section 2081 or any other applicable provision of law providing such authorization.

2.9 REFERENCES

Los Angeles County Department of Regional Planning (LACDRP). 2015 (June). *Antelope Valley Area Plan.* Los Angeles, CA: LACDRP. https://case.planning.lacounty.gov/assets/upl/project/tnc_draft-20150601.pdf.

Placeworks. 2019 (March). *Centennial Specific Plan.*

Psomas. 2025 (February 19). *Crotch's Bumble Bee Habitat Assessment for the Centennial Specific Plan Project.*

3.1 CLIMATE CHANGE

3.1.1 INTRODUCTION

The County of Los Angeles Department of Regional Planning Environmental Checklist Form, which has been prepared pursuant to the California Environmental Quality Act (CEQA), requires that greenhouse gas (GHG) emissions issues be evaluated as part of the environmental documentation process. Because the effects of GHG emissions are considered in a global context, that is, global warming and climate change, GHG emissions are generally addressed at both a project-level (e.g., for purposes of quantifying and mitigating project-level GHG) and as a cumulative issue. Growth-inducing impacts and cumulative impacts are described in Sections 6.0 and 7.0 of this Supplemental Environmental Impact Report (SEIR), respectively. Because the topic of climate change is most appropriately considered on a cumulative level, the impact analysis in this SEIR section is fundamentally a cumulative analysis.

The consensus among leading scientists is that without action to reduce GHG emissions, climate change due to global warming will pose a considerable threat to the environment and to human health and society. The potential cumulative GHG impacts of the approved Centennial Specific Plan Project (Approved Project) were fully disclosed and analyzed in the Centennial Specific Plan Draft Environmental Impact Report (2019 DEIR) and Consolidated Final Environmental Impact Report (2019 FEIR) (collectively, the "2019 EIR") in accordance with the analytical framework described in CEQA Guidelines § 15064.4. The 2019 EIR was certified by the Los Angeles County Board of Supervisors on April 30, 2019, but it was subsequently challenged in two separate lawsuits, one of which was brought by Climate Resolve and the other was brought by the Center for Biological Diversity and California Native Plant Society (referred to collectively herein as "CBD/CNPS").

On April 5, 2021, the Los Angeles County Superior Court issued two orders (collectively, the "Court Order"), rejecting all CBD/CNPS and most Climate Resolve arguments that the Centennial EIR was deficient under CEQA. The Court Order specifically upheld almost all components of the EIR's GHG analysis, including by way of example the fact that substantial evidence supported the 2019 EIR's determination that the Approved Project is consistent with Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) adopted by the Southern California Association of Governments (SCAG) to establish a regional land use pattern capable of achieving regional GHG reduction for the land use sector adopted by the California Air Resources Board (CARB). The Court also found that the 2019 EIR use of a service population metric to assess the Approved Project's compliance with statewide GHG reduction targets was supported by substantial evidence. In addition, the Court found that the 2019 EIR did not mislead as to the cumulative effects of GHG emissions and properly explained that carbon emissions caused by the Approved Project's consumption of electricity would be fully offset with an equivalent amount of carbon emission reductions. In addition, the Court upheld the 2019 EIR's calculation of GHG emission reductions associated with the Approved Project's affordable housing commitment and its use of electric vehicles during the project lifetime. Finally, the Court determined that substantial evidence supports the

2019 EIR's calculation of the Approved Project's GHG emissions and GHG emission reductions associated with applicable mitigation measures and Project Design Features.

Although the Court largely upheld the 2019 EIR analysis of the Approved Project potential GHG impacts, it concluded that certain statements in the 2019 EIR were misleading in explaining that the fossil fuel consumption that accounted for approximately 96 percent of the Approved Project's GHG emissions, and more specifically fossil fuels consumed in internal combustion vehicle engines and in the energy used in building and infrastructure systems, were regulated by the state's Cap-and-Trade regulatory program. According to the Court, the Approved Project is not covered by the Cap-and-Trade program and, therefore, the 2019 EIR's discussion of Cap-and-Trade amounted to prejudicial error because Cap-and-Trade does not provide any reduction to the Approved Project's GHG emissions. The Court also determined that, since Cap-and-Trade did not reduce any of the Approved Project's GHG emissions, there was insufficient evidence in the record to support 2019 EIR's determination that additional mitigation measures beyond those identified in the 2019 EIR would exceed the Approved Project's fair share of mitigating a cumulatively significant GHG impact.

Following issuance of the Court Order, but prior to final judgment in the Climate Resolve action, the Approved Project proponent and Climate Resolve entered into a legally enforceable settlement agreement to finally resolve the Climate Resolve litigation (Settlement Agreement). As explained in more detail in Section 2.1.5 below, the Settlement Agreement requires the Approved Project annually eliminate more than three times the annual GHG emissions produced by the Approved Project, as calculated by 2019 EIR and upheld by the Court. Whereas the 2019 EIR determined that 157,642 metric tons of carbon dioxide equivalent per year ($MTCO_2e$/yr) of the Approved Project's GHG emissions would not be directly offset by Project Development Features and required mitigation measures, the Settlement Agreement requires proponents of the Approved Project to ensure 500,000 $MTCO_2e$ in GHG reductions annually through implementation of various GHG reduction measures specified in the Settlement Agreement and described in Section 2.1.5. The Settlement Agreement thus requires that development of the Approved Project result in no net increase of GHG emissions over baseline conditions, as recognized by CARB in its 2022 Scoping Plan.

This section of the SEIR also evaluates the GHG emissions of the Approved Project as modified to add utility-scale battery storage and local microgrid electrical distribution systems to serve the Specific Plan area with renewable energy generated on site (Proposed Modifications). The Proposed Modifications would also open a portion of the existing Cement Road and the entirety of a new Cement Plant Road for public use in order to improve overall fire resiliency. This section also clarifies Chapter 21, Climate Change, of the 2019 EIR to explain that the 2019 EIR was not intended to – and this SEIR does not – rely on compliance with the state's Cap and Trade program to reduce GHG emissions from the Project. Centennial is not a "covered entity" under the Cap-and-Trade regulatory program, and accordingly the Cap-and-Trade program is not used to analyze GHG impacts, reduce GHG impacts, or mitigate GHG impacts, under CEQA. The Cap-and-Trade program is appropriately described in the 2019 EIR's as a GHG regulation in the environmental setting, background, and description of relevant plans, policies and regulations.

3.1.2 BACKGROUND INFORMATION

Global Climate Change

Global climate change is a broad term used to describe any worldwide, long-term change in the Earth's climate. Global climate change refers to an increase in temperatures across the Earth due to human and industrial activity. Climate change, in addition to rising temperatures, can cause other climatic changes, such as a shift in the frequency and intensity of weather events such as rainfall or hurricanes, but it does not necessarily imply that all locations will be warmer. In fact, with global climate change, some locations will have climate patterns that may change in a way that makes the locations colder than average temperatures. As described in the 2019 EIR, the consequences of climate change are expected to manifest in different ways in different locations depending on local and regional factors, such as topography, regional climate, ocean circulation, and land uses.

Climate change is a recorded change in the Earth's average weather measured by variables such as wind patterns, storms, precipitation, and temperature. Historical records show that global temperature changes have occurred naturally in the past, such as during previous ice ages. The years 2016 and 2020 are statistically tied as the Earth's warmest year since 1880, and the 10 warmest years in the instrumental record have now occurred since 2000. The average global temperature has risen about 1.6 degrees Fahrenheit (°F) (0.89 degrees Celsius [°C]) since 1880 (NASA 2023).

The global atmospheric concentration of carbon dioxide (CO_2), the most abundant GHG, has increased from a pre-industrial (roughly 1750) value of about 280 parts per million (ppm) to a seasonally-adjusted 416 ppm in February 2021, primarily due to fossil fuel use, with land use change providing a significant but smaller contribution. The annual concentration of CO_2 has increased at an average rate of 1.6 ppm over the past decades, accelerating to approximately 2.4 ppm annual between 2017 and 2022 (OEHHA 2022).

Greenhouse Gases

GHGs, as defined by the United States Environmental Protection Agency (USEPA) and California Air Resources Board (CARB), include CO_2, methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). GHGs are global pollutants and are therefore unlike criteria air pollutants such as ozone (O_3), particulate matter (respirable particulate matter with a diameter of 10 microns or less [PM10] and fine particulate matter with a diameter of 2.5 microns or less [PM2.5]), and toxic air contaminants (TACs), which are pollutants of regional and local concern (see Section 5.11, Air Resources, of the 2019 EIR). While pollutants with localized air quality effects have relatively short atmospheric lifetimes (generally on the order of a few days), GHGs have relatively long atmospheric lifetimes, ranging from one year to several thousand years. Long atmospheric lifetimes allow for GHGs to disperse around the globe. Therefore, GHG effects are global, as opposed to the local and/or regional air quality effects of criteria air pollutant and TAC emissions.

Global warming potential (GWP) is a term used to indicate, on a pound for pound basis, how much a gas will contribute to global warming relative to how much warming would be caused by the same mass of CO_2. When measuring GWP, CO_2 is considered to have a GWP equal to one. CH_4 and N_2O are substantially more potent than CO_2 with GWPs of 25 and 298, respectively. (Prior values of 21 and 310 were from the Intergovernmental Panel on Climate Change [IPCC] second assessment report; CARB has adopted the current values from the IPCC's fourth assessment report.) Carbon dioxide equivalent (CO_2e) is a quantity that enables all GHG emissions to be considered as a group despite their varying GWP. The GWP of each GHG is multiplied by the quantity of that gas to produce CO_2e.

The Greenhouse Effect

In a greenhouse, sunlight enters through the glass panels, and the heat from the sunlight is then trapped inside the structure. The Earth's atmosphere acts like a greenhouse by allowing sunlight in, but traps some of the heat that reaches the Earth's surface. When solar radiation from the sun reaches the Earth, much of it penetrates the atmosphere and ultimately reaches the Earth's surface. This solar radiation is absorbed by the Earth's surface and is then re-emitted as heat in the form of infrared radiation. Whereas the GHGs in the atmosphere let solar radiation through, GHGs trap infrared radiation, resulting in the overall warming of the Earth's surface.[1] This phenomenon is referred to as the "greenhouse effect".

Concentrations of major greenhouse gases, such as CO_2, CH_4, N_2O, and water vapor (H_2O) have been naturally present for millennia at relatively stable levels in the atmosphere, and act to keep temperatures on Earth hospitable. Without these GHGs, the earth's temperature would be too cold for life to exist. With increased human industrial activity, concentrations of certain GHGs have grown dramatically. In the absence of major industrial human activity, natural processes maintain atmospheric GHG concentrations at relatively stable levels, which have allowed global temperatures to remain at constant levels over the last several centuries. As the concentrations of GHGs have increased as a result of human industrial activity, the amount of infrared radiation that is trapped has increased, thereby increasing the Earth's average temperature.

Summary of 2019 EIR's Analysis of the Approved Project's GHG Impacts

The 2019 EIR's analysis of the Approved Project's GHG emission impacts is set forth in Section 5.21 of the 2019 DEIR and Section 4.3 of Volume 3 of the 2019 FEIR. As discussed in greater detail in Section 2.1.5, the 2019 EIR estimated that the Approved Project would emit approximately 157,642 million metric tons carbon dioxide equivalent per year, after taking into account GHG reductions associated with the implementation of certain Project Design Features, Mitigation Measures and compliance with applicable regulatory requirements. The 2019 EIR analyzed the significance of such emissions under two thresholds of significance. Under Threshold 21-1, the 2019 EIR considered the significance of the Approved Project's GHG emissions by assessing the Approved Project's compliance with various regulatory

[1] Infrared radiation has longer wavelengths than does solar radiation. GHGs reflect radiation with longer wavelengths. As a result, instead of escaping back into space, GHGs reflect much infrared radiation (i.e., heat) back to Earth.

programs designed to reduce GHG emissions and that contribute to the achievement of statewide GHG reduction goals. Under Threshold 21-2, the 2019 EIR considered whether the Approved Project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG. Despite finding that the Approved Project's GHG impacts would be less than significant at a project level under both Thresholds 21-1 and 21-2, the 2019 EIR conservatively determined that the Project's incremental contribution of the global GHG emissions inventory would be a cumulatively considerable impact because it is legally infeasible for the County to enforce statewide compliance with California's statewide GHG regulatory regime. Accordingly, the EIR proposed, and the County ultimately adopted, 48 mitigation measures with which the Approved Project must comply in order to reduce its GHG emissions to the extent feasible.

Green Development Program and Project Design Features

As discussed, the Approved Project includes a Green Development Program included as Appendix 1-B to the Centennial Specific Plan. The Proposed Modifications do not alter the Green Development Program, which will apply to the Approved Project without change. The Approved Project also includes 21 project design features (PDFs) that target GHG reductions related to energy efficiency, vehicle emissions, vehicle trips and vehicle miles traveled, and water supply treatment and distribution, as set forth on 2019 FEIR pages 4-364 through 4-370. The Proposed Modifications do not alter any of these PDFs, which are included as part of, and will be implemented by, the Approved Project without change.

Mitigation Measures Imposed on The Approved Project

Upon certification of the 2019 EIR, twenty two mitigation measures (MMs) were imposed on the Approved Project to reduce GHG emission impacts (i.e., Mitigation Measures MM 21-1 through MM 21-22), as set forth on 2019 FEIR pages 4-419 through 4-427. All of these MMs would continue to apply to the Approved Project if the Proposed Modifications are approved, and none of these MMs are being revised as part of the Proposed Modifications, with the exception of MM 21-20, part 2 of which is being revised to delete all references to the Cap-and-Trade Program for Electricity, Stationary Sources, and Fuels (California Code of Regulations, Title 17, Division 3, Chapter 1, Subchapter 10, Article 5, Section 95801 et seq.) As explained below, the Cap-and-Trade Program does not apply to the Approved Project, with or without the Proposed Modifications, as it is not itself a "covered entity" under the Cap-and-Trade Program.

3.1.3 RELEVANT PLANS, POLICIES, AND REGULATIONS

A description of the many legal requirements applicable to greenhouse gas and climate change are described in Section 5.21.2 of the 2019 FEIR (pages 4-328 through 4-361), which list is supplemented in this regulatory background discussion to provide a summary of those federal, state, regional and local laws and regulations applicable to GHG and climate change that have been adopted or revised since publication of the 2019 EIR.

Many legal requirements applicable to greenhouse gas and climate change continue to be expanded and modified. This subsection presents a summary of international laws (national treaties followed by sub-national agreements), federal laws, regulations and other actions, state laws, regulations, and other actions, and then local (regional and County) laws, regulations and other actions that have been updated or adopted since April 19, 2019.

International

International Treaties and Other Developments

The Paris Agreement was adopted on December 12th, 2015 by 196 parties that pledged to reduce their greenhouse gas emissions. Although the U.S. was originally a party to the agreement, the Trump administration pulled out in 2017. However, on January 20th, 2021, President Biden signed an executive order, reentering the United States in the Paris Agreement.; this reentry went into effect on February 19th, 2021.

The 28th session of the Conference of Parties (COP28) will take place on November 30, 2023 to December 12, 2023, in Dubai, United Arab Emirates. The session will include representatives from 196 parties to the United Nations Framework Convention on Climate Change. Outcomes from COP28 include, but are not limited to, limiting global temperature increase well below 1.5°C; build resilience, and mobile finance at scale. A plan of action focuses on four areas: Fast-track the energy; fix climate finance; focus on nature, people, lives, and livelihoods; and full inclusivity (UNCC 2023).

Federal

April 2007 Supreme Court Ruling

In *Massachusetts et al. vs. Environmental Protection Agency et al.* (April 2, 2007), the U.S. Supreme Court ruled that the USEPA was authorized by the Clean Air Act to regulate CO_2 emissions from new motor vehicles. The Court did not mandate that the USEPA enact regulations to reduce GHG emissions, but found that the only instances in which the USEPA could avoid taking action were if it found that GHGs do not contribute to climate change or if it offered a "reasonable explanation" for not determining that GHGs contribute to climate change.

On December 7, 2009, the USEPA Administrator signed two distinct findings regarding GHGs under Section 202(a) of the Clean Air Act.

- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well-mixed greenhouse gases in the atmosphere —CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed GHGs from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

The findings do not themselves impose any requirements on industry or other entities. However, this action was a prerequisite for implementing GHG emissions standards for vehicles (USEPA 2021). A light-duty vehicle is defined any motor vehicle with a gross vehicle weight of 6,000 pounds or less (CARB 2021a).

Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards

The USEPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) have been working together on developing a National Program of regulations to reduce GHG emissions and to improve the fuel economy of light-duty vehicles. On September 19, 2019, NHTSA and the USEPA issued a final action entitled the "One National Program Rule" (SAFE-1) to enable the federal government to provide nationwide uniform fuel economy and GHG emission standards for automobile and light duty trucks. This action finalized parts of the Safer, Affordable, Fuel-Efficient (SAFE) Vehicles Rule that was first proposed in August 2018. In this proposal, the agencies proposed new and amended GHG and SAFE standards for model year 2021 to 2026 light duty vehicles which were less fuel efficient (USEPA and NHTSA 2019). The SAFE Vehicles Rule lowered the fuel efficiency standards for model years 2021 through 2026 to the 2020 standards of 43.7 miles per gallon (mpg) and 204 grams of CO2 per mile for passenger cars and 31.3 mpg and 284 grams of CO2 per mile for light duty trucks.

As part of the SAFE rule approvals, the USEPA withdrew the Clean Air Act waiver that had been granted to the State of California in January 2013 for the State's Advanced Clean Car program with respect to GHG and Zero Emission Vehicle (ZEV) elements. In November 2019, California, 21 other states, the District of Columbia, and four California cities filed a petition for the USEPA to reconsider SAFE-1. A petition for reconsideration was also filed by several environmental groups. On January 20, 2021, President Biden signed an executive order directing the Government to revise fuel economy standards with the goal of further reducing emissions. On April 22, 2021, the Biden Administration proposed to formally roll back portions of the SAFE Rule, thereby restoring California's right to enforce more stringent fuel efficiency standards.

On April 28, 2021, USEPA published a Notice of Reconsideration: California State Motor Vehicle Pollution Control Standards; Advanced Clean Car Program; Reconsideration of a Previous Withdrawal of a Waiver of Preemption; Opportunity for Public Hearing and Public Comment. The public comment period closed July 6, 2021 (USEPA 2021).

On March 14, 2022, the USEPA determined that the actions taken as a part of SAFE-1 were decided in error and are now entirely rescinded. With this action California's authority under the Clean Air Act (CAA) to implement its own greenhouse gas emission (GHG) emission standards and zero emission vehicle (ZEV) sales mandate is restored (USEPA 2022a).

On April 12, 2023 the EPA proposed more stringent emission standards for light-duty and medium-duty vehicles starting with model year 2027. The proposal builds upon EPA's final standards for federal greenhouse gas emissions standards for passenger cars and light trucks for model years 2023 through 2026 and leverages advances in clean car technology

to unlock benefits to Americans ranging from reducing climate pollution, to improving public health, to saving drivers money through reduced fuel and maintenance costs. The proposed standards would phase in over model years 2027 through 2032. "The proposed standards are projected to result in an industry-wide average target for the light-duty fleet of 82 grams/mile (g/mile) of CO2 in MY 2032, representing a 56 percent reduction in projected fleet average GHG emissions target levels from the existing MY 2026 standards." (Vol. 88 FR 29196). This is a significant improvement in fuel efficiency from the assumptions in the 2019 Centennial DEIR, which assumed "an average industry fleet-wide level of 163 grams per mile in model year 2025." (County of Los Angeles 2019)

It is legally infeasible for individual agencies to adopt more stringent fuel efficiency standards for automobiles. The CAA (42 United States Code [USC] Section 7543[a]) states that "no state or any political subdivision thereof shall adopt or attempt to enforce any standard relating to the control of emissions from new motor vehicles or new motor vehicle engines subject to this part."

Furthermore, the rate of electric vehicle adoption rate is occurring faster than anticipated. California has reached 1.5 million electric vehicle sales 2 years ahead of its planned 2025 target for the sales milestone. At the end of 2023, approximately 25 percent of new car sales in California are electric vehicles (Moseman 2023).

Heavy-Duty Engines and Vehicles Fuel Efficiency Standards

CARB has adopted rules for new diesel trucks and for off-road diesel equipment. Along with rules adopted by the USEPA, these regulations have resulted in substantially more stringent emissions standards for new diesel trucks and new off-road diesel equipment, such as construction vehicles. Haul truck regulations also "mandate fleet turn-over to ensure that by January 1, 2023 nearly all on-road diesel trucks will have 2010 model year engines or equivalent [i.e. Tier 4]. (Cal. Code Regs., tit. 13, § 1956.8.) Tier 4 Final standards are required for new off-road engines, depending on engine size, for all model years starting in 2014 or 2015. Compared to Tier 4 Interim standards, Tier 4 Final standards are about 80 percent more restrictive for NOx emissions and 30 percent more restrictive for particulate matter emissions. As a result, use of engines that meet the Tier 4 Final standards would reduce exhaust emissions of NOx by approximately 80 percent and reduce diesel exhaust emissions of particulate matter by approximately 30 percent compared to new engines produced under Tier 4 Interim standards.

On December 20th, 2022, the USEPA adopted a final rule "Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards" that sets stronger emissions standards to further reduce air pollution, including pollutants that create ozone and particulate matter, from heavy-duty vehicles and engines starting in model year 2027 (USEPA 2022).

Strengthening American Leadership in Clean Cars and Trucks

On August 5th, 2021, President Biden signed an Executive order on Strengthening American Leadership in Clean Cars and Trucks. The Executive Order sets a goal that 50 percent of all new passenger cars and light trucks sold in 2030 be zero-emission vehicles, including battery electric, plug-in hybrid electric, or fuel cell electric vehicles.

Council on Environmental Quality National Environmental Policy Act Guidelines on Greenhouse Gasses

On January 9, 2023, the White House Council on Environmental Quality (CEQ) issued interim guidance to assist agencies in analyzing greenhouse gas and climate change effects of their proposed actions under the National Environmental Policy Act and requested public comment on the guidance. The Public Comment period ended on April 10, 2023. The interim GHG guidance builds upon and updates CEQ's 2016 Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews ("2016 GHG Guidance"), highlighting best practices for analysis grounded in science and agency experience.

State

Assembly Bill 1842

California's 2021 Climate Adaptation Strategy, mandated by AB 1482, links together existing and planned climate adaptation efforts, and demonstrates how they will work together to achieve California's climate resilience priorities. These priorities include the following: strengthen protections for climate vulnerable communities, bolster public health and safety to protect against increasing climate risks, build a climate resilient economy, accelerate nature-based climate solutions and strengthen climate resilience of natural systems, make decisions based on the best available climate science, and partner and collaborate to leverage resources.

Assembly Bill 32 and Senate Bill 32 (Statewide GHG Reductions)

The California Global Warming Solutions Act of 2006 (AB 32) was signed into law in September 2006 after considerable study and expert testimony before the Legislature (California 2006a). The law instructs CARB to develop and enforce regulations for the reporting and verifying of statewide GHG emissions. The Act directed CARB to set a GHG emission limit based on 1990 levels, to be achieved by 2020. The bill set a timeline for adopting a scoping plan for achieving GHG reductions in a technologically and economically feasible manner.

The heart of the bill is the requirement that statewide GHG emissions be reduced to 1990 levels by 2020. Based on CARB's calculation of 1990 baseline emissions levels, California must reduce GHG emissions by approximately 28.5 percent below "business-as-usual" predictions of year 2020 GHG emissions to achieve this goal. The bill requires CARB to adopt rules and regulations in an open public process to achieve the maximum technologically

feasible and cost-effective GHG reductions. Key AB 32 milestones for CARB's actions include the following:

- **June 30, 2007.** Identification of discrete early action GHG emissions reduction measures. On June 21, 2007, CARB satisfied this requirement by approving three early action measures (CARB 2007a). These were later supplemented by adding six other discrete early action measures (CARB 2007b).
- **January 1, 2008.** Identification of the 1990 baseline GHG emissions level; approval of a statewide limit equivalent to that level; and adoption of reporting and verification requirements concerning GHG emissions. On December 6, 2007, CARB approved a statewide limit on GHG emissions levels for the year 2020 consistent with the determined 1990 baseline (CARB 2007c).
- **January 1, 2009.** Adoption of the Scoping Plan for achieving GHG emission reductions. On December 11, 2008, CARB adopted *Climate Change Scoping Plan: A Framework for Change* (Scoping Plan), discussed in more detail below (CARB 2008).
- **January 1, 2010.** Adoption and enforcement of regulations to implement the "discrete" actions. Several early action measures have been adopted and became effective on January 1, 2010 (CARB 2007a, 2007b).
- **January 1, 2011.** Adoption of GHG emissions limits and reduction measures by regulation. On October 28, 2010, CARB released its proposed cap-and-trade regulations, which would cover sources of approximately 85 percent of California's GHG emissions. On October 20, 2011, the Board adopted the final cap-and-trade regulation. The final rulemaking packing was approved by the Office of Administrative Law (OAL) on December 14, 2011, with an effective date of January 1, 2012 (CARB 2011).
- **January 1, 2015.** Cap-and-trade compliance obligations were phased in for suppliers of natural gas, reformulated gasoline blendstock for oxygenate blending (RBOB), distillate fuel oils, and liquefied petroleum gas, with emissions that meet or exceed specified emissions thresholds. Emission offsets are allowed for up to eight percent of a facility's compliance obligation. According to the 2016 California Climate Investments Annual Report, $2.6 billion from the Greenhouse Gas Reduction Fund has been appropriated to State agencies, and $1.7 billion has been awarded to projects (CARB 2016). CARB has confirmed that the Cap-and-Trade program will continue to be administered after 2020.

As noted above, on December 11, 2008, CARB adopted the Scoping Plan to achieve the goals of AB 32. The Scoping Plan establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. The Scoping Plan outlines the reduction of GHG emissions of approximately 28.5 percent below "business as usual" conditions). The Scoping Plan evaluates opportunities for sector-specific reductions; integrates all CARB and Climate Action Team early actions and additional GHG reduction measures by both entities;

identifies additional measures to be pursued as regulations; and outlines the role of a cap-and-trade program. The key elements of the Scoping Plan (CARB 2008) include:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a statewide renewables energy mix of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system and caps sources contributing 85 percent of California's GHG emissions;
- Establishing targets for transportation-related GHG emissions for regions throughout California, and pursuing policies and incentives to achieve those targets;
- Adopting and implementing measures pursuant to existing State laws and policies, including California's clean car standards, goods movement measures, and the Low Carbon Fuel Standard; and
- Creating targeted fees, including a public goods charge on water use, fees on high global warming potential gases, and a fee to fund the administrative costs of the State of California's long-term commitment to AB 32 implementation.

In 2009, a coalition of environmental groups brought a challenge to the Scoping Plan alleging that it violated AB 32 and that the environmental review document (called a "Functional Equivalent Document" [FED]) violated CEQA by failing to appropriately analyze alternatives to the proposed cap-and-trade program. On May 20, 2011, the San Francisco Superior Court entered a final judgment in favor of the coalition and ordered that CARB take no further action with respect to cap-and-trade rulemaking until it complies with CEQA by properly analyzing alternatives in its FED to cap and trade (California 2011). CARB appealed the decision on May 23, 2011 (Climate Case 2023). The Appellate Court stayed the Superior Court's injunction on June 3, 2011. The portions of the Scoping Plan that do not relate to cap and trade remain valid under the Court's judgment. On June 19, 2012, the California First District Court of Appeal upheld the Scoping Plan and affirmed CARB's approval of the Scoping Plan as in compliance with AB 32.

CARB approved the final "First Update to the Climate Change Scoping Plan" on May 22, 2014. The first update describes California's progress towards AB 32 goals, stating that "California is on track to meet the near-term 2020 greenhouse gas limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32". Specifically, "if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts [MW] of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80 percent below 1990 levels by 2050" (CARB 2014). This first update retains from the October 2013 draft the recalculated 1990 GHG emissions level of 431 $MMTCO_2e$, as well as the 509 $MMTCO_2e$ 2020 "business as usual" or NAT condition (CARB 2014). Thus, under CARB's most current document, reducing the "business as usual" or NAT condition of 509 $MMTCO_2e$ to the 1990 emissions level of 431 $MMTCO_2e$ will require

a reduction of 78 MMTCO_2e, or approximately a 15.3 percent reduction (compared to a 28.5 percent reduction as set forth in the original Scoping Plan but not directly comparable because of the change in methodology). The State of California achieved its 2020 GHG emission reduction targets as emissions fell below 431 MMT of CO2e.

Senate Bill (SB) 32 became effective on January 1, 2017 and requires CARB to develop technologically feasible and cost-effective regulations to achieve by 2030 the targeted 40 percent GHG emission reduction set in EO B-30-15. In response, CARB prepared a second update to the Scoping Plan to reflect the 2030 target established in Executive Order B-30-15 and in AB 32. The Final Proposed 2017 Scoping Plan was published in November 2017, and the third public Board Meeting for the Proposed Scoping Plan was held on December 14, 2017, where the Final Proposed 2017 Climate Change Scoping Plan (Second Update to the Climate Change Scoping Plan, or 2017 Scoping Plan Update) was adopted. The 2017 Scoping Plan Update included new statutory GHG reduction requirements that were not included in the previous Scoping Plan, including Senate Bill 32 (discussed below) which sets a 40 percent GHG reduction target below 1990 GHG levels to be achieved by 2030, SB 350 (which sets a 50 percent reduction in GHG emissions from electricity generation and other energy uses in existing structures, and a 50 percent renewable energy portfolio requirement), and SB 650 (which establishes priority GHG reduction targets for designated types of greenhouse gases such as methane). The key elements of the 2017 Scoping Plan Update called for further GHG reductions from the refinery sector specifically, further reductions from other stationary sources through either a renewed and expanded cap and trade or carbon tax program, further reductions from other sectors such as transportation technologies and services, water and solid waste conservation and management, and land uses in both open space and urban areas (CARB 2017).

In December 2022, CARB adopted the 2022 Scoping Plan Update which assesses progress towards achieving carbon neutrality by 2045 or earlier through the reduction of emissions by 85 percent below 1990 levels. The Scoping Plan takes an aggressive approach to decreasing fossil fuel use and decarbonization of every sector of emissions. Measures include moving to zero-emission transportation, phasing out the use of fossil fuel gas used for heating, reduction in the use of chemicals and refrigerants with high global warming potential, development of sustainable infrastructure that provides opportunities for walking, biking and public transit to reduce reliance on automobiles, and development of renewable energy (CARB 2022).

Senate Bill 375 (Land Use Planning)

SB 375 became law on (date) and it provides for a new planning process to coordinate land use planning, regional transportation plans, and funding priorities in order to help California meet the GHG reduction goals established in AB 32 (California 2008b). SB 375 requires Metropolitan Planning Organizations (MPOs) relevant to the Project area (including SCAG) to incorporate a "sustainable communities strategy" (SCS) in their regional transportation plans (RTPs) that will achieve GHG emission reduction targets set by CARB. SB 375 also includes provisions for streamlined CEQA review for some infill projects such as transit-oriented development. SB 375 will be implemented over the next several years.

SB 375 is similar to the Regional Blueprint Planning Program, established by the California Department of Transportation, which provides discretionary grants to fund regional transportation and land use plans voluntarily developed by MPOs working in cooperation with Councils of Governments. On April 22, 2009, the Metropolitan Transportation Commission (MTC) adopted the 2009 Regional Transit Plan (RTP) with AB 32 goals in mind. The 2012 RTP was SCAG's first plan subject to SB 375. The Scoping Plan, adopted by CARB in December of 2008, relies on the requirements of SB 375 to implement the carbon emissions reductions anticipated from land use decisions.

SB 375 also required CARB to appoint a Regional Targets Advisory Committee (RTAC) to recommend factors for CARB to consider and methodologies for it to use in setting GHG emission reduction targets for each region. The RTAC must include representation from the League of California Cities, the California State Association of Counties, MPOs, developers, planning organizations, and other stakeholders. In January 2009, CARB appointed 21 members to the RTAC. On September 29, 2009, the RTAC released its recommendations to CARB, representing a key step in the establishment of regional targets for inclusion in sustainable community strategies (RTAC 2009). The RTAC recommendations focus largely on the manner in which CARB staff should interact with various stakeholders during the target-setting process, and how staff should use empirical studies and modeling in establishing regional GHG targets.

Following the release of RTAC's recommendations, CARB began the process of developing regional GHG reduction targets (Regional Targets) for the State's MPOs. On September 23, 2010, CARB adopted Regional Targets applying to the years 2020 and 2035 (CARB 2011b). For the area under SCAG's jurisdiction—including the Project area—CARB adopted Regional Targets of 8 percent for 2020 and 13 percent for 2035. On February 15, 2011, the CARB's Executive Officer approved the final targets (CARB 2023b). CARB filed a Notice of Decision two days later on February 17, 2011 (CARB 2011b). SB 150 requires that CARB prepare a progress report every four years to discuss progress related to SB 375. This progress report uses data-supported metrics to assess progress on transportation, housing, and land use strategies, identifies best practices and challenges to achieving greater reductions, and discusses the impact of State policies and funding. The latest progress report was published on June 8, 2022.

Title 24 California Code of Regulations

Title 24 of the California Code of Regulations requires California homes and businesses to meet strong energy efficiency measures, thereby lowering their energy use. Title 24 contains numerous subparts, including Part 1 (Administrative Code), Part 2 (Building Code), Part 3 (Electrical Code), Part 4 (Mechanical Code), Part 5 (Plumbing Code), Part 6 (Energy Code), Part 8 (Historical Building Code), Part 9 (Fire Code), Part 10 (Existing Building Code), Part 11 (Green Building Standards Code), Part 12 (Referenced Standards Code). The California Building Code is applicable to all development in California. (Health and Safety Code §§ 17950 and 18938(b).) Updated every three years through a rigorous stakeholder process, The regulations receive input from members of industry, as well as the public, with the goal of "[r]educing of wasteful, uneconomic, inefficient, or unnecessary consumption of energy." (Pub. Res. Code § 25402.) These regulations are carefully scrutinized and analyzed for

technological and economic feasibility (Pub. Res. Code § 25402(d)) and cost effectiveness (Pub. Res. Code § 25402(b)(2) and (b)(3)).

Energy Efficiency Standards

The Energy Efficiency Standards for Residential and Non-residential Buildings (24 CCR, Part 11) were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The currently applicable standards are the 2022 Title 24 Standards, effective January 1, 2023 (CBSC 2022). The 2022 Title 24 Standards focus on four key areas: smart residential photovoltaic systems, updated thermal envelope standards (preventing heat transfer from the interior to exterior and vice versa), residential and nonresidential ventilation requirements, and non-residential lighting requirements.

Starting in 2020, the California Energy Code was revised to require solar, and the 2022 Code now requires: "All single-family residential buildings shall have a newly installed photovoltaic (PV) system or newly installed PV modules meeting the minimum qualification requirements specified in Joint Appendix JA11." (Cal. Code Regs., tit. 24, Part 6, § 150.1(c)(14).) The California Energy Code was further updated in 2022 to require solar for multifamily buildings, and energy storage for structures greater than three habitable stories. (Cal. Code Regs., tit. 24, Part 6, § 170.2(f), (g), (h).) Similarly, solar photovoltaics and energy storage are now required for grocery stores, offices, financial institutions, unleased tenant space, retail, schools, warehouses, auditoriums, convention centers, hotels/motels, libraries, medical office buildings/clinics, restaurants, theaters, and mixed-use buildings where one or more of these building types constitute at least 80 percent of the floor area. (Cal. Code Regs., tit. 24, Part 6, § 140.10(a).)

Title 24 also requires ventilation measures to improve indoor air quality, protecting homeowners from air pollution originating from outdoor and indoor sources (CEC 2022). The requirements of the energy efficiency standards result in the reduction of natural gas and electricity consumption. Both natural gas and electricity use produce GHG emissions. The goal of the standards is to reduce energy use in new homes by more than 50 percent.

To address GHG emissions, the California Energy Commission (CEC) first adopted the 2008 changes to the Building Energy Efficiency Standards in order to (1) "Provide California with an adequate, reasonably-priced, and environmentally-sound supply of energy" and (2) "Respond to Assembly Bill 32, the Global Warming Solutions Act of 2006, which mandates that California must reduce its GHG emissions to 1990 levels by 2020". Additionally, it has been California policy that all new residential buildings will be zero net energy (ZNE) by 2020, and new commercial buildings will be ZNE by 2030, as described in the 2008 California Public Utilities Commission (CPUC) long-term energy efficiency strategic plan. The 2022 Title 24 Energy Efficiency Standards establish building design and construction requirements that move closer to achieving California's ZNE goals through encouragement of energy efficient heat pumps, electric-ready alternatives to use of natural gas, electric vehicle charging options, renewable energy generation and electricity storage, as well improving indoor air quality through ventilation standards. The requirements of the energy efficiency standards result in the reduction of natural gas and electricity consumption. Both natural gas use and electricity generation result in GHG emissions.

Title 24 Green Building Standards

The 2022 California Green Building Standards Code (24 CCR, Part 11), also known as the CALGreen code, contains mandatory requirements and voluntary measures for new residential and nonresidential buildings (including buildings for retail, office, public schools and hospitals) throughout California) (CBSC 2022). The development of the CALGreen Code is intended to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the following construction practices: (1) planning and design; (2) energy efficiency; (3) water efficiency and conservation; (4) material conservation and resource efficiency; and (5) environmental quality. In short, the code is established to reduce construction waste; make buildings more efficient in the use of materials and energy; and reduce environmental impact during and after construction.

Executive Order S-01-07 and the Low Carbon Fuel Standard

Executive Order S-01-07 (January 18, 2007) requires a ten percent or greater reduction (from current transportation fuels) in the average fuel carbon intensity for CARB-regulated transportation fuels in California (California 2007a). CARB identifies the Low Carbon Fuel Standard (LCFS) as a Discrete Early Action item under AB 32.

In 2009, CARB approved for adoption the LCFS regulation, which became fully effective in April 2010 and is codified in the *California Code of Regulations* (CCR, specifically Title 17, Sections 95480–95490). The LCFS will reduce greenhouse gas emissions by reducing the carbon intensity of transportation fuels used in California by at least 10 percent by 2020. Carbon intensity is a measure of the GHG emissions associated with the various production, distribution, and use steps in the "lifecycle" of a transportation fuel. Following a federal lawsuit challenging the LCFS, on September 25, 2015, CARB re-adopted the LCFS regulation (CARB 2015). In 2018, the Board approved amendments to the regulation, which strengthened carbon intensity benchmarks through 2030, in-line with California's GHG target enacted through SB32 (CARB 2020).

Assembly Bill 1826 and Senate Bill 1383

In October 2014 Governor Brown signed AB 1826 Chesbro (Chapter 727, Statutes of 2014), requiring businesses to recycle their organic waste on and after April 1, 2016, depending on the amount of waste they generate per week. This law also required that on and after January 1, 2016, local jurisdictions across the state implement an organic waste recycling program to divert organic waste generated by businesses, including multifamily residential dwellings that consist of five or more units (however, multifamily dwellings were not required to have a food waste diversion program). Organic waste (also referred to as organics) means food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled paper waste that is mixed in with food waste. This law phased in the mandatory recycling of commercial organics over time. In particular, the minimum threshold of organic waste generation by businesses decreases over time, which means an increasingly greater proportion of the commercial sector would be required to comply (CalRecycle 2023).

SB 1383 went into effect on January 1, 2022 with the goal of reducing emissions of short-lived climate pollutants. SB 1383 expands upon the requirements set forth by AB 1826. Specifically, the law sets the following goals:

- By 2025, reduce the amount of compost materials disposed in landfills by 75%.
- By 2025, rescue at least 20% of edible food currently disposed for human consumption.

The Senate Bill applies to all residents (single-family homes and apartments/condos), businesses, education agencies, and non-local entities (special districts, state/federal facilities, and prisons).

Senate Bill 391 and California Transportation Plan 2050

On October 11, 2009, Governor Brown signed into law SB 391, which directs the California Department of Transportation (Caltrans) to update the California Transportation Plan to address how the state will achieve maximum feasible emissions reductions in order to attain a statewide reduction of GHG emissions to 1990 levels by 2020 and 80 percent below 1990 levels by 2050. Per SB 391, the California Transportation Plan update must be adopted by December 31, 2015 and updated every five years thereafter. Pursuant to SB 391, in February 2021, Caltrans adopted California Transportation Plan 2050 (CTP 2050), which provides a long-range policy framework to meet future statewide mobility needs and reduce greenhouse gas emissions for the transportation sector. The CTR provides a common framework for guiding transportation decisions and investments by all levels of government and the private sector (Caltrans 2023).

Senate Bills 1078, 107, and SBX1-2 (Renewable Portfolio Standards)

Established in 2002 under SB 1078, accelerated in 2006 under SB 107, and again in 2011 under SBX1-2, California's Renewable Portfolio Standard (RPS) requires retail sellers of electric services to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020. Initially, the Renewable Portfolio Standard provisions applied to investor -owned utilities, community choice aggregators, and electric service providers. SBX1-2 added, for the first time, publicly owned utilities to the entities subject to RPS.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100, the 100 Percent Clean Energy Act of 2018. SB 100 requires renewable energy and zero-carbon resources to supply 100 percent of electric retail sales to end-use customers and 100 percent of electricity procured to serve state agencies by December 31, 2045. This policy requires the transition to zero-carbon electric systems that do not cause contributions to increase of GHG emissions elsewhere in the western electricity grid (CEC 2021). SB 100 also creates new standards for the RPS goals established by SB 350 in 2015. Specifically, the bill increases required energy from

renewable sources for both investor-owned utilities and publicly owned utilities from 50 percent to 60 percent by 2030.

Executive Order B-55-18

On September 10, 2018, Governor Brown also signed California EO B-55-18, which sets a new statewide goal of carbon neutrality as soon as possible, and no later than 2045, and achieve net negative emissions thereafter. EO B-55-18 was added to the existing Statewide targets of reducing GHG emissions, including the targets previously established by Governor Brown of reducing emissions to 40 percent below 1990 levels by 2030 (EO B-30-15 and SB 32), and by Governor Schwarzenegger of reducing emissions to 80 percent below 1990 levels by 2040 (EO S-3-05).

Regional

Southern California Association of Governments

As described above, SB 375 requires the MPOs to prepare a Sustainable Communities Strategy (SCS) in their regional transportation plan. The Court Order concluded that the Centennial Project is consistent with the SCAG's 2016-2040 Regional Transportation Plan/Sustainable Communities Strategy ("2016 RTP/SCS"), which determination was not appealed. In September 2020, SCAG adopted its 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy ("2020 RTP/SCS"), which superseded the 2016 RTP/SCS and would reduce regional per capita transportation emissions 19 percent by 2035 relative to 2005, the regional GHG reduction target set by CARB. As with the 2016 RTP/SCS, the Centennial Project is included in the 2020 RTP/SCS. Subsequently, in April 2024, SCAG adopted its 2024-2050 Regional Transportation Plan/Sustainable Communities Strategy ("2024 RTP/SCS"), which superseded the 2020 RTP/SCS and is also expected to achieve CARB's regional GHG reduction target for transportation emissions of 19 percent by 2035 relative to 2005 (SCAG 2024a). Like the 2020 RTP/SCS, the 2024 RTP/SCS includes Mobility, Goods Movement, Housing and Land Use, System Preservation & Resilience, and Transit Backbone components. Like the 2016 RTP/SCS and 2020 RTP/SCS, the 2024 RTP/SCS includes the Approved Project's unit count and square footage in its land use assumptions.

Local – Los Angeles County

Los Angeles County General Plan Air Quality Element and Los Angeles County Community Climate Action Plan

As discussed above, CARB encourages local governments to adopt a reduction goal for municipal operations emissions and move toward establishing similar goals for community emissions that parallel the state's commitment to reduction GHG emissions.

On June 25, 2024, the Los Angeles County Board of Supervisors approved a resolution updating Chapter 8, Air Quality Element, of the Los Angeles County 2035 General Plan. The updated Air Quality Element summarizes air quality issues affecting the County and outlines

goals and policies to be implemented to improve air quality and reduce greenhouse emissions. The Air Quality Element's new policies include AQ Policy 3.1, which states as follows:

> *Facilitate the implementation and maintenance of the Climate Action Plan through future County programs to ensure that the County reaches its climate action and greenhouse gas emission reduction goals, and consider projects with an enforceable legal obligation to achieve "net zero" greenhouse gas (GHG) emissions, including by voluntary agreement to resolve litigation or with a government agency, to help the County achieve the long-term goals of the CAP.*

The *Los Angeles County Climate Action Plan (CCAP) 2020* was adopted on October 15th, 2020 (Los Angeles County 2015) as a subcomponent of the Air Quality Element of the Los Angeles County General Plan 2035. The CCAP provided a community-wide emissions inventory for 2015 and set new reduction targets to address statewide GHG goals beyond 2020. The 2020 CCAP aligned with General Plan goals, policies, and programs and several other existing programs in Los Angeles County. It identified emissions related to community activities, established a 2020 GHG emissions reduction target consistent with Assembly Bill (AB) 32, and established 26 local actions for GHG emissions reduction. The 2020 CCAP was the first attempt to set Countywide GHG emissions reduction goals, providing a road map for implementing the County GHG emissions reduction measures. The 2020 CCAP addressed emissions from land use, transportation, building energy, water consumption, and waste generation. The trial court determined in its Order that the Approved Project was consistent with the CCAP, and this determination was not appealed.

The Los Angeles County Board of Supervisors approved the 2045 CAP on June 25, 2024 (2045 CAP). The 2045 CAP replaces the 2020 CCAP. The Air Quality Element describes the 2045 CAP as sub element that supplements the Air Quality Element and implements the GHG emissions reduction policies of the Air Quality Element. The 2045 CAP is LA County's path toward meeting the goals of AB 1279 and achieving carbon neutrality for unincorporated areas of the County. The 2045 CAP is not a regulatory document. Rather, the 2045 CAP provides a policy framework to guide future County actions, so that the County can reach its emissions reduction targets. The County recognizes that its GHG reduction goals cannot be achieved by individual projects alone, but instead requires a comprehensive Countywide approach that would include the enactment of future plans, changes to existing ordinances, and an integrated and sustainable approach. The goals in the 2045 CAP are Countywide, not requirements or mandates for individual, private development projects, unless and until CAP measures are adopted through appropriate legal processes, such as the adoption of ordinances applicable to private projects.

Los Angeles County Green Building Standards Code (Title 31)

The 2023 County of Los Angeles Green Building Standards Codes is part 11 of 13 of the latest triennial compilation of adoptions, amendments and repeals of administrative regulations to the California Code of Regulations, Title 24, which is also referred to as the California Building Standards Code. The Board of Supervisors adopted the Los Angeles County Green

Building Standards Code (Title 31) in response to the mandates set forth in the CALGreen Code. The purpose of Title 31 is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts that have a reduced negative impact or positive environmental impact and that encourage sustainable construction practices in planning and design; energy efficiency; water efficiency and conservation; material conservation and resource efficiency; and environmental air quality (Title 31 of the Los Angeles County Code).

Los Angeles County Zero Waste Plan

On September 13, 2022, the Los Angeles County Board of Supervisors adopted the Zero Waste Plan (Los Angeles County 2022b). This Plan outlines the strategies and initiatives to reduce the amount of waste going to landfills and the greenhouse gas emissions created by landfill waste. The Zero Waste Plan first began as the Roadmap to a Sustainable Waste Management Future which was adopted by the Board of Supervisors in October 2014. This Plan establishes diminishing amounts of solid waste going to landfills over time with no more than 3 pounds per person going to landfills in 2025 and to no more than 0.75 pounds by 2045 with the remainder of waste being diverted. Measures are centered on three focus areas which include Regional/County wide, County Unincorporated Communities, and County Operations.

3.1.4 ENVIRONMENTAL SETTING

Global, National, State, and Regional Contributions to GHG Emissions

Table 3.1-1 compares the magnitude of GHG emissions on the global, national, State, and regional (i.e., Los Angeles County) scales.

TABLE 3.1-1
COMPARISON OF WORLDWIDE GHG EMISSIONS

Area and Data Year	Annual GHG Emissions ($MMTCO_2e$)
World (2020)	47,500
United States (2021)	6,340.2
California (2020)	369
Los Angeles County, Unincorporated (2010)	5.2
$MMTCO_2e$: million metric tons of carbon dioxide equivalent Source: WRI 2023; USEPA 2023; CARB 2015c; DRP 2015a.	

The U.S. contributes approximately 13.3 percent of worldwide GHG emissions per year; California contributes approximately 0.8 percent; and the unincorporated portion of the County contributes approximately 0.01 percent. CO_2 constitutes approximately 79 percent of all GHG emissions in the U.S. The primary contributors to California GHG emissions are (1) transportation; (2) industrial uses; and (3) electric power production from both in-state

and out-of-state sources. [The primary contributors to unincorporated County GHG emissions are (1) transportation (52 percent); and stationary (33 percent).

Project Site GHG Emissions

The Project site is currently undeveloped and used primarily for livestock grazing. Of the 12,323 acres of land comprising the Project site, approximately 10,950 acres (89 percent) are currently used for cattle grazing. Existing GHG emissions from the Project site occur from enteric fermentation (cattle digestive processes), which primarily produces CH_4, and from vehicles used on the property for grazing management. The extensive vegetation on the Project site sequesters CO_2, thereby reducing GHG emissions attributed to the existing condition. A portion of State Route (SR) 138 extends through the Project site, and vehicles traveling that roadway do emit GHGs. However, for the purposes of this analysis, the emissions generated by existing SR 138 vehicle trips are not quantified as Project site emissions because they are not associated with activities at the site.

Local Climate Change Effects

The focus of CEQA's GHG analyses has been upon the scope of the Project's GHG emissions, rather than a detailed analysis of the consequences of climate change. This approach is consistent with the 2009 Statement of Reasons for Regulatory Action in Implementing SB 97, which explain that "[S]ome comments submitted to OPR during its public workshops indicated that the Guidelines should be addressed to 'Climate Change' rather than just the effects of GHG emissions. The focus in the Guidelines on GHG emissions is appropriate." For informational purposes, the following is a brief description of potential localized adverse effects is provided based on the most recent assessment for the region included in California's Fourth Climate Change Assessment (2018), as described in the 2045 CAP, and include warming and extreme heat, drought and precipitation, wildfire, sea level rise, and ocean acidification. These localized adverse effects vary based different predictions of global GHG emissions, and on the extent to which climate change impacts occur based on modeled scenarios. For example, as noted in the 2045 CAP, "[s]ea levels are projected to rise roughly 1-2 feet by mid-century and by as much as 8-10 feet by the end of the century based on the most extreme climate impact projections."

Large increases in global GHG concentrations could have substantial adverse effects on natural and human environments in the unincorporated areas. Current research efforts coordinated through the CARB and other State agencies examine the specific changes to California's climate that will occur as Earth's surface warms. California's *2012 Vulnerability and Adaptation Study* (CNRA 2012), the State's third major assessment on climate change, examines local and statewide vulnerabilities to climate change and includes new data and projections on climate changes in California. Dr. Alex Hall, from the University of California, Los Angeles (UCLA), in partnership with the Los Angeles Regional Collaborative for Climate Action and Sustainability (LARC), recently published several studies that develop climate change predictions that are specific to the greater Los Angeles area. These studies indicate that if GHG emissions continue to increase globally based on current trends, climate change could impact the natural environment in the following ways:

Increases in Ambient Temperatures: On average, the Los Angeles region is expected to warm 4 to 5°F over land by mid-century. The coasts and oceans will likely warm the slowest, whereas the mountains and deserts will experience more rapid warming. Warming across the region will be greatest in the summer and fall. For the unincorporated areas in particular, UCLA's high emissions modeling scenario predicts that mountain and inland areas may warm up to or greater than 4.5°F, and coastal and valley/urban areas warming up to 3.7 to 3.9°F.

Increases in Extreme Heat Conditions: Heat waves and very high temperatures could last longer and become more frequent. The number of extreme heat days is expected to triple in the coastal and central areas; the San Fernando Valley and San Gabriel Valley will witness almost a quadrupling of heat days. The number of extreme heat days in the desert and mountain areas will increase five to six times relative to the current amounts. For the unincorporated areas in particular, UCLA's high emissions modeling scenario predicts a nearly 12-fold increase in the number of heat days.

Decreased Snowfall and Winter Snowpack: The region's mountains could see a 42 percent reduction in annual snowfall by mid-century. The winter snowpack is also expected to melt 16 days earlier as a result of rising temperatures. As of March 2014, California is facing a severe drought and the snowpack in the Sierra Nevada is 12 percent of the annual average (DWR 2014). Changes in snowfall could exacerbate drought-like conditions, reducing water supplies and water security for all end users throughout the County.

Increased Frequency, Intensity, and Duration of Extreme Storms: Changes in storm events could create conditions that are conducive to air pollution formation, which further exacerbates air quality issues. Increased winter storm events could also affect peak stream flows and flooding as well as landslides.

Changes in Growing Season and Species Distribution: Changes in growing season conditions could cause variations in crop quality and yield. Plant and wildlife distributions may also be affected by changes in temperature, competition from colonizing species, regional hydrology, sea level, and other climate-related effects.

Rising Sea Levels: Sea levels are expected to steadily rise by mid-century, which could inundate portions of the coastline.

3.1.5 ENVIRONMENTAL IMPACTS

The 2019 EIR's Analysis of the Approved Project's GHG Impacts

The 2019 EIR's significance thresholds, methodology, and analysis of the Approved Project's GHG emission impacts is set forth in Section 5.21 of the 2019 DEIR and Section 4.3 of Volume 3 of the 2019 FEIR. Because the topic of climate change is most appropriately considered on a cumulative level, the impact analysis in the 2019 EIR and in this EIR section is fundamentally a cumulative analysis.

The 2019 DEIR calculated GHG emissions by using the California Emissions Estimator Model (CalEEMod) Version 2016.3.1 and various construction and operational inputs described in DEIR Sections 5.11 and 5.21. The 2019 DEIR estimated that the Approved Project at buildout in 2035 would have GHG emissions of approximately 244,379 metric tons of carbon dioxide equivalent per year ($MTCO_2e/y$), as shown in 2019 DEIR Table 5.21-1. Details of the methodology used to calculate the Approved Project's GHG emissions are described in section 5.21.6 of the 2019 DEIR.

The Approved Project's GHG emissions were refined in the 2019 FEIR by taking into account GHG legal reduction mandates that were not in effect when the 2019 DEIR GHG emissions were calculated, more advanced GHG quantification methodologies, including new versions of GHG emissions models, and the quantification of GHG emissions from Project mitigation measures that reduce GHG emissions (Updated GHG Calculations). Details of the methodology used to generate the Updated GHG Calculations are set forth in the expert report titled *Updated Greenhouse Gas Calculations for the Centennial Project*, dated August 13, 2018, which is included as an attachment to the *Conformed and Annotated Draft EIR Section 5.21* set forth in Section 4.3 of Volume 3 of the 2019 FEIR.

The 2019 FEIR's Updated GHG Calculations determined that the Approved Project would emit approximately 157,642 $MTCO_2e$ of GHG per year, a reduction of -86,736 $MTCO_2e/y$ (approximately 35 percent) from the 2019 DEIR quantified GHG emissions of 244,379 $MTCO_2e/y$. The Updated GHG Calculations were determined to be supported by substantial evidence in the April 5, 2020 order issued by the Los Angeles County Superior Court in the Climate Resolve litigation. Table 3.1-2 compares the 2019 DEIR quantified GHG emissions with the results of the Updated GHG Calculations described in Section 4.3 of Volume 3 of the 2019 FEIR.

TABLE 3.1-2
2019 DEIR QUANTIFIED GHG EMISSIONS AND UPDATED GHG CALCULATIONS ($MTCO_2E$/YEAR)

GHG Emission Sources	2019 DEIR Quantified GHG Emissions	Reductions		Net Change in GHG Emissions	2019 FEIR GHG Calculations
		From Regulations and CalEEMod Update	*From Mitigation Measures*		
Mobile	160,904	-52,694[a]	-31,203[b]	-83,897	77,007
Energy	49,414	5,584	50	5,634	55,047
Electrical Power	*23,276*	*5,806*[c]	*50*[d]	*5,856*	*29,132*
Natural Gas	*26,137*	*-222*	*0*	*-222*	*25,915*
Water and Wastewater	7,387	0	-3,184[e]	-3,184	4,203
Solid Waste	10,214	-5,107[f]	0	-5,107	5,107
Area	11,297	0	-74[g]	-74	11,223
Construction	4,490	0	0	0	4,490
Vegetation	673	-108[h]	0	-108	565
Total Emissions	**244,379**	**-52,324**	**-34,412**	**-86,736**	**157,642**

Sources: 2019 DEIR Quantified GHG Emissions from 2019 DEIR Section 5.21; Updated GHG Calculations from Psomas using CalEEMod version 16.3.2 (June 2018) from 2019 FEIR Section 5.21.

a Reductions assume that 80 percent of the GHG emissions reductions attributable to the utilization of EVs at Project buildout are due to regulatory, CalEEMod and EV market development factors (see "Mobile Emissions" discussion below).
b Reductions attributable to MM 10-1, MM 10-25, MM 10-26, MM 21-14, MM 21-22, and MM 14-11, as well as 20 percent of the reductions attributable to the utilization of EVs at Project buildout (see "Mobile Emissions" discussion below).
c Overall increases attributable to combination of EV charging infrastructure emissions (increase of 11,224 $MTCO_2e$/yr allocated at 80 percent per footnote "a" above, and due to MM 11-4, MM 11-6, MM 21-15, MM 21-16, MM 21-18 and MM 21-19). GHG decreased emissions are also included, due to 2019 Title 24 Standards (reductions of -3,173 $MTCO_2e$/yr).
d Overall increases attributable to combination of EV charging infrastructure emissions (increase of 11,224 $MTCO_2e$/yr allocated at 20 percent per footnote "b" above), and due to MMs 13-2 and 13-6 (reduction of -109 $MTCO_2e$/yr) and MM 21-1 (-2,086 $MTCO_2e$/yr).
e Reductions attributable to MM 18-1, MM 21-9, and MM 21-13.
f Reductions attributable to MM 17-10 and attributed to regulatory factors.
g Reductions attributable to MM 11-3 and electric landscape equipment (Green Development Program).
h Reductions attributable to MM 7-11, MM 7-12 and MM 21-20 and attributed to regulatory factors.

Note: Total emissions may not add up exactly due to rounding.

The 2019 EIR evaluated the significance of the Approved Project's GHG emissions under two thresholds of significance. Under Threshold 21-1, the 2019 EIR considered whether the Project would "generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment," which is an inherently cumulative impact. The 2019 EIR then assessed whether the Approved Project's compliance with various regulatory programs designed to reduce GHG emissions and that contribute to the achievement of statewide GHG reduction goals. The 2019 EIR determined that the Approved Project's GHG impacts would be less than significant under Threshold 21-1 because the Approved Project

complies with and is consistent with all applicable regulatory projects to reduce GHG emissions and, therefore, would contribute to the achievement of California's GHG reduction goals.

Under Threshold 21-2, the 2019 EIR considered whether the Project would "conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases." The 2019 EIR then analyzed whether the Approved Project would conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG by assessing the Approved Project's consistency with the 2020 Los Angeles Community Climate Action Plan (CCAP) and with the Southern California Association of Governments' Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). The 2019 EIR determined that the Approved Project's GHG emission impacts would be less than significant under Threshold 21-2 because the Approved Project and its comprehensive Green Development Program, a component of the Centennial of Specific Plan, would be consistent with the CCAP and the RTP/SCS, thus ensuring that the Approved Project would contribute to achieving regional GHG reduction targets for the land use sector established by the California Air Resources Board (CARB).

Despite finding that the Approved Project's GHG impacts would be less than significant at a project level under both Thresholds 21-1 and 21-2, the 2019 EIR conservatively determined that the Project's incremental contribution of the global GHG emissions inventory would be a cumulatively considerable impact because it is legally infeasible for the County to enforce statewide compliance with California's statewide GHG regulatory regime. Accordingly, the 2019 EIR proposed, and the County ultimately adopted, 48 mitigation measures with which the Approved Project must comply in order to reduce its GHG emissions to the extent feasible.

This SEIR also includes further clarifications about the scope and relevance of California's GHG Cap-and-Trade program, as described above. The Cap-and-Trade program is the state's carbon pricing program and is a key regulation for efficiently meeting California's long-term GHG reduction targets. It became effective in 2012 under authority of AB 32 and was extended through 2030 with the enactment of AB 398. The Cap-and-Trade program is enforced by CARB and reduces GHG emissions through the implementation of a hard cap on overall GHG emissions that decreases annually. Under the program, major emitters of GHG known as "covered entities" are subject to a "compliance obligation" that requires them to surrender one "compliance instrument" (either an emissions allowance or an emissions offset) for each metric ton of GHG emitted by such covered entity.

Following publication of the 2019 DEIR in May of 2017, the Court of Appeal published its decision in *Association of Irritated Residents v. Kern County Board of Supervisors* (2017) 17 Cal.App.5th 708 ("*AIR*"). The AIR court held that a covered entity could use its compliance with the Cap-and-Trade program to show its GHG emission impacts were less than significant. Per the *AIR* decision, the volume of a covered entity's project's estimated emissions can be decreased to reflect the use of compliance instruments under the Cap-and-Trade program. The project at issue in *AIR* concerned modifications to an existing oil refinery, which is a "covered entity" under Cap-and-Trade. The Project's environmental

impact report disclosed that project GHG emissions would be reduced through compliance instruments surrendered by the oil refinery. The *AIR* environmental impact report also disclosed that PG&E, the Project's electricity supplier, would be required to surrender compliance instruments to counterbalance GHG emission increases related to increased power usage.

As described above, the trial court faulted the 2019 EIR's discussion of the Cap-and-Trade program to the Approved Project. To clarify, the California Air Resources Board ("CARB"), the state's lead climate agency and the promulgating agency for the Cap-and-Trade program regulations, explained in its "Statement of Reasons" for the Cap and Trade regulations:

> **"To cover [GHG] emissions from transportation fuel combustion and that of other fuels by residential, commercial, and small industrial sources**, staff proposes to regulate fuel supplies based on the quantities of fuel consumed by their customers. ... Fuel suppliers are responsible for the emissions resulting from the fuel they supply. In this way, a fuel supplier is acting on behalf of its customers who are emitting the GHG. ... Suppliers of transportation fuels will have a compliance obligation for the combustion emissions from fuel that they sell, distribute, or otherwise transfer for consumption in California. ... **[B]ecause transportation fuels and use of natural gas by residential and commercial users is a significant portion of California's overall GHG emissions, the emissions from these sources are covered indirectly through the inclusion of fuel distributors** [in the Cap and Trade regulatory program].) (Emphasis added.) (Cal EPA 2010).

The 2019 EIR accordingly included the Cap-and-Trade program in the regulatory setting of the EIR, and in its updated quantification of the GHG emissions from the Approved Project.

The 2019 FEIR reported that the Approved Project would generate approximately 157,642 $MTCO_2e/y$ in unmitigated GHG emissions. The 2019 FEIR also reported that approximately 96 percent of the Approved Project's unmitigated GHG emissions are covered by the Cap-and-Trade program because they are caused by the consumption of fuels and electricity supplied by the Approved Project's upstream fuel and electricity suppliers, all of whom are covered entities under Cap-and-Trade. In the Climate Resolve litigation, the Los Angeles County Superior Court determined that the 2019 FEIR reporting was misleading because the Approved Project is not a covered entity under the Cap-and-Trade program, is not required to comply with the Cap-and-Trade program, and Cap-and-Trade is accordingly not relevant to determining the significance of the Approved Project's GHG emission impacts at a project- or cumulative-level.

This SEIR clarifies that the Cap-and-Trade program is not used to analyze, mitigate, otherwise reduce, or determine the significance of, the Approved Project or the Project Modification's GHG emission impacts under CEQA. Neither the Approved nor Proposed Modifications are covered entities under the Cap-and-Trade program, and because the project at issue in the *AIR* decision discussed above was a covered entity, the court's holding in *AIR* is not applicable to the Approved Project or Project Modifications.

As noted above, almost all (approximately 96% as described in the 2019 FEIR) of the GHG emissions from the Approved Project derive from the direct consumption of fossil fuel by vehicles, from the Approved Project's use of electricity generated by natural gas, and from natural gas consumption in buildings and infrastructure systems. The accuracy of that quantitative emissions analysis was upheld by the trial court, and that determination has not been appealed.

Climate Resolve "Net Zero" Settlement Agreement

As discussed, following issuance of the Court Order in the Climate Resolve litigation, the Approved Project proponent, Centennial LLC and its affiliate Tejon Ranchcorp, and Climate Resolve, a nonprofit public benefit corporation, entered into an agreement to such litigation (Settlement Agreement). The Settlement Agreement became effective and fully enforceable on November 30, 2021. As a result of the Settlement Agreement, the Climate Resolve lawsuit was dismissed by the Court with prejudice. A copy of the Settlement Agreement is included as Appendix A.

The Settlement Agreement requires Centennial to be "Net Zero GHG," which means that the Centennial's construction and operational GHG emissions will be further reduced, and fully offset, by GHG reductions. As recognized by the state's leading climate agency, the California Air Resources Board ("CARB") in its 2022 Scoping Plan, Appendix F:

> "[A]s a result of a recent settlement agreement, Tejon Ranch Company, the developer for the Centennial Specific Plan located in northern Los Angeles County, also committed its development to result in no net increase of GHG emissions. Mitigation measures required in these [Centennial and the Newhall Ranch Project also noted in the Scoping Plan] include the prohibition of natural gas in residential and commercial properties; the requirement of on-site solar photovoltaic energy systems on residential and commercial properties; the installation of almost 30,000 EV chargers within and outside the plan area; funding incentives for the purchase of 10,500 passenger EVs and electric school buses and trucks; and procuring and retiring carbon offset credits from the voluntary market." (CARB 2022 Scoping Plan, Appendix F p. 24-26)

The Settlement Agreement is legally binding on the Approved Project proponent. Compliance with the Settlement Agreement required by the applicant, but the County has no obligations under the Settlement Agreement. No revisions to the entitlements in the Approved Project are required for the applicant to comply with the Settlement Agreement. Additional details about the Settlement Agreement are provided below:

"Net Zero GHG" Settlement Agreement Overview

The Settlement Agreement addresses the key issues identified in the Court's ruling in the Climate Resolve litigation: projected impacts related to climate change and wildfire. With regard to climate change, the Settlement Agreement requires the Project to be a "Net Zero GHG Project" - *i.e.*, all of the Project's unmitigated emissions must be counterbalanced by an

equivalent amount of GHG reductions from the atmosphere such that it will generate no net increase in GHG emissions above existing conditions. In fact, the Settlement Agreement requires the Approved Project to be established as a greater-than Net Zero GHG Project because it requires more than *three times* full offset mitigation of the Approved Project's unmitigated GHG emissions. As discussed, the 2019 EIR determined that the Approved Project would generate approximately 157,642 $MTCO_2e/y$ in unmitigated GHG emissions, a calculation that the Los Angeles Superior Court determined was supported by substantial evidence. The Settlement Agreement, however, requires the Approved Project to mitigate 500,000 $MTCO_2e/yr$ over the Approved Project's 30-year lifespan.

Per the Settlement Agreement, the Approved Project's 3x Net Zero GHG commitment will be accomplished by two types of mitigation measures, including the Itemized and Non-Itemized mitigation measures to be implemented in phases (i.e., on a tract map by tract map basis) as the Centennial Specific plan community develops. Satisfaction of the Settlement Agreement's Net Zero GHG requirements will be confirmed and monitored by Centennial Monitoring Group (CMG), which is an independent non-profit group established to monitor compliance with the Settlement Agreement and implementation of terms. The Group would be led by a Board consisting of two members appointed by the Project applicant, two members appointed by Climate Resolve, and one independent member jointly appointed by Climate Resolve and the Project applicant.

In addition, a True-Up option is available at fifteen years. Prior to the expiration of fourteen years from the Settlement Agreement effective date, the Project applicant may elect to undertake a comprehensive process called the "True-Up" that assesses the extent to which the Approved Project has progressed towards becoming a Net Zero GHG Project and would revisit the calculations and assumptions used to calculate the requirements of the Settlement Agreement. This would then go to the CMG Board for review and approval of the modified assumptions and calculations and itemized and non-itemized GHG reduction measures.

Itemized GHG Reduction Measures

The Settlement Agreement requires the Project applicant, Centennial LLC, and its parent company, Tejon Ranchcorp, to implement the following itemized GHG reduction measures:

- Ensure through enforceable Covenants, Conditions & Restrictions (CC&Rs) that no natural gas infrastructure may be installed within the Centennial Specific Plan Project site for residential buildings, recreation centers, and/or public facilities, and through CC&Rs ensure that natural gas use is prohibited in such structures;
- Ensure through enforceable CC&R's that natural gas use is prohibited for use by Non-Residential tenants for non-essential uses, which include space heating, non-industrial water heating, space cooling, and non-commercial cooking;
- Prohibit all fireplaces that use fossil fuels within the Centennial Specific Plan Project site, as well as within Tejon Ranchcorp's Grapevine Specific Plan Project site in Kern County;

- All building developers, including without limitation residential commercial, industrial, or public buildings, must install battery storage systems to the extent required by then-applicable building codes or other regulatory requirements. If battery storage systems are not required by code, all building developers shall be required to offer such systems as an option available for purchase or lease;
- Provide an inflation-adjusted $5,000 in reimbursement incentives to the renters or purchasers of each of the project's dwelling units to support the purchase of an electric vehicle (EV) until such time as the incentive has been provided to fifty percent of the project's dwelling units. Informational material on the incentives must be provide at the time of home purchase or rental and regularly advertised through HOA communications;
- Prior to issuance of certificate of occupancy, install one operable Level-2 or higher-capacity EV charger at each of the project's single-family dwelling units;
- Prior to issuance of certificate of occupancy, install operable Level-2 or higher-capacity EV chargers in the parking area of each of the project's multi-unit Residential buildings in such capacity that one charger is provide for one assigned parking space for each of the building's dwelling units;
- Install in nearby parking spaces for each of the project's Non-Residential structures operable Level-2 or higher-capacity EV chargers at a rate of at least one EV charger for each 3,500 square feet of space and no fewer than 3,500 charging connectors. The required EV chargers must be installed and made operatable prior to issuance of a certificate of occupancy for the relevant Non-Residential structure;
- Install 100 operable EV chargers to serve Medium-Duty and Heavy-Duty vehicles at the Tejon Ranch Commerce Center. The first of these EV chargers must be installed and made operable prior to receipt of a certificate of occupancy for the 100,972nd square feet of non-residential uses within the Centennial Specific Plan area, and one additional EV charger must be installed and made operable at the Tejon Ranch Commerce Center prior to issuance of a certificate of occupancy for each subsequent 100,972 square feet of non-residential uses within the Centennial Specific Plan thereafter;
- Establish enforceable CC&Rs requiring the project's Non-Residential owners to maintain and keep operable the EV chargers located on their respective properties, and include in CC&Rs a non-enforceable encouragement to opt into any available one hundred percent renewable energy source as a power supply;
- Provide $7,500 in reimbursement incentives per vehicle for 500 vehicles to businesses that conduct activities on Tejon Ranch to purchase Medium-Duty and Heavy-Duty vehicles (i.e., Class 1-7 trucks or vans) expected to be used in part on Tejon Ranch, for a total of $3,750,000. Such EV incentives must be offered to businesses or other entities for Class 1-7 vehicles that conduct activities on Tejon Ranch, to be awarded in $7,500 grants with one $7500 grant awarded prior to the certificate of occupancy for the 38th dwelling unit within the Centennial Specific Plan area, and additional $7500 grants for every subsequent 38th dwelling unit until the incentives are fully depleted.

- Provide an EV grant program of $5,000 per vehicle for 300 vehicles for public agency service fleets that serve the Centennial Specific Plan community, but which are controlled by public agencies no specific to the Project, such as for public safety, maintenance, and operations for a total of $1,500,000. In addition, provide an EV grant program of $5,000 per vehicle to provide for up to 100 vehicles for project-specific community agencies or organizations, including the Homeowners Association, Commercial and Hospitality Associations, and Transportation Management Association, for a total of $500,000. The total of $2,000,000 in EV incentives must be offered to public service and community service fleet vehicles used at the Project site must be awarded in $5,000 grants, within one $5,000 grant awarded prior to issuance of the certificate of occupancy for the 48th dwelling unit in the Project site, and additional $5,000 grants for every subsequent 48th dwelling unit until the incentives are fully depleted.
- Provide incentives totaling $8,000,000 to support the purchase of school and transit buses and vans for the project's schools and community transit fleets, and for the installation of EV chargers to serve them. Such incentives must be awarded in $20,000 grants, with the first grant awarded prior to issuance of the certificate of occupancy for the 48th dwelling unit within the Centennial Specific Plan area and an additional $20,000 grant for each subsequent 48th dwelling unit until the incentives are fully depleted.
- Install 5,000 operable Level-2 or higher-capacity EV chargers in disadvantaged communities located within the jurisdictional boundary of the South Coast Air Management District, with the first EV charger installed prior to issuance of a certificate of occupancy for the 4th dwelling unit within the Centennial Specific Plan area, with one additional EV charger installed for every 4th dwelling unit thereafter.
- Establish enforceable CC&R governing residential building in the Grapevine Specific Plan Project site prohibiting the installation of natural gas infrastructure serving residential buildings, and ensuring that natural gas use is prohibited in such structures.

Non-Itemized GHG Reduction Measures

The Centennial Specific Plan Project will be established as a Net Zero GHG community by also implementing certain non-itemized GHG reduction measures specified in section 1.b of the Settlement Agreement. The non-itemized GHG reduction commitments include funding one of CARB's approved list of Offset Project Registries (Climate Action Reserve, Verra, American Carbon Registry); funding the development of a new GHG mitigation methodology under CARB or a CARB approved registry; or directly undertake or fund projects on Tejon Ranch directly resulting in a quantified mitigation credit by CARB or a CARB approved Registry. The Settlement Agreement generally prohibits the purchase of emission offsets to fulfill the Settlement Agreement's emission reduction obligations unless it will be otherwise infeasible approved as a last resort compliance option for one phase of the overall project by a majority vote of the CMG Board, and only to the extent the Board determines that it will otherwise infeasible for the Project applicant to reduce or avoid the GHG emissions of that phase of the project to become a Net Zero GHG Project under the terms of the Settlement Agreement. Any

such Board vote, however, would be on a temporary, phase-by-phase case and would not be applicable to the entire project.

Transparent Reporting

The Settlement Agreement requires the Project applicant to annually publish a report documents all actions taken in the prior calendar year to comply with the Settlement Agreement's GHG emission reduction requirements, including information on all itemized and non-itemized GHG reduction measures organized by project phase (i.e., organized by each vesting tentative tract map). The required annual report must also list actions the Project applicant plans to undertake in the following calendar year to comply with its Settlement Agreement obligations. By way of illustration, the annual report shall include data for the relevant reporting period that detail applications for tract maps and building permits; the type and amount of EV incentives listed in the Settlement Agreement that have been reserved and actually disbursed; the number, model type, and locations of operative EV chargers installed by the Project applicant; and the description number and type of onsite and Registry-certified offsite GHG emission reduction measures planned and actually implemented by the Project applicant.

The annual report must also provide a cumulative total of mitigation credits awarded by Offset Project Registries to the Project applicant for non-itemized GHG reduction measures since the effective date of the Settlement Agreement and an accounting of those such mitigation credits have been allocated to phases of the Centennial Specific Plan Project to enable the CMG to track progress towards achieving Net Zero GHG emissions. Moreover, if the Project's non-residential customers procure biogas for use in place of natural gas, the Settlement Agreement requires the Project applicant to ask Southern California Gas Company to report on the origins of that biogas as a term of their contract and must include that report in each annual report.

The Settlement Agreement requires each annual report to be made publicly available for download from the project website free of charge, and the Project applicant must issue a press release announcing the availability of each annual report for public review. Each annual report must be approved by a majority vote of the CMG and any disputes regarding the reporting process are subject to a dispute resolution process set forth in section 2.f of the Settlement Agreement.

Impact Analysis

The GHG impacts of the Approved Project with the Proposed Modifications are expected to be substantially similar or less than those of the Approved Project without the Proposed Modifications. This SEIR uses the same two thresholds of significance as the 2019 EIR to evaluate the GHG impacts of the Approved Project with the Proposed Modifications.

Threshold 21-1: Would the Approved Project with Project Modifications generate greenhouse gas emissions, either directly or indirectly, that may have a significant effect on the environment?

The Proposed Modifications to the Approved Project – i.e., the addition of utility-scale battery storage as a conditionally permitted use within those areas of the Centennial Specific Plan's designated for Industrial use; the addition of microgrid electricity distribution as a permitted use in the Specific Plan; and the opening of a portion of the existing and the entirety of the new Cement Plant Roads for public use – are not expected to cause additional construction or operational GHG emissions not otherwise accounted for in the 2019 EIR. In fact, it is likely that the proposed, conditionally permitted battery storage use will cause fewer GHG emissions than the industrial uses they are displacing. Adding utility-scale batteries to the Approved Project is also consistent with California's renewable energy goals, and as noted by the Center for Climate and Energy Solutions, electric energy storage uses (such as batteries) can increase[e] electric reliability while reducing energy costs and greenhouse gas emissions (C2ES 2025). With utility-scale batteries, the Approved Project with Proposed Modifications allows for the storage the excess renewable energy produced from California's solar facilities during the afternoon hours, and then use this stored renewable energy to be used during the peak afternoon-evening electricity consumption period for households. Utility-scale battery storage, in addition to the ancillary battery storage in commercial and residential buildings (as use already permitted by the Approved Project), increases overall use of solar voltaic electricity and reduces demand for electricity produced by offsite natural gas plants. Quantitative GHG reductions from utility scale battery facilities and microgrids have not been accounted for in this analysis. Thus, for purposes of this analysis, it is conservatively assumed that, like the unmodified Approved Project, the Approved Project with Proposed Modifications would emit approximately 157,642 $MTCO_2e$ of GHG per year, after taking into account reductions associated with the application of applicable GHG reduction regulations and Mitigation Measures MM 21-1 through MM 22-2, as discussed in the 2019 EIR and the *Updated Greenhouse Gas Calculations for the Centennial Project* report set forth in Section 4.3 of Volume 3 of the 2019 FEIR. In addition, this calculation does not account for GHG reductions associated with the Settlement Agreement's "Net Zero" GHG contractual obligation. Finally, this calculation does not account for the recently enacted GHG regulatory mandates described above, in part based on legal uncertainty given pending lawsuits against some GHG reduction measures and in part based on the absence of expert agency approved methodologies for estimating GHG reductions based on the newest legal mandates,

TABLE 3.1-3
2019 DEIR QUANTIFIED GHG EMISSIONS, 2019 FEIR'S UPDATED GHG CALCULATIONS, AND APPROVED PROJECT WITH PROPOSED MODIFICATIONS SEIR GHG EMISSIONS ($MTCO_2E$/YEAR)

GHG Emission Sources	2019 DEIR Quantified GHG Emissions	Reductions		Net Change in GHG Emissions	2019 FEIR GHG Calculations	SEIR GHG Calculations
		From Regulations and CalEEMod Update	*From Mitigation Measures*			
Mobile	160,904	-52,694[a]	-31,203[b]	-83,897	77,007	77,007
Energy	49,414	5,584	50	5,634	55,047	55,047
Electrical Power	*23,276*	*5,806*[c]	*50*[d]	*5,856*	*29,132*	*29,132*
Natural Gas	*26,137*	*-222*	*0*	*-222*	*25,915*	*25,915*
Water and Wastewater	7,387	0	-3,184[e]	-3,184	4,203	4,203
Solid Waste	10,214	-5,107[f]	0	-5,107	5,107	5,107
Area	11,297	0	-74[g]	-74	11,223	11,223
Construction	4,490	0	0	0	4,490	4,490
Vegetation	673	-108[h]	0	-108	565	565
Total Emissions	**244,379**	**-52,324**	**-34,412**	**-86,736**	**157,642**	**157,642**

Sources: 2019 DEIR Quantified GHG Emissions from 2019 DEIR Section 5.21; Updated GHG Calculations from Psomas using CalEEMod version 16.3.2 (June 2018) from 2019 FEIR Section 5.21.

a Reductions assume that 80 percent of the GHG emissions reductions attributable to the utilization of EVs at Project buildout are due to regulatory, CalEEMod and EV market development factors (see "Mobile Emissions" discussion below).

b Reductions attributable to MM 10-1, MM 10-25, MM 10-26, MM 21-14, MM 21-22, and MM 14-11, as well as 20 percent of the reductions attributable to the utilization of EVs at Project buildout (see "Mobile Emissions" discussion below).

c Overall increases attributable to combination of EV charging infrastructure emissions (increase of 11,224 $MTCO_2e$/yr allocated at 80 percent per footnote "a" above), and due to MM 11-4, MM 11-6, MM 21-15, MM 21-16, MM 21-18 and MM 21-19). GHG decreased emissions are also included, due to 2019 Title 24 Standards (reductions of -3,173 $MTCO_2e$/yr).

d Overall increases attributable to combination of EV charging infrastructure emissions (increase of 11,224 $MTCO_2e$/yr allocated at 20 percent per footnote "b" above), and due to MMs 13-2 and 13-6 (reduction of -109 $MTCO_2e$/yr) and MM 21-1 (-2,086 $MTCO_2e$/yr).

e Reductions attributable to MM 18-1, MM 21-9, and MM 21-13.

f Reductions attributable to MM 17-10 and attributed to regulatory factors.

g Reductions attributable to MM 11-3 and electric landscape equipment (Green Development Program).

h Reductions attributable to MM 7-11, MM 7-12 and MM 21-20 and attributed to regulatory factors.

Note: Total emissions may not add up exactly due to rounding.

This assessment of the GHG impacts of the Approved Project with Proposed Modifications is also conservative because the because the 2019 EIR assumed GHG reductions associated with project compliance with certain regulatory programs for reducing GHG emissions that have since been amended to impose more stringent energy efficiency requirements that will reduce project GHG emissions to a greater extent. For example, the 2019 EIR's Updated GHG Calculations took into account project compliance with the 2019 Title 24 Building Energy Efficiency Standards. The Approved Project with Project Modifications, however, must comply with the current 2022 Title 24 Building Energy Efficiency Standards, which would reduce the project's electrical consumption estimates for low-density residential and non-residential uses when compared to the 2019 Title 24 standards. As also discussed above, the 2019 Centennial DEIR assumed "an average industry fleet-wide level of 163 grams per mile in model year 2025." However, the revised standards "are projected to result in an industry-wide average target for the light-duty fleet of 82 grams/mile (g/mile) of CO2 in MY 2032, representing a 56 percent reduction in projected fleet average GHG emissions target levels from the existing MY 2026 standards." (Vol. 88 FR 29196.)

By adding utility-scale battery storage and microgrids as conditionally-approved uses authorized in the Centennial Industrial zone, the Approved Project with Project Modifications would not add any GHG emissions during Project operations. Utility-scale battery storage and microgrid equipment requires minimal operational staffing levels which are well below the employee staffing projections included in the 2019 EIR for industrial and commercial Project uses. As with other industrial and commercial uses, the Proposed Modifications' conditionally permitted utility-scale battery storage and permitted microgrids would include short-term impacts during the construction and maintenance stage from vehicular use, which are likewise within the scope of construction emissions assessed for the Approved Project's industrial and commercial uses.

Because the effects of GHG emissions are considered in a global context, that is, global warming and climate change, GHG emissions are generally addressed as a cumulative issue. With implementation of the Approved Project's 2019 EIR mitigation measures, including Mitigation Measures MM 21-1 through MM 22-2 and compliance with applicable GHG reducing regulatory programs, the Approved Project with Project Modifications is estimated to generate GHG emissions of approximately 157,642 $MTCO_2e$/yr, though actual GHG emissions may be somewhat lower due to the Proposed Modifications' provision of battery storage and microgrid technologies as permitted or conditionally permitted uses within the Specific Plan area.

While this level of GHG emissions has the potential to result in a cumulative contribution to cumulative emissions related to global climate change, the Project applicant has entered into a binding and enforceable legal agreement that requires the Approved Project with Project Modifications to achieve zero net GHG emissions (i.e., no net increase above existing conditions) through a combination of feasible and reliable GHG reduction measures. With implementation of this binding Settlement Agreement, and resulting achievement of zero net GHG emissions, the Approved Project with Project Modifications would not substantially contribute to any cumulative GHG emissions. This cumulative impact significance conclusion does not depend on the state's Cap and Trade regulatory program for any reduction in Project GHG emissions. Accordingly, with continued implementation of 2019 EIR mitigation

measures MM 21-1 through MM 22-2, **the Approved Project with Project Modifications' cumulative GHG impacts would be less than significant under GHG Threshold 1**.

GHG Threshold 2: Would the Approved Project with Project Modifications conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

This impact is considered less than significant.

The Project Is Consistent With, and Would Not Conflict With, the 2035 General Plan Air Quality Element

On June 25, 2024, by the Los Angeles County Board of Supervisors, the updated the Air Quality (AQ) element of its General Plan. This update included AQ Policy 3.1, which states as follows:

> *Facilitate the implementation and maintenance of the Climate Action Plan through future County programs to ensure the County reaches its climate action and greenhouse gas emission reduction goals, and consider projects with an enforceable legal obligation to achieve "net zero" greenhouse gas (GHG) emissions, including by voluntary agreement to resolve litigation or with a government agency, to help the County achieve the long-term goals of the CAP.*[2]

Concurrent with its adoption of its CAP, the Board of Supervisors also adopted Los Angeles County 2045 Climate Action Plan (2045 CAP), a plan-level framework for the County to implement, and sets strategies, goals, and actions to reach the County's emissions reductions targets. Appendix F of the CAP outlines how CEQA analysis of greenhouse gas (GHG) impacts for "net-zero" projects can be streamlined, as follows:

> *If the project would achieve net-zero GHG emissions, the project is considered to comply with the 2045 CAP and the analysis is complete.*[3]

To fulfill the Climate Resolve Settlement Agreement obligations, the Project has a contractual obligation to reduce GHG emissions by 500,000 metric tons per year, far exceeding what would be necessary to achieve "net-zero" based on the annual reduction of 157,642 MT per year of GHG emissions that were identified in the 2019 FEIR. The Settlement Agreement mandates the Project to participate in or fund several GHG reduction activities that would mitigate the 2019 FEIR approved inventory to zero, demonstrating the Project's status as a net-zero Project, consistent with Appendix F of the 2045 CAP.

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2 The Honorable Board of Supervisors, County of Los Angeles. 2024. "RE: 2045 Climate Action Plan (04/16/24 Boards Agenda; Item No. 5)". June 25. Source: https://file.lacounty.gov/SDSInter/bos/supdocs/192494.PDF. Accessed date: November 2024.

3 County of Los Angeles. 2024. "Appendix F: 2045 Climate Action Plan CEQA Streamlining Checklist". June 25. Source: https://planning.lacounty.gov/wp-content/uploads/2024/07/gp_2045_Climate_Action_Plan_Appendices_June-2024.pdf. Accessed date: November 2024.

In order to conservatively calculate the amount of reductions required to classify this project as net-zero as defined in the 2045 CAP, this analysis evaluates the reductions achieved via various itemized GHG reduction measures required by the Settlement Agreement against a larger emissions inventory than was reported in the 2019 FEIR. The 2019 FEIR assumed an electric vehicle (EV) adoption rate of 50% by Project buildout. As explained in the 2019 FEIR, this assumption accounted for a reduction of 65,859 metric tons of CO_2e per year.[4]

If the 2019 FEIR had not assumed this 50% EV utilization rate in its inventory and instead relied on CalEEMod model defaults, the GHG inventory that would need to be reduced in order to meet net-zero requirements would equate to 223,501 MT of GHG per year, rather than the 157,642 MT per year of GHG emissions that were identified in the 2019 FEIR as the Project's GHG emissions inventory, as shown in Table 3.1-4.

TABLE 3.1-4
ANNUAL PROJECT GHG EMISSIONS BY SOURCE GROUP

GHG Emission Sources	Approved GHG Emissions Inventory from the FEIR[1] (MT CO_2e/year)	GHG Emissions Inventory with Reduced EV Utilization Assumptions[2] (MT CO_2e/year)
Mobile	77,007	142,866
Energy	55,047	55,047
Water and Wastewater	4,203	4,203
Solid Waste	5,107	5,107
Area	11,223	11,223
Construction	4,490	4,490
Vegetation	565	565
Total	**157,642**	**223,501**

Notes:
1 Emissions calculated by Psomas using CalEEMod Version 16.3.2 (June 2018).
2 On page 4 of the Updated Greenhouse Gas Calculations for the 2019 EIR, it is reported that there are -83,897 MT CO2e per year of GHG reductions for the mobile emissions compared to the DEIR. It is also reported that 78.5% of those GHG reductions are due to the increased EV utilization rate, which equates to 65,859 MT CO2e per year. To be conservative with emission reductions, this amount is added back into the wholistic number.

Abbreviations:
CalEEMod - California Emissions Estimator Model
CO_2e - carbon dioxide equivalents
DEIR - Draft Environmental Impact Report
EV - electric vehicle
FEIR – 2019 Final Environmental Impact Report
GHG - greenhouse gas emissions
MT - metric ton

[4] Per the Updated Greenhouse Gas Calculations for the Centennial Project Final Environmental Impact Report as prepared by Psomas on August 13, 2018, *"The inclusion of a 50 percent EV utilization rate accounts for approximately 78.5 percent of the Project's total -83,897 MT CO_2e/year reductions for mobile emissions."*

The following analysis and Tables demonstrate that the Settlement Agreement's obligations require the reduction of GHG emissions well below this conservative threshold of 223,501 MT per year of GHG necessary to be deemed net-zero for purpose of consistency with Appendix F of the CAP.

The Settlement Agreement includes several itemized measures that the Project is required to implement in order to reduce the GHG emissions inventory of the Project. Notably, it requires the Project to make broad strides to decarbonize the mobile sources by providing subsidies for electric vehicle procurement and installing chargers. These measures will encourage use of electric vehicles within the Project site and beyond. The Settlement Agreement requires the Project to provide subsidies for 100 community vehicles, 300 public service vehicles, and 50 transit buses. These subsidies would reduce GHGs by replacing combustion vehicles with electric vehicles, as shown in Tables 3.1-5, 3.1-6 and 3.17, respectively.

TABLE 3.1-5
GHG EMISSION REDUCTIONS FROM EV SUBSIDIES FOR COMMUNITY PASSENGER VEHICLE FLEET

EMFAC2017 Data[1]			
Calendar Year		2035	
EMFAC Sub-Area		Los Angeles (SC)	
EMFAC2017 Gasoline/Diesel Passenger Vehicle VMT		222,510,045	miles/day
EMFAC2017 Gasoline/Diesel Passenger Vehicle Population		6,748,590	Passenger Vehicles
EMFAC 2017 Gasoline/Diesel Passenger Vehicle Running Exhaust Emissions	CO_2	50,224	MT/day
	CH_4	0.278	MT/day
	N_2O	0.773	MT/day
	CO_2e	50,461	MT/day
EMFAC2017 Gasoline/Diesel Passenger Vehicle Emission Factor	Co_2e	227	g/mile
ZE Passenger Car Data			
Number of Vehicles to be Replaced[2]		100	Passenger Vehicles
Average Annual VMT[3]		11,441	miles/vehicle/year
Average Annual GHG Emissions per Truck[4]		3	MT CO_2e/vehicle/year
Total Annual GHG Emissions Reduced[5]		259.5	MT CO_2e/year

Notes:
[1] The values obtained from EMFAC2017.
[2] The number of passenger vehicles to be replaced value obtained from the Settlement Agreement.
[3] The average annual VMT was calculated from dividing the passenger vehicle (LDA, LDT1, LDT2) VMT by the passenger vehicle population and multiplying it by the EMFAC Default operational days per year.
[4] The average annual GHG emissions per vehicle was calculated from multiplying the passenger vehicle emission factor with the average annual VMT.
[5] The total annual GHG emissions reduced is the average annual GHG emissions per truck multiplied by the number of vehicles to be replaced.

Conversion Factors:

0.907185	MT/ton
347	days/year, EMFAC Default
1000000	g/MT

IPCC AR4 Global Warming Potentials (GWP):

CO_2	1
CH_4	25
N_2O	298

Abbreviations:

CARB - California Air Resources Board	IPCC - Intergovernmental Panel on Climate Change
CH4 - methane	LDA - light-duty automobile
CO2 - carbon dioxide	LDT - light-duty truck
CO2e - carbon dioxide equivalents	MT - metric ton
EMFAC - CARB Emissions Factor Model	N2O - nitrous oxide
EV - electric vehicle	SC - South Coast
g - grams	VMT - vehicle miles traveled
GHG - greenhouse gases	ZE - zero emissions
GWP - global warming potential	

TABLE 3.1-6
GHG EMISSION REDUCTIONS FROM EV SUBSIDIES FOR PUBLIC SERVICE PASSENGER VEHICLE FLEET

EMFAC 2017 Data[1]			
Calendar Year		2035	
EMFAC Sub-Area		Los Angeles (SC)	
EMFAC 2017 Gasoline/Diesel LDA VMT		222,510,045	miles/day
EMFAC2017 Gasoline/Diesel LDA Population		6,748,590	Passenger Vehicles
EMFAC2017 Gasoline/Diesel LDA Running Exhaust Emissions	CO_2	50,224	MT/day
	CH_4	0.278	MT/day
	N_2O	0.773	MT/day
	CO_2e	50,461	MT/day
EMFAC 2017 Gasoline/Diesel LDA Emission Factor	CO_2e	227	g/mile
ZE Passenger Car Data			
Number of Vehicles to be Replaced[2]		300	Passenger Vehicles
Average Annual VMT[3]		11,441	miles/vehicle/year
Average Annual GHG Emissions per Truck[4]		3	MT CO_2e/vehicle/year
Total Annual GHG Emissions Reduced[5]		778.4	MT CO_2e/year

Notes:
[1] The values were obtained from EMFAC2017.
[2] The number of passenger vehicles to be replaced value obtained from the Settlement Agreement.
[3] The average annual VMT was calculated from dividing the passenger vehicle (LDA, LDT1, LDT2) VMT by the passenger vehicle population and multiplying it by the EMFAC Default operational days per year.
[4] The average annual GHG emissions per vehicle was calculated from multiplying the passenger vehicle emission factor with the average annual VMT.
[5] The total annual GHG emissions reduced is the average annual GHG emissions per vehicle multiplied by the number of trucks to be replaced.

Conversion Factors:

0.907185	MT/ton
347	days/year, EMFAC Default
1000000	g/MT

IPCC AR4 Global Warming Potentials (GWP):

CO_2	1
CH_4	25
N_2O	298

Abbreviations:

CARB - California Air Resources Board	IPCC - Intergovernmental Panel on Climate Change
CH4 - methane	LDA - light-duty automobile
CO2 - carbon dioxide	LDT - light-duty truck
CO2e - carbon dioxide equivalents	MT - metric ton
EMFAC - CARB Emissions Factor Model	N2O - nitrous oxide
EV - electric vehicle	SC - South Coast
g - grams	VMT - vehicle miles traveled
GHG - greenhouse gases	ZE - zero emissions
GWP - global warming potential	

TABLE 3.1-7
GHG EMISSION REDUCTIONS FROM EV SUBSIDIES FOR TRANSIT BUSES

EMFAC 2017 Data[1]			
Calendar Year		2035	
EMFAC Sub-Area		Los Angeles (SC)	
EMFAC2017 UBUS VMT		508,594	Miles/day
EMFAC2017 UBUS Population		4,967	Buses
EMFAC 2017 UBUS Running Exhaust Emissions	CO_2	1,001	MT/day
	CH_4	2.9874	MT/day
	N_2O	0.1931	MT/day
	$CO2_e$	1,133	MT/day
EMFAC2017 UBUS Emission Factor	$CO2_e$	2,228	g/mile
ZE Transit Bus Data			
Number of Buses to be Replaced[2]		50	Buses
Average Annual VMT[3]		33,485	Miles/bus/year
Average Annual GHG Emissions per Truck[4]		74.6	MT CO_2e/bus/year
Total Annual GHG Emissions Reduced[5]		3730.0	MT CO_2e/year

Notes:
[1] The values were obtained from EMFAC2017.
[2] The number of trucks to be replaced value obtained from the Settlement Agreement.
[3] The average annual VMT was calculated from dividing the UBUS VMT by the UBUS population and multiplying it by the EMFAC Default operational days per year.
[4] The average annual GHG emissions per bus was calculated from multiplying the UBUS emission factor with the average annual VMT.
[5] The total annual GHG emissions reduced is the average annual GHG emissions per bus multiplied by the number of trucks to be replaced.

Conversion Factors:

0.907185	MT/ton
327	days/year, EMFAC Default
1000000	g/MT

IPCC AR4 Global Warming Potentials (GWP):

CO_2	1
CH_4	25
N_2O	298

Abbreviations:

CARB - California Air Resources Board	IPCC - Intergovernmental Panel on Climate Change
CH4 - methane	LDA - light-duty automobile
CO2 - carbon dioxide	LDT - light-duty truck
CO2e - carbon dioxide equivalents	MT - metric ton
EMFAC - CARB Emissions Factor Model	N2O - nitrous oxide
EV - electric vehicle	SC - South Coast
g - grams	VMT - vehicle miles traveled
GHG - greenhouse gases	ZE - zero emissions
GWP - global warming potential	

As required by the Settlement Agreement, Centennial must install 100 chargers for medium- and heavy-duty vehicles. This installation will allow larger vehicles to charge at the Project

site and facilitate the State's goals to electrify the heavy-duty truck fleet, which will reduce emissions from mobile sources, as shown in Table 3.1-8.

TABLE 3.1-8
GHG EMISSION REDUCTIONS FROM LEVEL 4 ELECTRIC VEHICLE CHARGERS AT TEJON RANCH COMMERCE CENTER

Estimating Emissions Reduction to Replace Class 4-8 Diesel Trucks with Electric Trucks		
SCE electricity emission factor[1]	0.00	(MT CO_2e/MWh)
Fuel Efficiency of Class 4-8 Battery Electric Trucks[2]	1.25	(kWh/mile)
GHG emission factors for Class 4-8 Battery Electric Trucks[3]	0	(gms CO_2e/mile)
GHG emission factors for Diesel Class 4-8 Trucks[4]	1,001	(gms CO_2e/mile)
GHG Emissions Reduction Rates for replacement of Class 4-8 Diesel Trucks with Battery Electric Trucks[5]	1,001	(gms CO_2e/mile)
Annual Energy Delivery per Level 4 Charger[6]	165,000	(kWh/charging station/year)
Annual VMT Displacement per Level 4 Charger[7]	131,886	(miles/charging station/year)
GHG Reduction per Level 4 Charger per Year[8]	132	(MT CO_2e/charging station/year)
Trucks Chargers Installed[9]	100	(charging stations)
Total GHG Reduction from Level 4 Chargers	**13,208**	**(MT CO_2e/year)**

Notes:
[1] CO2e intensity factors from electricity are expected to be zero to reflect participation in Southern California Edison's Clean Power Plan.
[2] Fuel efficiency for Class 4-8 battery electric trucks were estimated based on the fuel efficiencies provided in the SCAQMD Draft WAIRE Menu Technical Report (available at: http://www.aqmd.gov/docs/default-source/planning/fbmsm-docs/wairemenu-technical-report_draft_3-3-20.pdf?sfvrsn=6) and fleet mix for the South Coast sub-area of Los Angeles County in 2035.
[3] The GHG emissions factors for electric trucks is expected to be zero based on the electricity for the Project being supplied by 100% clean energy.
[4] The emission factors for diesel Class 4-8 trucks are estimated using an EMFAC2017 model run for vehicles operating in the South Coast sub-area of Los Angeles County during 2035.
[5] The GHG emissions reduction rates are calculated as the difference between GHG emission factors of diesel trucks and GHG emission factors of electric trucks.
[6] The annual Energy Delivery for a Level 4 charger is based on the SCAQMD Draft WAIRE Menu Technical Report. This is available at: http://www.aqmd.gov/docs/default-source/planning/fbmsm-docs/waire-menu-technical-report_draft_3-3-20.pdf?sfvrsn=6.
[7] The annual VMT displacement per Level 4 charger is the ratio of the annual energy delivered per charger and the fuel efficiency of a battery electric truck.
[8] The annual GHG reductions associated with the use of a Level 4 charger are estimated using the annual VMT displacement per charger and the GHG emission reduction from additional battery electric trucks per mile.
[9] The number of truck chargers installed was obtained from the Settlement Agreement.

Abbreviations:	Conversion Factors:	
CalEEMod - California Emissions Estimator Model	2204.62	lb/MT
CARB - California Air Resources Board	1.00E-06	MT/gram
CH4 - methane	0.001	MWh to KWh
CO2 - carbon dioxide	907185	gram/ton
CO2e - carbon dioxide equivalents	453.59	gram/lb
EMFAC - CARB Emissions Factor Model		
EV - electric vehicle	Constants:	
GHG - greenhouse gases	365	Days per Year
gms - grams	1	GWP for CO_2
GWP - Global Warming Potential	25	GWP for CH_4

TABLE 3.1-8
GHG EMISSION REDUCTIONS FROM LEVEL 4 ELECTRIC VEHICLE CHARGERS AT TEJON RANCH COMMERCE CENTER

Estimating Emissions Reduction to Replace Class 4-8 Diesel Trucks with Electric Trucks		
kWh - kilowatt-hour MT - metric tonnes MWh - megawatt-hour N2O - nitrous oxide SCAQMD - South Coast Air Quality Management District SCE - Southern California Edison VMT - vehicle miles traveled	298	GWP for N_2O

The Settlement Agreement further requires the Project to install 3,500 electric vehicle chargers in commercial areas on-site, and an additional 19,333 chargers near residences to ensure that there is one charging station for each planned single family or multifamily dwelling unit. These charging stations will reduce emissions by encouraging electric vehicle operation, and will also be fueled with clean electricity due to Centennial's commitments to source clean energy, as shown in Tables 3.1-9 and 3.1-10.

TABLE 3.1-9
GHG EMISSION REDUCTIONS FROM ON-SITE ELECTRIC VEHICLE CHARGING STATIONS AT COMMERCIAL SITES

Estimating GHG Emissions Reduction to Replace Gasoline Vehicles with Electric Vehicles		
Project Electricity Emission Factor[1]	0.00	(MT CO2e/MWh)
Electric Vehicle Fuel Economy[2]	0.4	(kWh/mile)
Gasoline/Diesel CO2e Emissions while Running[3]	227	(gms/mile)
Annual VMT Reduction per Charging Station[4]	91,250	(miles/charging station/year)
Number of Electric Chargers[5]	3,500	(chargers)
Annual VMT Reduction All Stations[6] (Based on Charge)	319,375,000	(miles/year)
Estimated Benefit from Installing Electric Vehicle Charging Stations in Non-Residential Development Area		
GHG Emissions of Gasoline/Diesel Vehicle	72,428	(MT CO2e/year)
GHG Emissions of Electric Vehicle	0	(MT CO2e/year)
GHG Emissions Reduction[7]	72,428	(MT CO2e/year)
GHG Reduction per Parking Space with Charging per Year	21	(MT CO2e/charger/year)
On-Site Non-Residential LDA EV Chargers[8]	3,500	(chargers)
Total GHG Reductions from On-Site Non-Residential LDA EV Chargers[9]	72,428	(MT CO2e/year)

TABLE 3.1-9
GHG EMISSION REDUCTIONS FROM ON-SITE ELECTRIC VEHICLE CHARGING STATIONS AT COMMERCIAL SITES

Estimating GHG Emissions Reduction to Replace Gasoline Vehicles with Electric Vehicles

Notes:

[1] CO_2e intensity factors from electricity are expected to be zero to reflect participation in Southern California Edison's Clean Power Plan.

[2] Based on the upper end of the range of fuel economies provided by the United States Alternative Fuels Data Center for electric vehicles. This is available at: https://afdc.energy.gov/fuels/electricity-benefits.

[3] The emission factor was obtained from EMFAC2017.

[4] The annual VMT reduction is estimated based on an estimate of ten hours of charge time for a Level 2 charging station that charges at a rate of 25 miles of driving range per hour.

[5] The number of charging stations is based on total project commitments for installing chargers on-site at non-residential properties.

[6] The annual VMT reduction from all stations is the annual VMT reduction per charging station multiplied by the number of electric chargers.

[7] The GHG emission reduction is calculated by subtracting the GHG Emission of an electric vehicles from the GHG emissions of a gasoline/diesel vehicle.

[8] This value was obtained from the Settlement Agreement.

[9] The total GHG reductions from on-site non-residential passenger vehicles EV chargers is the number of on-site non-residential passenger vehicles EV chargers multiplied by the GHG reduction per parking space with charging per year.

Abbreviations:

CalEEMod - California Emissions Estimator Model
CARB - California Air Resources Board
CH4 - methane
CO2 - carbon dioxide
CO2e - carbon dioxide equivalents
EMFAC - CARB Emissions Factor Model
EV - electric vehicle
GHG - greenhouse gases
gms - grams
lb - pound
LDA- light duty automobiles
kWh - kilowatt-hour
N2O - nitrous oxide
MT - metric tonnes
MWh - megawatt-hour
SCE - Southern California Edison
TDM - Transportation Demand Management
VMT - vehicle miles traveled

Conversion Factors:

2204.62	lb/MT
1.00E-06	MT/gram
0.001	MWh to KWh
0.907185	MT/ton
347	operation days/yr (ba on EMFAC)

IPCC AR4 Global Warming Potentials (GW

CO2	1
CH4	25
N2O	298

TABLE 3.1-10
GHG EMISSION REDUCTIONS FROM ON-SITE ELECTRIC VEHICLE CHARGING STATIONS AT RESIDENTIAL SITES

Estimating GHG Emissions Reduction to Replace Gasoline Vehicles with Electric Vehicles		
Project Electricity Emission Factor[1]	0.00	(MT CO2e/MWh)
Electric Vehicle Fuel Economy[2]	0.4	(kWh/mile)
Gasoline/Diesel CO_2e Emissions while Running[3]	227	(gms/mile)
Annual VMT Reduction per Charging Station[4]	11,738	(miles/charging station/year)
Number of Electric Chargers[5]	19,333	(chargers)
Annual VMT Reduction All Stations[6] (Based on Charge)	226,922,413	(miles/year)
Estimated Benefit from Installing Electric Vehicle Charging Stations in Residential Development Area		
GHG Emissions of Gasoline/Diesel Vehicle	51,462	(MT CO_2e/year)
GHG Emissions of Electric Vehicle	0	(MT CO_2e/year)
GHG Emissions Reduction[7]	51,462	(MT CO_2e/year)
GHG Reduction per Parking Space with Charging per Year	3	(MT CO_2e/charger/year)
On-Site Residential LDA EV Chargers[8]	19,333	(chargers)
Total GHG Reductions from On-Site Residential LDA EV Chargers[9]	**51,462**	**(MT CO2e/year)**

Notes:

[1] CO2e intensity factors from electricity are expected to be zero to reflect participation in Southern California Edison's Clean Power Plan.

[2] Based on the upper end of the range of fuel economies provided by the United States Alternative Fuels Data Center for electric vehicles. This is available at: https://afdc.energy.gov/fuels/electricity-benefits.

[3] The emission factor was obtained from EMFAC2017.

[4] The annual VMT reduction is estimated based on the annual VMT for electric passenger vehicles in EMFAC2017.

[5] The number of charging stations is based on total project commitments for installing chargers on-site for residential properties (one EVSE per dwelling unit).

[6] The annual VMT reduction from all stations is the annual VMT reduction per charging station multiplied by the number of electric chargers.

[7] The GHG emission reduction was calculated by subtracting the GHG Emission of an electric vehicles from the GHG emissions of a gasoline/diesel vehicle.

[8] This value was obtained from the Settlement Agreement.

[9] The total GHG reductions from on-site residential passenger vehicles EV chargers is the number of on-site residential passenger vehicles EV chargers multiplied by the GHG reduction per parking space with charging per year.

Conversion Factors:

2204.62	lb/MT
1.00E-06	MT/gram
0.001	MWh to KWh
0.907185	MT/ton
347	operation days/yr (based on EMFAC)

IPCC AR4 Global Warming Potentials (GWP):

CO_2	1
CH_4	25
N_2O	298

Abbreviations:

CalEEMod - California Emissions Estimator Model
CARB - California Air Resources Board
lb - pound
LDA- light-duty automobiles

TABLE 3.1-10
GHG EMISSION REDUCTIONS FROM ON-SITE ELECTRIC VEHICLE CHARGING STATIONS AT RESIDENTIAL SITES

CH_4 - methane	kWh - kilowatt-hour
CO_2 - carbon dioxide	MT - metric tonnes
CO_2e - carbon dioxide equivalents	MWh - megawatt-hour
EMFAC - CARB Emissions Factor Model	N_2O - nitrous oxide
EV - electric vehicle	SCE - Southern California Edison
EVSE - Electric Vehicle Supply Equipment	TDM - Transportation Demand Management
GHG - greenhouse gases	VMT - vehicle miles traveled
gms - grams	

The Project must also install 5,000 chargers within local disadvantaged communities. While Centennial's energy commitments will not affect these off-site chargers, their use will still serve to reduce mobile emissions by further encouraging use of electric vehicles throughout the region, as shown in Table 3.1-11.

TABLE 3.1-11
GHG EMISSION REDUCTIONS FROM ELECTRIC VEHICLE CHARGING STATIONS AT DISADVANTAGED COMMUNITIES

Estimating GHG Emissions Reduction to Replace Gasoline Vehicles with Electric Vehicles		
Project Electricity Emission Factor[1]	0.17	(MT CO2e/MWh)
Electric Vehicle Fuel Economy[2]	0.4	(kWh/mile)
Gasoline/Diesel CO_2e Emissions while Running[3]	227	(gms/mile)
Annual VMT Reduction per Charging Station[4]	91,250	(miles/charging station/year)
Number of Electric Chargers[5]	5,000	(chargers)
Annual VMT Reduction All Stations[6] (Based on Charge)	456,250,000	(miles/year)
Estimated Benefit from Installing Electric Vehicle Charging Stations in DAC		
GHG Emissions of Gasoline/Diesel Vehicle	103,469	(MT CO_2e/year)
GHG Emissions of Electric Vehicle	30,589	(MT CO_2e/year)
GHG Emissions Reduction[7]	72,881	(MT CO_2e/year)
GHG Reduction per Parking Space with Charging per Year	15	(MT CO_2e/charger/year)
LDA EV Chargers in Disadvantaged Communities[8]	5,000	(chargers)
Total GHG Reductions from LDA EV Chargers in Disadvantaged Communities[9]	**72,881**	**(MT CO2e/year)**

Notes:
[1] CO_2e intensity factors from electricity are from the 2019 EIR, adjusted for RPS requirements in 2035.
[2] Based on the upper end of the range of fuel economies provided by the United States Alternative Fuels Data Center for electric vehicles. Source: https://afdc.energy.gov/fuels/electricity-benefits.
[3] The emission factor was obtained from EMFAC2017.
[4] The annual VMT reduction estimated based on an estimate of ten hours of charge time for a Level 2 charging station that charges at a rate of 25 miles of driving range per hour.

TABLE 3.1-11
GHG EMISSION REDUCTIONS FROM ELECTRIC VEHICLE CHARGING STATIONS AT DISADVANTAGED COMMUNITIES

[5] The number of charging stations based on total project commitments for installing chargers within disadvantaged communities.
[6] The annual VMT reduction from all stations is the annual VMT reduction per charging station multiplied by the number of electric chargers.
[7] The GHG emission reduction was calculated by subtracting the GHG emissions of an electric vehicle from the GHG emissions of a gasoline/diesel vehicle.
[8] The value was obtained from the Settlement Agreement.
[9] The total GHG reductions from LDA EV chargers in disadvantaged communities is the number of LDA EV chargers in disadvantaged communities multiplied by the GHG reduction per parking space with charging per year.

Conversion Factors:

2204.62	lb/MT
1.00E-06	MT/gram
0.001	MWh to KWh
0.907185	MT/ton
347	operation days/yr (based on EMFAC)

IPCC AR4 Global Warming Potentials (GWP):

CO_2	1
CH_4	25
N_2O	298

Abbreviations:

CalEEMod - California Emissions Estimator Model	lb - pound
CARB - California Air Resources Board	LDA- light-duty automobiles
CH_4 - methane	kWh - kilowatt-hour
CO_2 - carbon dioxide	MT - metric tonnes
CO_2e - carbon dioxide equivalents	MWh - megawatt-hour
DEIR - Draft Environmental Impact Report	RPS - Renewable Portfolio Standard
EMFAC - CARB Emissions Factor Model	SCE - Southern California Edison
EV - electric vehicle	TDM - Transportation Demand Management
EVSE - Electric Vehicle Supply Equipment	VMT - vehicle miles traveled
GHG - greenhouse gases	
gms - grams	

The EV charger utilization assumptions used to calculate the total reductions shown in Tables 3.1-8 through 3.1-11 are an estimate to reflect the increase in EV penetration consistent with California's mobile source decarbonization goals.

The 2024 Electric Vehicle Outlook published by Bloomberg New Energy Finance (BNEF) projects that by 2040, it is expected that 73 percent of global passenger vehicle sales will be electric.[5] Similarly, the International Energy Agency (IEA) anticipates that by 2035, global sales of light-duty vehicles will represent nearly 55% of the market share.[6] A report published by PWC estimates that by 2040, there could be 20 times more electric vehicles on

[5] Bloomberg NEF. Electric Vehicle Outlook 2024. Available at: https://assets.bbhub.io/professional/sites/24/847354_BNEF_EVO2024_ExecutiveSummary.pdf. Accessed: January 2025.

[6] IEA. Outlook for Electric Mobility. Available at: https://www.iea.org/reports/global-ev-outlook-2024/outlook-for-electric-mobility. Accessed: January 2025.

the road in the US than there were in 2023.[7] While the projections from each report vary, they all point toward high levels of EV sales and adoption in the near future. Additionally, these reports are focused on EV sales nationwide and globally, and are assumed to be a conservative estimate for California's electric car sales.

California Executive Order (EO) N-79-20 set ambitious goals to push the California Air Resources Board (CARB) and California consumers towards a zero-emission vehicle future.[8] EO N-79-20 targets 100% of in-state sales of passenger vehicles and trucks of zero-emission vehicles by 2035, 100% of the medium- and heavy-duty vehicles sold and operated in the state to be zero-emission vehicles by 2045, and all drayage trucks to be zero-emission by 2035. In 2024, zero emission vehicles already represented over 25% of new car sales in California, and this share is expected to increase significantly by Project buildout to meet regulatory standards.[9]

CARB has passed a suite of regulations that align with the goals of EO N-79-20. The Advanced Clean Cars II regulation requires all new passenger cars, trucks, and SUVs solid in California to be zero-emission vehicles by 2035.[10] Advanced Clean Trucks intends to accelerate the transition of medium- and heavy-duty vehicles by requiring increased percentages of zero-emission truck sales and mandating reporting for companies and fleets.[11] Advanced Clean Fleets requires drayage trucks, government fleets, and high-priority fleets to purchase to zero-emission vehicles.[12] These regulations are intended to decarbonize the mobile sector and will aid in the transition towards electric vehicles expected at Project buildout.

The 2019 EIR assumed that the EV population would increase by 1,150%, from 4% as assumed in CalEEMod model defaults, to an anticipated 50% market share by Project buildout. Current data from Electrify America's most recent report to CARB evaluates the usage rates of public chargers in California as well as those that are available at workplaces or multi-unit dwelling charging stations.[13] Per this report, public chargers are used 7 hours per day, and chargers at workplaces or multi-unit dwellings are used 2.8 hours per day throughout the state. On average these chargers are used for over 3.9 hours per day. Thus,

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7 PWC. EV Charging Growth: How Can Power and Utilities Prepare? Available at: https://www.pwc.com/us/en/industries/energy-utilities-resources/library/ev-charging-power-and-utilities.html. Accessed: January 2025.

8 State of California. Executive Order N-79-20. Available at: https://www.gov.ca.gov/wp-content/uploads/2020/09/9.23.20-EO-N-79-20-Climate.pdf. Accessed: January 2025.

9 California Energy Commission. New ZEV Sales in California. Available at: https://www.energy.ca.gov/data-reports/energy-almanac/zero-emission-vehicle-and-infrastructure-statistics-collection/new-zev. Accessed: January 2025.

10 CARB. Advanced Clean Cars Program. Available at: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-cars-program. Accessed: January 2025.

11 CARB. Advanced Clean Trucks Regulation. Available at: https://ww2.arb.ca.gov/sites/default/files/2023-06/ACT-1963.pdf. Accessed: January 2025.

12 CARB. Advanced Clean Fleets. Available at: https://ww2.arb.ca.gov/our-work/programs/advanced-clean-fleets. Accessed: January 2025.

13 CARB. Quarterly Electrify America Reports to CARB. Available at: https://ww2.arb.ca.gov/resources/documents/electrify-america-reports. Accessed: January 2025.

the current assumption of 10 hours per day of public EV charger utilization is conservative given the anticipated increase in EVs. This usage rate represents an increase of 155% from current usage, which is significantly lower than the EV growth expected within California during that same timeframe. Additionally, the Settlement Agreement reduces GHGs by prohibiting the use of fossil fuel fireplaces at the Project.

The Project must also implement various measures to reduce their GHG emissions related to energy. The Settlement Agreement prohibits the use of residential and non-essential non-residential natural gas. These commitments decrease the Project's GHG emissions inventory by requiring use of electricity instead of natural gas on-site. Since Centennial has committed to participate in Southern California Edison's Clean Power Plan, there are no additional GHG emissions expected with this on-site electricity use, as shown in Tables 3.1-12 and 3.1-13.

TABLE 3.1-12
COMMITMENT TO NO NATURAL GAS EMISSIONS FROM RESIDENTIAL BUILDINGS

Land Use	Energy Use[1]		Total New Electricity Usage Including Usage from All Removed Natural Gas (MWh/yr)[2,3]	Remaining Natural Gas Usage[6] (MMBtu/yr)
	Electricity (MWh/yr)	Natural Gas (MMBtu/yr)		
Single-Family Housing	59,030	340,900	141,919	0
Apartments Mid Rise	11,060	71,130	28,355	0
Total	**70,090**	**412,030**	**170,274**	**0**
Associated GHG (MT CO_2e/year)[4,5]	**0**	**22,118**	**0**	**0**

Notes:
[1] The residential energy usages were obtained from the 2019 EIR.
[2] The residential natural gas usages were broken down into end use distribution (space heating, water heating, space cooling, other), based on 2015 Residential Energy Consumption Survey. Data used is for the Pacific census region. This is available at: https://www.eia.gov/consumption/residential/data/2015/c&e/pdf/ce4.5.pdf.
[3] The residential natural gas usages were converted into equivalent electricity usages by multiplying by the ratio of efficiencies between natural gas and equivalent electric appliances.
The space heating efficiency values are available at: https://www.energy.gov/energysaver/home-heating-systems/furnaces-andboilers and https://www.eia.gov/todayinenergy/detail.php?id=14051.
The water heating efficiencies are available at: https://web.archive.org/web/20220403072909/https://www.energy.gov/eere/femp/energy-cost-calculator-electric-and-gas-waterheaters.
It was conservatively assumed that the ratio of natural gas and electric efficiencies for space cooling and cooking appliances was 1:1.
[4] The electricity usage is converted into GHG emissions based on an intensity of 0 lb CO2e/MWh, assuming the Project is supplied by clean energy.
[5] The natural gas usage is converted into GHG emissions based on emission factors obtained from CalEEMod Appendix D. This is available at: http://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/appendix-d2020-4-0-fullmerge.pdf?sfvrsn=12.
[6] The conversion of the electricity usage and natural gas into GHG emissions results in the assumption that the remaining natural gas usage is zero.

Conversion
3412.14 Btu/kWh

TABLE 3.1-12
COMMITMENT TO NO NATURAL GAS EMISSIONS FROM RESIDENTIAL BUILDINGS

Land Use	Energy Use[1]		Total New Electricity Usage Including Usage from All Removed Natural Gas (MWh/yr)[2,3]	Remaining Natural Gas Usage[6] (MMBtu/yr)
	Electricity (MWh/yr)	Natural Gas (MMBtu/yr)		
0	lb CO2e/MWh, intensity factor used to reflect participation in SCE's Clean Power Plan			
2204.62	lb/MT			
118.35	lb CO2e/MMBtu, CalEEMod default natural gas emission factor			

Abbreviations
CalEEMod - California Emissions Estimator Model
CO2e - carbon dioxide equivalents
DEIR - Draft Environmental Impact Report
GHG - greenhouse gases
lb - pound
MMBtu - million British thermal units
MT - metric tonnes
MWh - megawatt-hour
SCE - Southern California Edison
yr - year

TABLE 3.1-13
COMMITMENT TO NO NATURAL GAS EMISSIONS
FROM COMMERCIAL BUILDINGS

Land Use	Energy Use[1]		Total New Electricity Usage Including Usage from All Removed Nonessential Natural Gas (MWh/yr)[3,4]	Remaining Nonessential Natural Gas Usage[7] (MMBtu/yr)
	Electricity (MWh/yr)	Nonessential Natural Gas (MMBtu/yr)[2]		
Elementary School	1,834	4,577	3,014	0
General Light Industry	1,007	2,419	1,631	0
Government (Civic Center)	9,219	10,414	11,904	0
Health Club	689	1,654	1,116	0
High School	1,273	3,178	2,092	0
Office Park	46,430	45,634	58,196	0
Regional Shopping Center	6,465	1,217	6,779	0
Total	**66,917**	**69,092**	**84,731**	**0**
Associated GHG (MT CO2e/year)[5,6]	**0**	**3,709**	**0**	**0**

Notes:

[1] The commercial energy usages were obtained from the 2019 EIR.

[2] The natural gas used for space heating, space cooling, and cooking is considered nonessential. Accordingly, 92% of natural gas is nonessential based on data from Table E-4 of the CEUS dashboard. This is available at: https://planning.lacity.org/eir/CrossroadsHwd/deir/files/references/C19.pdf. The remaining 8% of natural gas use in the 2019 EIR (5,748 MMBtu/yr) was assumed to be essential.

[3] The commercial natural gas usages are broken down into end use distribution (space heating, water heating, space cooling, other), based on 2006 California Commercial End-Use Survey. This is available at: https://planning.lacity.org/eir/CrossroadsHwd/deir/files/references/C19.pdf.

[4] The commercial natural gas usages are converted into equivalent electricity usages by multiplying by the ratio of efficiencies between natural gas and equivalent electric appliances.

The space heating efficiency values are available at: https://www.energy.gov/energysaver/home-heating-systems/furnaces-andboilers and https://www.eia.gov/todayinenergy/detail.php?id=14051.

The water heating efficiencies are available at: https://web.archive.org/web/20220403072909/https://www.energy.gov/eere/femp/energy-cost-calculator-electric-and-gaswater-heaters.

It was conservatively assumed that the ratio of natural gas and electric efficiencies for space cooling and cooking appliances was 1:1.

[5] The electricity usage is converted into GHG emissions based on an intensity of 0 lb CO_2e/MWh, assuming the Project is supplied by clean energy.

[6] The natural gas usage is converted into GHG emissions based on emission factors obtained from CalEEMod Appendix D. This is available at: http://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/appendix-d2020-4-0-fullmerge.pdf?sfvrsn=12.

[7] The conversion of the electricity usage and natural gas into GHG emissions results in the assumption that the remaining natural gas usage is zero.

Conversion

3412.14	Btu/kWh
0	lb CO_2e/MWh, intensity factor used to reflect participation in SCE's Cle Power Plan

TABLE 3.1-13
COMMITMENT TO NO NATURAL GAS EMISSIONS
FROM COMMERCIAL BUILDINGS

Land Use	Energy Use[1]		Total New Electricity Usage Including Usage from All Removed Nonessential Natural Gas (MWh/yr)[3,4]	Remaining Nonessential Natural Gas Usage[7] (MMBtu/yr)
	Electricity (MWh/yr)	Nonessential Natural Gas (MMBtu/yr)[2]		
2204.62 lb/MT				
118.35 lb CO_2e/MMBtu, CalEEMod default natural gas emission factor				
92% Percentage of natural gas that is non-essential				

Abbreviations
CalEEMod - California Emissions Estimator Model
CEUS – Commercial End-Use Survey
CO_2e - carbon dioxide equivalents
DEIR - Draft Environmental Impact Report
GHG - greenhouse gases
lb - pound
MMBtu - million British thermal units
MT - metric tonnes

Through these aggressive energy commitments that align with State policy goals and initiatives, the Project will not have any annual GHG emissions due to energy procurement and use at full buildout and throughout its operation, as shown in Table 3.1-14.

TABLE 3.1-14
ENERGY CALCULATION

Parameter	Emissions (MT CO_2e/year)
Energy Emissions Inventory in FEIR GHG Report[1]	**55,047**
Reductions from Commitment to No Natural Gas at Residential Uses (Table 9)[2]	-22,118
Reductions from Commitment to No Natural Gas at Non-Essential Non-Residential Uses (Table 10)[3]	-3,709
Subtotal: Remaining Energy Inventory, No Natural Gas	**29,220**
Reductions from Commitment to all Renewable On-Site Electricity[4]	-29,220
Final Energy Emissions Inventory	**0**

Notes:
[1] The Updated Greenhouse Gas Calculations for the Centennial Project Final Environmental Impact Report lists an energy emissions inventory of 55,047 MT CO2e per year.
[2] The estimate of reductions from the commitment to eliminate natural gas use at residential uses is outlined in Settlement Agreement commitment #5a and represented in Table 3.1-12.
[3] The estimate of reductions from the commitment to eliminate natural gas use at non-essential non-residential uses is outlined in Settlement Agreement commitment #5a and represented in Table 3.1-13.
[4] The estimate of reductions reflects participation in Southern California Edison's Clean Power Plan, as encouraged in Settlement Agreement commitment #5c.

Abbreviations:
CO2e - carbon dioxide equivalents
FEIR - Final Environmental Impact Report
GHG - greenhouse gas
MT - metric ton

Furthermore, to offset Project emissions, the Settlement Agreement requires that another Tejon Ranch Project – i.e., the Grapevine project located in Kern County - to prohibit all residential natural gas usage. This will further reduce the Project's net GHG emissions inventory by requiring electric appliances in place of conventional natural gas units in residential units, as shown in Table 3.1-15.

TABLE 3.1-15
COMMITMENT TO NO NATURAL GAS EMISSIONS FROM RESIDENTIAL BUILDINGS AT THE GRAPEVINE PROJECT

Land Use	Energy Use[1]		Total New Electricity Usage Including Usage from All Removed Natural Gas (MWh/yr)[2,3]	Remaining Natural Gas Usage[6] (MMBtu/yr)
	Electricity (MWh/yr)	Natural Gas (MMBtu/yr)		
Single-Family Housing	32,621	200,314	81,326	0
Apartments Low Rise	7,220	57,905	21,299	0
Total	**39,840**	**258,219**	**102,626**	0
Associated GHG (MT CO2e/year)[4,5]	**1,673**	**13,861**	**4,309**	0

Notes:

[1] The residential energy usages were obtained from the 2019 EIR.

[2] The residential natural gas usages are broken down into end use distribution (space heating, water heating, space cooling, other), based on 2015 Residential Energy Consumption Survey. Data used is for the Pacific census region. This is available at: https://www.eia.gov/consumption/residential/data/2015/c&e/pdf/ce4.5.pdf

[3] The residential natural gas usages are converted into equivalent electricity usages by multiplying by the ratio of efficiencies between natural gas and equivalent electric appliances.

The space heating efficiency values available at: https://www.energy.gov/energysaver/home-heating-systems/furnaces-andboilers and https://www.eia.gov/todayinenergy/detail.php?id=14051.

The water heating efficiencies available at: https://web.archive.org/web/20220403072909/https://www.energy.gov/eere/femp/energy-cost-calculator-electric-and-gaswater-heaters.

It was conservatively assumed that the ratio of natural gas and electric efficiencies for space cooling and cooking appliances was 1:1.

[4] The electricity usage is converted into GHG emissions based on an intensity of 92.56 lb CO2e/MWh, as used in the Project CalEEMod runs.

[5] The natural gas usage is converted into GHG emissions based on emission factors obtained from CalEEMod Appendix D. Available: http://www.aqmd.gov/docs/default-source/caleemod/user-guide-2021/appendix-d2020-4-0-full-merge.pdf?sfvrsn=12.

[6] The conversion of the electricity usage and natural gas into GHG emissions results in the assumption that the remaining natural gas usage is zero.

Conversion

3412.14	Btu/kWh
92.563	lb CO2e/MWh, intensity factor used in CalEEMod runs
2204.62	lb/MT
118.35	lb CO2e/MMBtu, CalEEMod default natural gas emission factor

Abbreviations

CalEEMod - California Emissions Estimator Model
CO2e - carbon dioxide equivalents
DEIR - Draft Environmental Impact Report
GHG - greenhouse gases
lb - pound
MMBtu - million British thermal units
MT - metric tonnes
MWh - megawatt-hour
SCE - Southern California Edison
yr - year

Finally, the Settlement Agreement requires the Project to provide subsidies to replace 500 light-heavy and medium-heavy duty trucks with electric equivalents. These subsidies will directly decrease GHG emissions by replacing conventional vehicles, typically powered with diesel or gasoline, with zero emission alternatives, as shown in Table 3.1-16. It has been conservatively assumed that all of these truck subsidies will go towards replacing light-heavy duty trucks as they are lighter and generate fewer GHG emissions.

TABLE 3.1-16
GHG EMISSION REDUCTIONS FROM EV SUBSIDIES
FOR CLASS 1-3 (LHD) TRUCKS

EMFAC2017 Data[1]			
Calendar Year		2035	
Region		Los Angeles (SC)	
EMFAC2017 LHDT VMT		9,878,971	miles/day
EMFAC2017 LHDT Population		295,394	Trucks
EMFAC2017 LHDT Running Exhaust Emissions	CO_2	5,314	MT/day
	CH_4	0.0181	MT/day
	N_2O	0.3729	MT/day
	CO_2e	5,426	MT/day
EMFAC2017 LHDT Emission Faction	CO_2e	549	g/mile
ZE Class 1-3 Truck Data			
Number of Trucks to be Replaced[2]		500	Trucks
Average Annual VMT[3]		10,936	miles/truck/year
Average Annual GHG Emissions per Truck[4]		6.0	MT CO_2e/truck/year
Total Annual GHG Emissions Reduced[5]		**3,003**	**MT CO_2e/year**

Notes:
[1] The values were obtained from EMFAC2017.
[2] The value for the number of trucks to be replaced was obtained from the Settlement Agreement.
[3] The average Annual VMT was calculated from dividing the LHDT VMT by the LHDT population and multiplying it by the EMFAC Default operational days per year.
[4] The average annual GHG emissions per truck was calculated from multiplying the LHDT emission factor with the average annual VMT.
[5] The total annual GHG emissions reduced is average annual GHG emissions per truck multiplied by the number of trucks to be replaced.

Conversion Factors:

0.907185	MT/ton
327	days/year, EMFAC Default
1000000	g/MT

IPCC AR4 Global Warming Potentials (GWP):

CO_2	1
CH_4	25
N_2O	29
	8

TABLE 3.1-16
GHG EMISSION REDUCTIONS FROM EV SUBSIDIES
FOR CLASS 1-3 (LHD) TRUCKS

Abbreviations:

CARB - California Air Resources Board	IPCC - Intergovernmental Panel on Climate Chang
CH_4 - methane	LHDT - light heavy duty truck
CO_2 - carbon dioxide	MT - metric ton
CO_2e - carbon dioxide equivalents	N_2O - nitrous oxide
EMFAC - CARB Emissions Factor Model	SC - South Coast
g - grams	VMT - vehicle miles traveled
GHG - greenhouse gases	ZE - zero emissions
GWP - global warming potential	

Overall, the Settlement Agreement's robust measures itemized GHG reduction measures, Centennial's energy commitments and prohibition of fossil fuel fireplaces, the Grapevine residential natural gas restriction, and truck incentives will reduce up to 295,078 MT of GHG emissions annually, as shown in Table 3.1-17.

TABLE 3.1-17
CLIMATE RESOLVE AGREEMENT GHG EMISSIONS
REDUCTION SUMMARY

Category	Measure Description	Location (On-Site or Off-Site)	Reductions: Calculated Scenario[1] (MT CO_2e/year)		
			On-Site	Off-Site	Total
From Itemized GHG Mitigation Measures[2]	EV grant program for public agency service fleets *(Table 2)*	Off-Site	--	259	259
	EV grant program for community agencies or organizations *(Table 3)*	Off-Site	--	778	778
	Incentives to purchase school and transit buses and install chargers *(Table 4)*	On-Site	3,730	--	3,730
	Truck chargers installed at Tejon Ranch Commerce Center *(Table 5)*	Off-Site	--	13,208	13,208
	Chargers installed at non-residential structures *(Table 6)*	On-Site	72,428	--	72,428
	Chargers installed at residential dwelling units *(Table 7)*	On-Site	51,462	--	51,462
	Chargers installed in disadvantaged communities *(Table 8)*	Off-Site	--	72,881	72,881
	Prohibition of fossil fuel fireplaces	On-Site	11,056	--	11,056
	Subtotal	--	**138,676**	**87,127**	**225,803**

TABLE 3.1-17
CLIMATE RESOLVE AGREEMENT GHG EMISSIONS REDUCTION SUMMARY

Category	Measure Description	Location (On-Site or Off-Site)	Reductions: Calculated Scenario[1] ($MT CO_2e$/year)		
			On-Site	Off-Site	Total
Reduced by Centennial Energy Requirements[3]	No natural gas for residential uses *(Table 9)*	On-Site	22,118	--	22,118
	No natural gas for non-essential non-residential uses *(Table 10)*	On-Site	3,709	--	3,709
	Commitments to renewable energy *(Table 11)*	On-Site	29,220	--	29,220
	Subtotal	--	**55,047**	**0**	**55,047**
Reduced by Grapevine Residential Gas Restriction[4]	No natural gas infrastructure at the Grapevine *(Table 12)*	Off-Site	--	11,225	**11,225**
Reduced by Class 1-7 Truck Incentives[5]	Reimbursement incentives for heavy-duty vehicles used at Centennial *(Table 13)*	On-Site	3,003	--	**3,003**
	Total Reductions	--	**196,727**	**98,352**	**295,078**

Notes:
[1] Reductions shown as calculated in Tables 3.1-5 through 3.1-16. GHG reductions associated with the prohibition of fossil fuel fireplaces at the Project are expected to emit 11,056 MT of GHG each year per Table 5.21-5 of the 2019 EIR.
[2] The estimate of reductions from the itemized GHG mitigation measures is outlined in the Settlement Agreement commitments #1 through #4 and represented in Table 3.1-5 through Table 3.1-11. This also includes GHG reductions associated with the prohibition of fossil fuel fireplaces at the Project, which were expected to emit 11,056 MT of GHG each year per Table 5.21-5 of the 2019 EIR.
[3] The estimate of reductions from the Project energy requirements is outlined in Settlement Agreement commitment #5 and represented in Tables 3.1-12, 3.1-13, and 3.1-14.
[4] The estimate of reductions from the Grapevine residential gas restriction is outlined in Settlement Agreement commitment #5d and represented in Table 3.1-15.
[5] The estimate of reductions from the Class 1-7 truck incentives is outlined in Settlement Agreement commitment #2d and represented in Table 3.1-16.

Abbreviations:
CO_2e - carbon dioxide equivalents
DEIR - Draft Environmental Impact Report
EV - electric vehicle
GHG - greenhouse gas
MT - metric ton
yr - year

Table 3.1-17 illustrates how Centennial will achieve net-zero GHG emissions for purposes of the 2045 CAP and based on the GHG reduction commitments imposed under the 2019 FEIR and Settlement Agreement. The GHG emission reduction required by the Settlement Agreement far exceeds the verified GHG emission inventory identified in the 2019 FEIR, which was calculated at 157,642 MT CO_2e per year and the conservatively adjusted value of 223,501 MT CO_2e per year. As a result, Centennial, by entering the binding commitments of

the Climate Resolve Agreement, achieves a reduction of GHG emissions in excess of the GHG emissions it creates, resulting in a net-zero project as outlined in 20145 CAP Appendix F.

In addition, the Settlement Agreement requires the Project to achieve an additional "non-itemized GHG reduction" of 232,137.04 MT/Year beyond the reductions summarized above. That requirement alone also would achieve the net-zero project criteria.[14] Moreover, even if the Settlement Agreement did not achieve any additional GHG emission reductions for onsite mobile sources related to EV usage, the Project would still result in net-zero GHG emissions for purposes of 2045 CAP Appendix F, as shown in Table 3.1-18.

TABLE 3.1-18
SETTLEMENT AGREEMENT GHG EMISSIONS REDUCTION SUMMARY
(CONSERVATIVE SCENARIO)

Category	Measure Description	Location (On-Site or Off-Site)	Reductions: Conservative On-Site Mobile Scenario1 (MT CO2e/year)		
			On-Site	Off-Site	Total
From Itemized GHG Mitigation Measures[2]	EV grant program for public agency service fleets *(Table 2)*	Off-Site	--	259	259
	EV grant program for community agencies or organizations *(Table 3)*	Off-Site	--	778	778
	Incentives to purchase school and transit buses and install chargers *(Table 4)*	On-Site	1,925	--	1,925
	Truck chargers installed at Tejon Ranch Commerce Center *(Table 5)*	Off-Site	--	13,208	13,208
	Chargers installed at non-residential structures *(Table 6)*	On-Site	37,377	--	37,377
	Chargers installed at residential dwelling units *(Table 7)*	On-Site	26,557	--	26,557
	Chargers installed in disadvantaged communities *(Table 8)*	Off-Site	--	72,881	72,881
	Prohibition of fossil fuel fireplaces	On-Site	11,056	--	11,056
	Subtotal	--	**76,915**	**87,127**	**164,042**
Reduced by Centennial Energy Requirements[3]	No natural gas for residential uses *(Table 9)*	On-Site	22,118	--	22,118
	No natural gas for non-essential non-residential uses *(Table 10)*	On-Site	3,709	--	3,709
	Commitments to renewable energy *(Table 11)*	On-Site	29,220	--	29,220
	Subtotal	--	**55,047**	**0**	**55,047**

[14] As recognized by the California Air Resources Board, "Tejon Ranch Company, the developer for the Centennial Specific Plan located in northern Los Angeles County, also committed its development to result in no net increase of GHG emissions." CARB, *2022 Scoping Plan for Achieving Carbon Neutrality*, Appendix D, at 25-26.

TABLE 3.1-18
SETTLEMENT AGREEMENT GHG EMISSIONS REDUCTION SUMMARY
(CONSERVATIVE SCENARIO)

Category	Measure Description	Location (On-Site or Off-Site)	Reductions: Conservative On-Site Mobile Scenario1 (MT CO2e/year)		
			On-Site	Off-Site	Total
Reduced by Grapevine Residential Gas Restriction[4]	No natural gas infrastructure at the Grapevine *(Table 12)*	Off-Site	--	11,225	**11,225**
Reduced by Class 1-7 Truck Incentives[5]	Reimbursement incentives for heavy-duty vehicles used at Centennial *(Table 13)*	On-Site	3,003	--	**3,003**
	Total Reductions	--	**134,965**	**98,352**	**233,317**

Notes:
[1] Reductions shown as calculated in Tables 3.1-5 through 3.1-13. GHG reductions associated with the prohibition of fossil fuel fireplaces at the Project are expected to emit 11,056 MT of GHG each year per Table 5.21-5 of the 2019 EIR. The 2019 EIR calculated that 65,859 MT CO2e per year would be reduced by assuming a EV utilization rate of 50% at Project buildout. Reductions from the on-site mobile commitments presented in Tables 3.1-7, 3.1-9, and 3.1-10 were scaled down to ensure that reductions attributed to on-site mobile measures do not exceed this value.
[2] The estimate of reductions from the itemized GHG mitigation measures is outlined in the Settlement Agreement commitments #1 through #4 and represented in Table 3.1-5 through Table 3.1-11. This also includes GHG reductions associated with the prohibition of fossil fuel fireplaces at the Project, which were expected to emit 11,056 MT of GHG each year per Table 5.21-5 of the 2019 EIR.
[3] The estimate of reductions from the Project energy requirements is outlined in Settlement Agreement commitment #5 and represented in Tables 3.1-12, 3.1-13, and 3.1-14.
[4] The estimate of reductions from the Grapevine residential gas restriction is outlined in Settlement Agreement commitment #5d and represented in Table 3.1-15.
[5] The estimate of reductions from the Class 1-7 truck incentives is outlined in Settlement Agreement commitment #2d and represented in Table 3.1-16.

Abbreviations:
CO_2e - carbon dioxide equivalents
DEIR - Draft Environmental Impact Report
EV - electric vehicle
GHG - greenhouse gas
MT - metric ton
yr - year

In Table 3.1-18, the GHG reductions associated with onsite mobile source reduction measures is conservatively assumed to achieve a lower amount of GHG reductions equivalent to the mobile source GHG reductions than were originally assumed in the 2019 EIR. As detailed in Table 3.1-4, the 2019 EIR mobile emissions inventory change related to the EV assumptions is 65,859 MT CO_2e per year. In Table 3.1-18, the GHG reductions associated with onsite mobile commitments, as calculated in Tables 3.1-7, 3.1-9, and 3.1-10 were scaled to only achieve the equivalent GHG reduction assumed by the 2019 EIR for EV use (i.e., 65,859 MT CO_2e per year). This calculation demonstrates that even if the Settlement Agreement did not require any further GHG emission reductions related to EV usage for the onsite mobile sources, the Project would nevertheless result in a net-zero project for purposes of the 2045 CAP. Thus, even under the most conservative assumptions, the Project

is consistent with, and would not conflict with, AQ Policy 3.1 of the 2035 General Plan or the 2045 CAP's GHG reduction goals.

The Project is Consistent With, and Would Not Conflict With, The Regional Sustainable Communities Strategy

As discussed, the Court Order specifically upheld the 2019 EIR's determination that the Approved Project is consistent with the 2016-2040 RTP/SCS adopted by SCAG to establish a regional land use pattern capable of achieving regional GHG reduction for the land use sector established by CARB. In September 2020, SCAG adopted the 2020 RTP/SCS, commonly known as Connect SoCal, which superseded the 2016 RTP/SCS. Like the 2016 RTP/SCS, however, the 2020 RTP/SCS included in the Approved Project in its land use assumptions. Subsequently, in April 2024, SCAG adopted its 2024-2050 Regional Transportation Plan/Sustainable Communities Strategy ("2024 RTP/SCS"), which superseded the 2020 RTP/SCS. Like the 2016 RTP/SCS and 2020 RTP/SCS, the 2024 RTP/SCS includes the Approved Project's unit count and square footage in its land use assumptions. Since the Approved Project is expressly included as part of the 2024 RTP/SCS land use and transportation plan for achieving CARB's regional GHG reduction target, and since the Proposed Modification would not change the Approved Project's unit count or square footage, the Approved Project with Proposed Modifications is consistent with, and would not conflict with, the 2024 RTP/SCS

The GHG impacts of the Approved Project with Project Modifications in relation to consistency with GHG reduction plans and policies **are considered less than significant under GHG Threshold 2.**

Cumulative Impact Significance Determination

As discussed, GHG emissions are generally addressed as a cumulative issue because the effects of GHG emissions are considered in a global context, that is, global warming and climate change. With implementation of the Approved Project's 2019 EIR mitigation measures, including Mitigation Measures MM 21-1 through MM 22-2 and compliance with applicable GHG reducing regulatory programs, the Modified Project is estimated to generate GHG emissions of approximately 157,642 $MTCO_2e$/yr, though actual GHG emissions may be somewhat lower due to the Modified Project's provision of battery storage and microgrid technologies as permitted or conditionally permitted uses within the Specific Plan area.

While this level of GHG emissions has the potential to result in a cumulative contribution to cumulative emissions related to global climate change, the Project applicant has entered into a binding and enforceable legal agreement that requires the Modified Project to achieve zero net GHG emissions (i.e., no net increase above existing conditions) through a combination of feasible and reliable GHG reduction measures. With implementation of this binding Settlement Agreement, and resulting achievement of zero net GHG emissions, the Modified Project would not substantially contribute to any cumulative GHG emissions and would be consistent with, and would not conflict with, an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases, as discussed under GHG Threshold 1 and GHG Threshold 2, above. Additionally, the Modified Project's incremental

contribution to GHG emissions would not be cumulatively considerable because the Modified Project would comply with the 2045 CAP by achieving net-zero GHG emissions, as discussed above. This cumulative impact significance conclusion does not depend on the state's Cap and Trade regulatory program for any reduction in Project GHG emissions. Accordingly, with continued implementation of the 2019 EIR mitigation measures MM 21-1 through MM 22-2, **the cumulative GHG impacts of the Approved Project with Project Modifications would be less than significant**.

3.1.6 REFERENCES

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3.2 WILDFIRE

3.2.1 INTRODUCTION

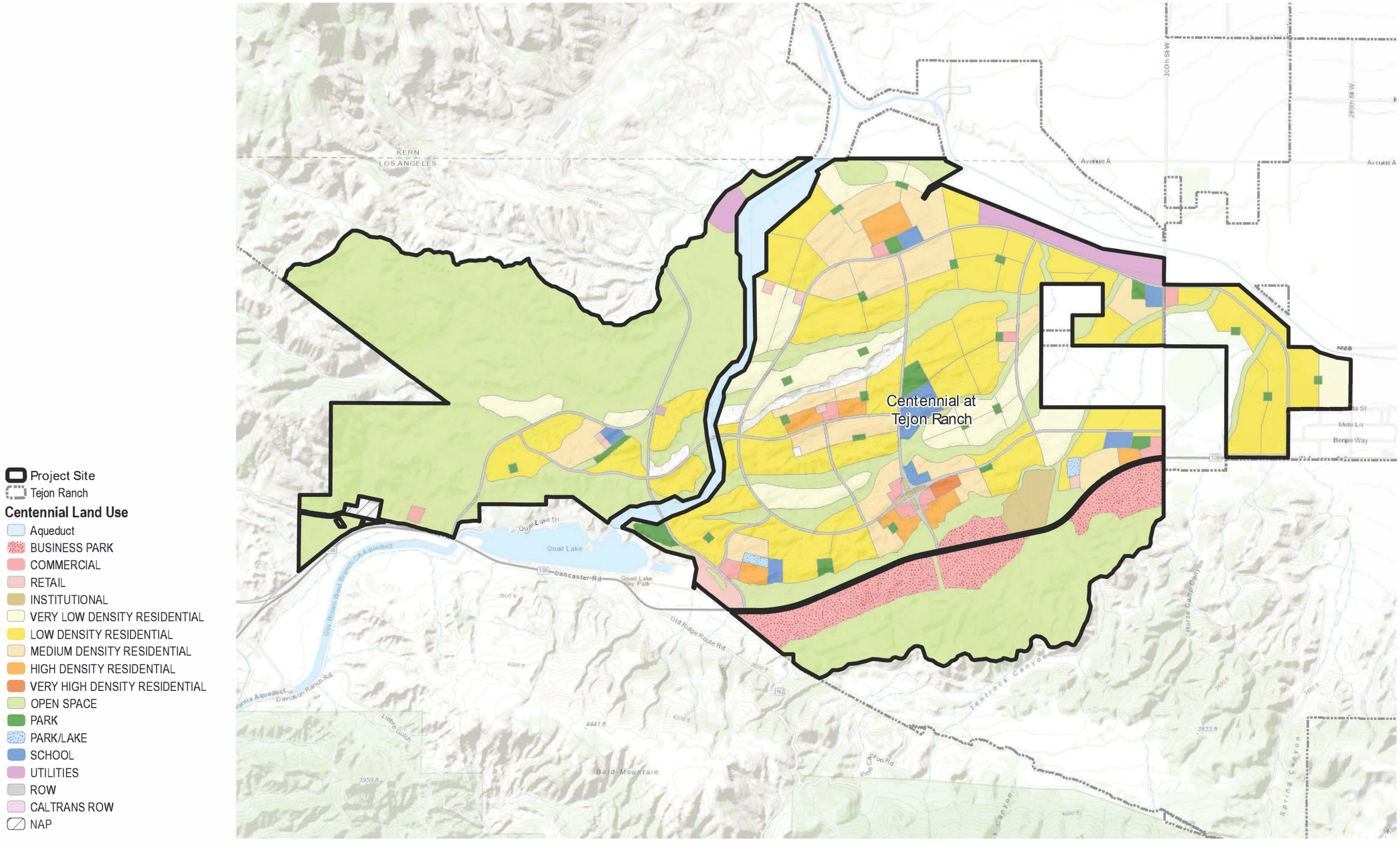
The County of Los Angeles Department of Regional Planning Environmental Checklist Form, which has been prepared pursuant to the California Environmental Quality Act (CEQA), requires that potential project impacts related to wildfire be evaluated as part of the environmental documentation process.

The potential wildfire impacts of the approved Centennial Specific Plan Project (Approved Project) were disclosed and analyzed in the Centennial Specific Plan Draft Environmental Impact Report (2019 DEIR) and Consolidated Final Environmental Impact Report (2019 FEIR) (collectively, the "2019 EIR"). The 2019 EIR was certified by the Los Angeles County Board of Supervisors on April 30, 2019, but it was subsequently challenged in two separate lawsuits, one of which was brought by Climate Resolve and the other was brought by the Center for Biological Diversity and California Native Plant Society (referred to collectively herein as "CBD/CNPS").

On April 5, 2021, the Los Angeles County Superior Court issued an order ("Court Order"), rejecting all CBD/CNPS and most Climate Resolve arguments that the Centennial EIR was deficient under CEQA. The Court Order specifically upheld almost all components of the EIR's fire hazard analysis, including by way of example the fact that the 2019 EIR adequately disclosed impacts from introducing development and new ignition sources in the area. The Court also found that the 2019 EIR's discussion and analysis of the on-site potential impact of the Approved Project related to wildfires was legally adequate. The Court, however, held that the County failed to proceed as required by law because the 2019 EIR did not adequately analyze wildfire risks beyond the Project site and did not adequately explain why off-site fire risks posed by the Project would be reduced to a less than significant level.

Following issuance of the Court Order, but prior to final judgment in the Climate Resolve action, the Approved Project proponent and Climate Resolve entered into a legally enforceable settlement agreement to finally resolve the Climate Resolve litigation (Settlement Agreement), as set forth in Appendix A. As explained in more detail in Section 2.6 of Chapter 2, Project Description, and in Section 3.2.11 below, the Settlement Agreement requires enhanced wildfire prevention and protection, including on- and off-site fire mitigation commitments, including a Project-specific Fire Protection Plan (FFP) that identifies community fire hazard reduction measures including building design and fuel management requirements. The Settlement Agreement also requires the Project proponent to establish a Good Neighbor Firewise Fund of $500,000 annual to aid communities with a population of less than 10,000 located within 15 miles of the Tejon Ranch in order to reduce off-site fire risks, increase fire prevention, protection, and response measures and reduce or avoid impacts to Project residents and neighboring communities.

Following full execution of the Settlement Agreement, on November 30, 2021, Climate Resolve filed with the Court a dismissal with prejudice of the Climate Resolve litigation, which dismissal was ordered by the Court on December 3, 2021. In early 2022, however, the



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Project Site Plan

Exhibit 3.2-1

Centennial Supplemental Environmental Impact Report

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Map not to scale

PSOMAS

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Court determined that CBD/CNPS was also a prevailing party in the dismissed Climate Resolve lawsuit, and ultimately issued a final judgment ("Judgment") ordering the de-certification of the 2019 EIR and rescission of the entitlements of the Approved Project pending correction of the 2019 EIR's off-site wildfire analysis. An appeal of this Judgment is pending. Until the appeal is resolved, the 2019 EIR remains certified, and the approved entitlements remain in place. This SEIR section describes the existing wildfire conditions of the Project site and surrounding vicinity (Exhibit 3.2-1), identifies associated regulatory requirements, evaluates potential direct, indirect, and cumulative impacts related to fire and wildfire, and identifies mitigation measures related to implementation of the Approved Project with Proposed Modifications.

3.2.2 REGULATORY SETTING

This subsection presents a summary of federal laws, regulations and other actions, state laws, regulations, and other actions, and then local (regional and County) laws, regulations and other actions that are related to the Approved Project.

Federal

Disaster Mitigation Act

The Disaster Mitigation Act of 2000 requires that a state mitigation plan, as a condition of disaster assistance, add incentives for increased coordination and integration of mitigation activities at the state level through the establishment of requirements for two different levels of state plans: "Standard" and "Enhanced." States that develop an approved Enhanced State Plan can increase the amount of funding available through the Hazard Mitigation Grant Program. The Disaster Mitigation Act also established a new requirement for jurisdictions to prepare local mitigation plans.

National Incident Management System

The National Incident Management System (NIMS) guides all levels of government, nongovernmental organizations and the private sector to work together to prevent, protect against, mitigate, respond to and recover from incidents. NIMS provides community members with a shared vocabulary, systems and processes to successfully deliver the capabilities described in the National Preparedness System. The National Preparedness System is a Presidential Policy Directive establishing a common goal to create a secure and resilient nation associated with prevention, protection, mitigation, response and recovery to address the greatest risks to the nation. One core area is fire management and suppression.

NIMS defines operational systems that guide how personnel work together during incidents.

National Fire Protection Association Codes, Standards, Practices, and Guides

National Fire Protection Association standards, recommended practices, and guides are developed through a consensus standards development process approved by the American National Standards Institute. This process brings together professionals representing varied viewpoints and interests to achieve consensus on fire and other safety issues. National Fire Protection Association standards are recommended guidelines and nationally accepted good practices in fire protection but are not laws or codes unless adopted as such or referenced as such by the California Fire Code or the local fire agency.

Federal Wildland Fire Management Policy

The Federal Wildland Fire Management Policy was developed in 1995 and updated in 2001 and 2009 by the National Wildfire Coordinating Group, a federal multi-agency group that establishes consistent and coordinated fire management policy across multiple federal jurisdictions. The Federal Wildland Fire Management Policy acknowledges the essential role of fire in maintaining natural ecosystems. The Federal Wildland Fire Management Policy is based on the following guiding principles, found in the Guidance for Implementation of Federal Wildland Fire Management Policy (NWCG 2009):

- Firefighter and public safety are the first priority in every fire management activity.
- The role of wildland fire as an essential ecological process and natural change agent will be incorporated into the planning process.
- Fire management plans, programs, and activities support land and resource management plans and their implementation.
- Sound risk management is a foundation for all fire management activities.
- Fire management programs and activities are economically viable, based upon values to be protected, costs, and land and resource management objectives.
- Fire management plans and activities are based upon the best available science.
- Fire management plans and activities incorporate public health and environmental quality considerations.
- Federal, state, tribal, local, interagency, and international coordination and cooperation are essential.
- Standardization of policies and procedures among federal agencies is an ongoing objective.

National Fire Plan

The National Fire Plan, officially titled Managing the Impacts of Wildfire on Communities and the Environment: A Report to the President In Response to the Wildfires of 2000, was a presidential directive in 2000 as a response to severe wildland fires that had burned

throughout the United States. The National Fire Plan focuses on reducing fire impacts on rural communities and providing assurance for sufficient firefighting capacity in the future. The plan addresses five key points: firefighting, rehabilitation, hazardous fuels reduction, community assistance, and accountability. The plan provides technical, financial, and resource guidance and support for wildland fire management across the United States. U.S. Forest Service and the Department of the Interior are working to successfully implement the key points outlined in the plan (DOI/USDA 2000).

International Fire Code

Created by the International Code Council, the International Fire Code addresses a wide array of conditions hazardous to life and property, including fire, explosions, and hazardous materials handling or usage. The International Fire Code places an emphasis on prescriptive and performance-based approaches to fire prevention and fire protection systems. Updated every 3 years, the International Fire Code uses a hazards classification system to determine the appropriate measures to be incorporated to protect life and property (often these measures include construction standards and specialized equipment). The International Fire Code uses a permit system (based on hazard classification) to ensure that required measures are instituted (ICC 2021).

Federal Energy Regulatory Commission

The Federal Energy Regulatory Commission requires utilities to adopt and maintain minimum clearance standards between vegetation and transmission voltage power lines. These clearances vary depending on voltage. In most cases, the minimum clearances required in state regulations are greater than the federal requirement. In California for example, the state has adopted General Order 95 rather than the North American Electric Reliability Corporation (NERC) Standards as the electric safety standard for the state (California Public Utilities Commission [CPUC]). Federal Energy Regulatory Commission is not discussed further.

National Electric Safety Code 2023

The National Electric Safety Code covers basic provisions related to electric supply stations, overhead electric supply and communication lines, and underground electric supply and communication lines. The code also contains work rules for construction, maintenance, and operational activities associated with electric supply and communication lines and equipment. The code, which must be adopted by states on an individual basis, is not applicable in the State of California. As stated previously, the State of California has adopted its own standard (General Order 95) rather than a general national standard. The National Electric Safety Code is not discussed further.

North American Electric Reliability Corporation Standards

The NERC is a nonprofit corporation comprising 10 regional reliability councils. The overarching goal of NERC is to ensure the reliability of the bulk power system in North

America. To achieve its goal, the NERC develops and enforces reliability standards, monitors the bulk power systems, and educates, trains, and certifies industry personnel To improve the reliability of regional electric transmission systems and in response to the massive widespread power outage that occurred on the Eastern Seaboard, NERC developed a transmission vegetation management program that is applicable to all transmission lines operated at 200 kilovolts (kV) and above to lower voltage lines designated by the Regional Reliability Organization as critical to the reliability of the electric system in the region. The plan, which became effective on April 7, 2006, establishes requirements of the formal transmission vegetation management program, which include identifying and documenting clearances between vegetation and any overhead, ungrounded supply conductors, while taking into consideration transmission line voltage, the effects of ambient temperature on conductor sag under maximum design loading, fire risk, line terrain and elevation, and the effects of wind velocities on conductor sway The clearances identified must be no less than those set forth in the Institute of Electrical and Electronics Engineers Standard 516- 2021, IEEE *Guide for Maintenance Methods on Energized Power Lines.*

Institute of Electrical and Electronics Engineers Standard 516-2009

The Institute of Electrical and Electronics Engineers is a leading authority in setting standards for the electric power industry. Standard 516-2021, *Guide for Maintenance Methods on Energized Power Lines*, establishes minimum vegetation-to-conductor clearances in order to maintain electrical integrity of the electrical system.

State

California Government Code

California Government Code, Sections 51175 through 51189, provide guidance for classifying lands in California as fire hazard areas and requirements for management of property within those lands. The California Department of Forestry and Fire Protection (CAL FIRE) is responsible for classifying FHSZs based on statewide criteria and makes the information available for public review. Further, local agencies must designate, by ordinance, VHFHSZs within their jurisdiction based on the recommendations of CAL FIRE.

Section 51182 sets forth requirements for maintaining property within fire hazard areas, such as defensible space, vegetative fuels management, and building materials and standards. Defensible space around structures in fire hazard areas must consist of 100 feet of fuel modification on each side of a structure, but not beyond the property line unless findings conclude that the clearing is necessary to significantly reduce the risk of structure ignition in the event of a wildfire. Clearance on adjacent property shall only be conducted following written consent by the adjacent owner. Further, trees must be trimmed from within 10 feet of the outlet of a chimney or stovepipe, vegetation near buildings must be maintained, and roofs of structures must be cleared of vegetative materials. Exemptions may apply for buildings with an exterior constructed entirely of nonflammable materials.

California Code of Regulations

Title 14 Natural Resources

Title 14, Division 1.5, Chapter 7, Subchapter 3, Fire Hazard, also sets forth requirements for defensible space if the distances specified above cannot be met. For example, options that have similar practical effects include noncombustible block walls or fences, 5 feet of noncombustible material horizontally around the structure, installing hardscape landscaping or reducing exposed windows on the side of the structure with a less-than-30-foot setback, or additional structure hardening such as those required in the California Building Code (CBC)—California Code of Regulations Title 24, Part 2, Chapter 7A.

Title 24 California Building Standards Code

California Building Code

Part 2 of Title 24 of the California Code of Regulations contains the CBC. Chapter 7A of the CBC regulates building materials, systems, and/or assemblies used in the exterior design and construction of new buildings located within a fire hazard area. Fire hazard areas as defined by the CBC include areas identified as FHSZs within State Responsibility Areas (SRAs) or wildland–urban interface (WUI) fire areas. The purpose of Chapter 7A is to establish minimum standards for the protection of life and property by increasing the ability of structures located in a fire hazard area to resist the intrusion of flames or burning embers projected by a wildfire, and to contribute to a systematic reduction in structural losses from a wildfire. New buildings located in such areas must comply with the ignition-resistant construction standards outlined in Chapter 7A.

California Fire Code

The California Fire Code (CFC) is a set of regulations that govern fire safety standards and practices within the state of California. It is part of the California Building Standards Code (Title 24 of the California Code of Regulations) and is enforced by local building authorities across the state. The 2022 California Fire Code (CCR Title 24, Part 9) establishes regulations to safeguard against the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises. The Fire Code also establishes requirements intended to provide safety for and assistance to firefighters and emergency responders during emergency operations. The provisions of the Fire Code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of every building or structure throughout California. The Fire Code includes regulations regarding fire-resistance-rated construction, fire protection systems such as alarm and sprinkler systems, fire services features such as fire apparatus access roads, means of egress, fire safety during construction and demolition, and WUI areas. The County has adopted the California Fire Code as Chapter 15.56, as amended, including appendices addressing fire-flow requirements for buildings.

Projects designed in compliance with current fire code requirements exhibit an already high level of fire safety prior to the incorporation of additional project mitigation measures. Many

code requirements such as defensible space, construction materials and methods, and road access, have been developed and confirmed effective through extensive research. For example, a recent study concluded that that a 2008 or newer home with code compliant construction is about 40% less likely to be destroyed than a 1990 home experiencing an identical wildfire exposure (Baylis and Boomhower, 2021).

Additionally, the State Fire Marshal's data shows that homes constructed according to the California Building Code Chapter 7A standards significantly reduce fire risks for properties located in the wildland-urban interface (WUI) and fire hazard severity zones (CBIA, 2022). Additionally, the risk of major structural damage is greatly minimized when homes are part of a well-planned and mitigated master-planned community, such as the Project (FEMA, 2023). According to the Office of the State Fire Marshal (OSFM) Property Loss Data, no master-planned community built after the adoption of California Building Code Chapter 7A has experienced significant structural losses. Therefore, modern code-compliant master planned communities provide a baseline level of high wildfire safety when designed to modern fire code requirements.

Note: The Project would also be subject to Chapter 7A of the 2022 CBC; the 2022 California Residential Code, Section 327. The Project would also be subject to the provisions of Section 4291 of the Public Resources Code; Chapter 12-7A of the CA Reference Standards Code, Title 14, Division 1.5, Chapter 7, Subsection 2, Articles 1-5 and Title 14, Division 1.5, Chapter 7, Subsection 3, Section 1299 of the CA Code of Regulations; Title 19, Division 1, Chapter 7, Subchapter 1, Section 3.07 of the CA Code of Regulations; and Sections 51175-511829 of the CA Government Code.

California Wildland–Urban Interface Code

On September 20, 2005, the California Building Standards Commission approved the Office of the State Fire Marshal's emergency regulations amending the CBC (California Code of Regulations [CCR] Title 24, Part 2). Section 701A of the CBC includes regulations addressing materials and construction methods for exterior wildfire exposure and applies to new buildings located in SRAs or VHFHSZs in Local Response Areas. The California Wildland - Urban Interface Code was adopted in February 2025. Beginning January 2026, the building, fire, and residential codes will be moved into the California Wildland – Urban Interface Code.

California Public Resources Code

California Public Resources Code, Section 4290, requires minimum fire safety standards related to defensible space that are applicable to residential, commercial, and industrial building construction in SRA lands and lands classified and designated as VHFHSZs. These regulations include road standards for fire apparatus access, standards for signs identifying roads and buildings, fuel breaks and green belts, and minimum water supply requirements. These regulations do not supersede local regulations that equal or exceed minimum regulations required by the state.

California Public Resources Code, Section 4291, requires a reduction of fire hazards around buildings located adjacent to a mountainous area, forest-covered lands, brush-covered lands,

grass-covered lands, or land that is covered in flammable material. Section 4291 requires 100 feet of defensible space around all sides of a structure, but not beyond the property line unless required by state law, local ordinance, rule, or regulations. Further, Section 4291 requires the removal of dead or dying vegetative materials from the roof of a structure and trimming of trees and shrubs from within 10 feet of the outlet of a chimney or stovepipe. Exemptions may apply for buildings with an exterior constructed entirely of nonflammable materials.

California Public Utilities Commission General Order 95: Rules for Overhead Transmission Line Construction

General Order 95 was initially adopted by the California Public Utilities Commission in 1941 and was most recently updated in 2020. General Order 95 governs the design, construction, and maintenance of overhead electrical lines. Rule 31.1 generally states that design, construction, and maintenance of overhead electrical lines should be done in accordance with accepted good practices for the given location conditions known at the time by the persons responsible for the design, construction, and maintenance of the overhead electrical lines and equipment. Rule 35 of General Order 95 (Tree Trimming) requires the following:

- 4 feet radial clearances for any conductor of a line operating at 2,400 volts or more, but less than 72,000 volts
- 6 feet radial clearances for any conductor of a line operating at 72,000 volts or more, but less than 110,000 volts
- 10 feet radial clearances for any conductor of a line operating at 110,000 volts or more, but less than 300,000 volts (this would apply to the Approved Project with Proposed Modifications)
- 15 feet radial clearances for any conductor of a line operating at 300,000 volts or more.

California Strategic Fire Plan

The 2019 Strategic Fire Plan for California reflects CAL FIRE's focus on fire prevention and suppression activities to protect lives, property, and ecosystem services, and natural resource management to maintain the state's forests as a resilient carbon sink to meet California's climate change goals and to serve as important habitat for adaptation and mitigation. The Strategic Fire Plan for California provides a vision for a natural environment that is more fire resilient, buildings and infrastructure that are more fire resistant, and a society that is more aware of and responsive to the benefits and threats of wildland fire, all achieved through local, state, federal, tribal, and private partnerships (CAL FIRE 2019). Plan goals include the following (CAL FIRE 2019):

1. Identify and evaluate wildland fire hazards and recognize life, property and natural resource assets at risk, including watershed, habitat, social and other values of functioning ecosystems. Facilitate the collaborative development and sharing of all analyses and data collection across all ownerships for consistency in type and kind.

2. Promote and support local land use planning processes as they relate to: (a) protection of life, property, and natural resources from risks associated with wildland fire, and (b) individual landowner objectives and responsibilities.
3. Support and participate in the collaborative development and implementation of local, county, and regional plans that address fire protection and landowner objectives.
4. Increase fire prevention awareness, knowledge and actions implemented by individuals and communities to reduce human loss, property damage and impacts to natural resources from wildland fires.
5. Integrate fire and fuels management practices with landowner/land manager priorities across jurisdictions.
6. Determine the level of resources necessary to effectively identify, plan and implement fire prevention using adaptive management strategies.
7. Determine the level of fire suppression resources necessary to protect the values and assets at risk identified during planning processes.
8. Implement post-fire assessments and programs for the protection of life, property, and natural resource recovery.

California Mutual Aid

The purpose of Emergency Management Mutual Aid is to provide emergency management personnel and technical specialists to support the disaster operations of affected jurisdictions during an emergency. In accordance with the California Master Mutual Aid Agreement, local and state emergency managers have responded in support of each other under a variety of plans and procedures. Immediately following the 1994 Northridge Earthquake, city and county emergency managers, along with the Coastal, Inland, and Southern Regions of the California Governor's Office of Emergency Services, developed Emergency Management Mutual Aid to provide a valuable service during the emergency response and recovery efforts at the Southern Region Emergency Operations Center, local emergency operations centers, the Disaster Recovery Center, local assistance centers, and in the field. Since that time, Emergency Management Mutual Aid has often been used to deploy emergency managers and other technical specialists not covered by law enforcement or fire mutual aid plans in support of emergency operations and response throughout California.

California Natural Disaster Assistance Act

The California Natural Disaster Assistance Act provides financial aid to local agencies to assist in the permanent restoration of public real property, other than facilities used solely for recreational purposes, when such real property has been damaged or destroyed by a natural disaster. The California Natural Disaster Assistance Act is activated after a local declaration of emergency, after the California Emergency Management Agency gives concurrence with the local declaration, or after the governor issues a proclamation of a state emergency. Once the California Natural Disaster Assistance Act is activated, local

government is eligible for certain types of assistance, depending on the specific declaration or proclamation issued.

State Fire Regulations

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code and include regulations concerning building standards (as also set forth in the CBC), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training. The state fire marshal enforces these regulations and building standards in all state-owned buildings, state-occupied buildings, and state institutions throughout California.

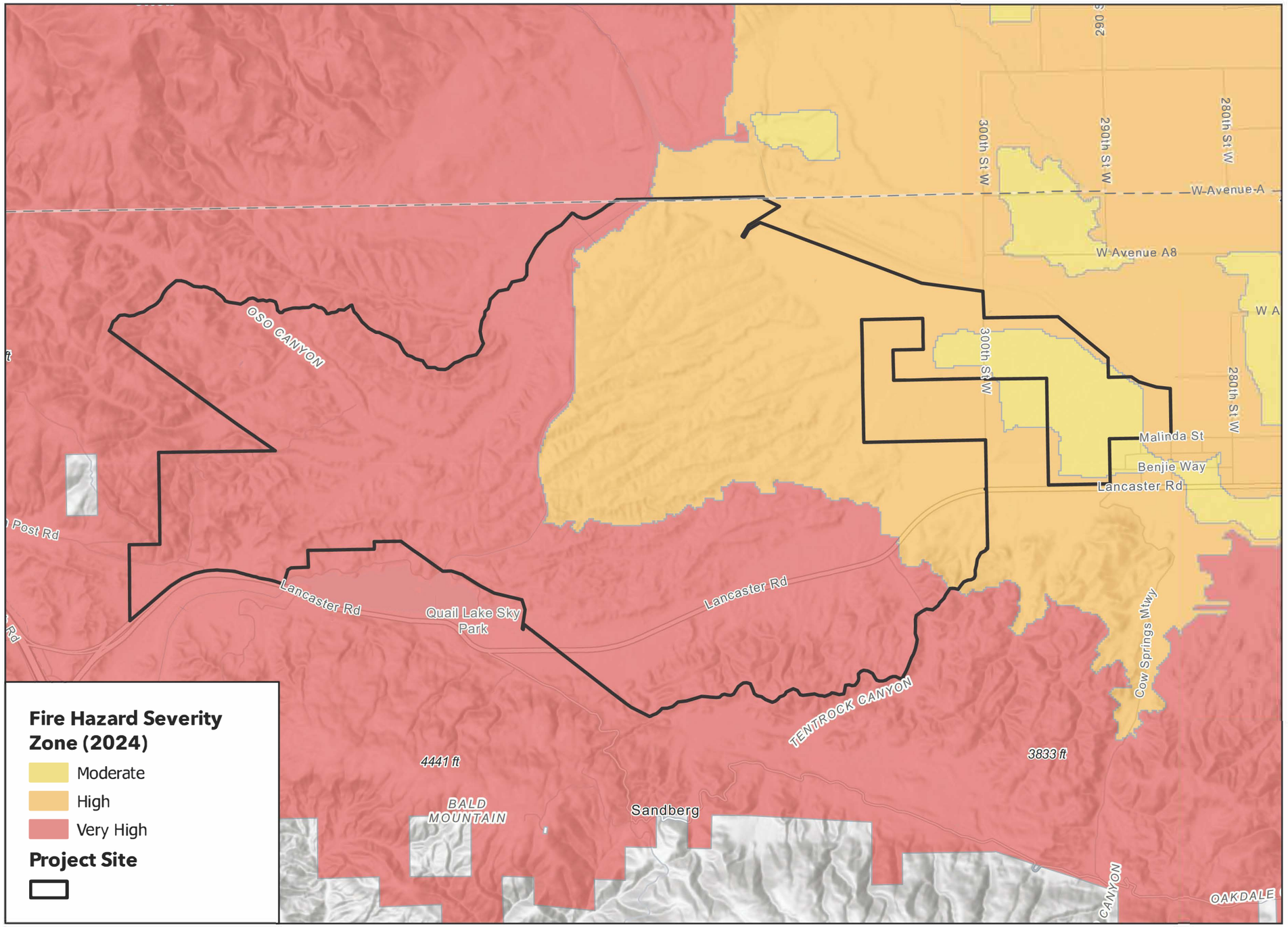
Fire Hazard Severity Zones

To assist each fire agency in addressing its responsibility area, CAL FIRE uses a severity classification system to identify areas or zones of severity for fire hazards within the state. CAL FIRE is required to map these zones for SRAs and identify VHFHSZs for Local Responsibility Areas. These zones were established based on fire environments and the likelihood of wildfire ignition and spread. The initial mapping process was completed and adopted in 2007. The 2007 fire hazard severity mapping at the Project site included mostly High FHSZs (north, west, and south), an area of VHFHSZ in the central/north-central portion of the site, and a Moderate FHSZ in the eastern portion of the site.

CAL FIRE is also statutorily required to update the FHSZ maps on a periodic basis. The first map update in SRAs, like that found on the Project site, has recently been completed. The first and second drafts of the updated maps resulted in most of the site being elevated to a VHFHSZ with small portions of the eastern and northeastern portions mapped as High or Moderate FHSZs. Dudek's analysis of the updated CAL FIRE modeling approach revealed that the inputs, including fuel models/fire behavior and burn probabilities, were not well aligned to the actual conditions on site. After providing details to CAL FIRE, the Project site was remapped by CAL FIRE to include primarily High FHSZs, as depicted in Exhibit 3.2-2.

The Fire Hazard Severity Zone map assesses "hazard" rather than "risk." Similar to flood zone maps, which describe areas based on the likelihood of flooding, the FHSZ map identifies areas based on the probability of fire occurrence and expected fire behavior. This assessment does not consider mitigation measures such as home hardening, recent wildfires, or fuel reduction efforts. "Hazard" refers to the physical conditions that create a likelihood of fire, whereas "risk" considers the potential damage a fire could cause to the area, including factors like fuel reduction projects, defensible space, and ignition-resistant building construction.

The zones serve multiple purposes, such as designating areas where California's defensible space standards and wildland-urban interface building codes are mandatory. They can influence real estate disclosures and may be considered by local governments in their general planning.



Source: Dudek 2024

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Fire Hazard Severity Zones (2024)

Exhibit 3.2-2

Centennial Supplemental Environmental Impact Report

N W E S

Map not to scale

PSOMAS

(03/11/2025 PLO) R:\Projects\CEN\3CEN000307\Graphics\EIR\ex_FHSZ_2024.pdf

California Emergency Services Act

The California Emergency Services Act (California Government Code 8550, et seq.), provides for the creation of an Office of Emergency Services, assigns and coordinates functions and duties to be performed during an emergency, facilitates mutual aid, and assigns resources (including manpower and facilities) throughout the state for dealing with any emergency that may occur.

California Office of Emergency Services

The California Office of Emergency Services (OES) is responsible for the coordination of overall state agency response to disasters. It assures the state's readiness to respond to and recover from all hazards and assist local governments in their emergency preparedness, response, recovery, and mitigation.

Standardized Emergency Management System (SEMS)

SEMS is the cornerstone of California's emergency response system and the fundamental structure for the response phase of emergency management. The system unifies all elements of California's emergency management community into a single integrated system and standardizes key elements. SEMS incorporates the following:

- **Incident Command System (ICS)**—A field-level emergency response system based on management by objectives
- **Multi/ Inter-agency coordination**—Affected agencies working together to coordinate allocations of resources and emergency response activities
- **Mutual Aid**—A system for obtaining additional emergency resources from non-affected jurisdictions
- **Operational Area Concept**—County and its sub-divisions to coordinate damage information, resource requests and emergency response

Local

Los Angeles County Multi-Jurisdictional Local All-Hazard Mitigation Plan

The purpose of the County's Multi-Jurisdictional All Hazard Mitigation Plan (County of Los Angeles 2020) is to identify the County's hazards, review and assess past disaster occurrences, estimate the probability of future occurrences, and set goals to mitigate potential risks to reduce or eliminate long-term risk to people and property from natural and human-made hazards.

Los Angeles County General Plan Safety Element

The County of Los Angeles General Plan provides the policy framework and guides development decisions in unincorporated Los Angeles County. The Land Use Element

designates the proposed general distribution and general location and extent of uses while also providing the "blue print" for how land will be used to accommodate growth and change throughout the unincorporated areas of the County. The Safety Element of the General Plan provides an overview of fire hazards in the County, including wildland fires, flooding, and mud and debris flows.

The following policies related to fire safety and development in fire hazard zones are applicable to the Project subject to the terms and conditions of the Project's previously approved Development Agreement:

- **Policy LU 11.6:** Ensure that subdivisions in VHFHSZs site open space to minimize fire risks, as feasible.
- **Policy S 1.3:** Require developments to mitigate geotechnical hazards, such as soil instability and landsliding, in Hillside Management Areas through siting and development standards.
- **Policy S 4.1: 1:** Prohibit new subdivisions in VHFHSZs unless: (1) the new subdivision is generally surrounded by existing or entitled development or is located in an existing approved specific plan or is within the boundaries of a communities facility district adopted by the County prior to January 1, 2022, including any improvement areas and future annexation areas identified in the County resolution approving such district; (2) the County determines there is sufficient secondary egress; and (3) the County determines the adjoining major highways and street networks are sufficient for evacuation as well as safe access for emergency responders under a range of emergency scenarios, as determined by the County. Discourage new subdivisions in all other FHSZs.
- **Policy S 4.2:** New subdivisions shall provide adequate evacuation and emergency vehicle access to and from the subdivision on streets or street systems that are evaluated for their traffic access or flow limitations, including but not limited to weight or vertical clearance limitations, dead-end, one-way, or single lane conditions.
- **Policy S 4.3:** Ensure that biological and natural resources are protected during rebuilding after a wildfire event.
- **Policy S 4.4:** Reduce the risk of wildland fire hazards through meeting minimum State and local for fire-resistant building materials, vegetation management, fuel modification, and other fire hazard reduction programs.
- **Policy S 4.5** Encourage the use of climate-adapted plants that are compatible with the area's natural vegetative habitats.
- **Policy S 4.6:** Ensure that infrastructure requirements for new development meet minimum State and local regulations for, ingress, egress, peak load water supply availability, anticipated water supply, and other standards within FHSZs.
- **Policy S 4.7:** Discourage building mid-slope, on ridgelines and on hilltops, and employ adequate setbacks on and below slopes to reduce risk from wildfires and post-fire, rainfall-induced landslides and debris flows.

- **Policy S 4.8:** Support the retrofitting of existing structures in FHSZs to meet current safety regulations, such as the building and fire code, to help reduce the risk of structural and human loss due to wildfire.
- **Policy S 4.9:** Adopt by reference the County of Los Angeles Fire Department Strategic Fire Plan, as amended.
- **Policy S 4.10:** Encourage the planting of native oaks in strategic locations and near existing oak woodlands, including those to be mapped in the Oak Woodlands Conservation Management Plan, to protect developments from wildfires, as well as to lessen fire risk associated with developments.
- **Policy S 4.11:** Support efforts to address unique pest, disease, exotic species and other forest health issues in open space areas to reduce fire hazards and support ecological integrity.
- **Policy S 4.12:** Support efforts to incorporate systematic fire protection improvements for open space, including facilitation of safe fire suppression tactics, standards for adequate access for firefighting, fire mitigation planning with landowners and other stakeholders, and water sources for fire suppression.
- **Policy S 4.10:** Encourage the planting of native oaks in strategic locations and near existing oak woodlands, including those to be mapped in the Oak Woodlands Conservation Management Plan, to protect developments from wildfires, as well as to lessen fire risk associated with developments
- **Policy S 4.14:** Encourage the strategic placement of structures in FHSZs that conserves fire suppression resources, increases safety for emergency fire access and evacuation, and provides a point of attack or defense from a wildfire.
- **Policy S 4.15:** Encourage rebuilds and additions to comply with fire mitigation guidelines.
- **Policy S 4.16:** Require local development standards to meet or exceed SRA Fire Safe Regulations, which include visible home and street addressing and signage and vegetation clearance maintenance on public and private roads; all requirements in the California Building Code and Fire Code; and Board of Forestry Fire Safe Regulations.
- **Policy S 4.17:** Coordinate with agencies, including the Fire Department and ACWM, to ensure that effective fire buffers are maintained through brush clearance and fuel modification around developments.
- **Policy S 4.18:** Require Fire Protection Plans for new residential subdivisions in FHSZs that minimize and mitigate potential loss from wildfire exposure and reduce impact on the community's fire protection delivery system.
- **Policy S 4.19:** Ensure all water distributors providing water in unincorporated Los Angeles County identify, maintain, and ensure the long-term integrity of future water supply for fire suppression needs, and ensure that water supply infrastructure adequately supports existing and future development and redevelopment, and

provides adequate water flow to combat structural and wildland fires, including during peak domestic demand periods.

- **Policy S 4.20:** Prohibit new and intensification of existing general assembly uses in VHFHSZs unless the use is located in an existing approved specific plan or meets secondary egress route requirements, and the level of service capacity of adjoining major highways and street networks can accommodate evacuation. Discourage new general assembly uses in all other FHSZs.
- **Policy S 7.1:** Ensure that residents are protected from the public health consequences of natural or human-made disasters through increased readiness and response capabilities, risk communication, and the dissemination of public information.
- **Policy S 7.2:** Support County emergency providers in reaching their response time goals.
- **Policy S 7.3:** Coordinate with other County and public agencies, such as transportation agencies, and health care providers on emergency planning and response activities, and evacuation planning.
- **Policy S 7.5:** Ensure that there are adequate resources, such as sheriff and fire services, for emergency response.

County of Los Angeles Operational Area Emergency Response Plan

The 2023 County of Los Angeles Operational Area Emergency Response Plan describes a comprehensive emergency management system that provides for a planned response to disaster situations associated with natural disasters, technological incidents, terrorism, and nuclear-related incidents within the County of Los Angeles. These plans delineate operational concepts relating to various emergency situations, identify components of the Emergency Management Organization, and describe the overall responsibilities for protecting life and property and providing for the overall well-being of the population. The plan also identifies the sources of outside support that might be provided (through mutual aid and specific statutory authorities) by other jurisdictions, state and federal agencies, and the private sector.

County of Los Angeles Fire Code

The County of Los Angles Fire Code adopts the 2022 California Fire Code with additions, deletions, and amendments. Provisions of the California Fire Code are described under State Regulations, above.

County of Los Angeles Building Code

The County Building Code is intended to regulate the construction of applicable facilities and encompasses (and formally adopts) associated elements of the 2022 California Building Code. Specifically, this includes regulating the erection, construction, enlargement, alteration, repair, moving, removal, demolition, conversion, occupancy, use, height, area, and maintenance of all structures and certain equipment therein.

Non-Regulatory Guidance Documents

The following non-regulatory guidance documents are relevant to the analysis of the Project's potential effects related to wildfire:

California Attorney General's Office Best Practices for Analyzing and Mitigating Wildfire Impacts of Development Projects Under the California Environmental Quality Act

The California Office of the Attorney General issued (October 2022) guidance (AG Guidance) outlining best practices for analyzing and mitigating wildfire impacts of development projects under the California Environmental Quality Act (CEQA). The AG Guidance is not a regulatory document and it does not impose additional legal requirements on local governments, nor does it alter any applicable laws or regulations. Instead, the AG Guidance is intended to help local governments evaluate and consider the wildfire impacts of development projects proposed in fire-prone areas, and to assist project design in a way that minimizes wildfire ignition and incorporates emergency access and evacuation measures. The following provides a summary of the AG Guidance.

Baseline Conditions

The AG Guidance recommends that an EIR's discussion of existing environmental (baseline) conditions include information about open space areas and habitats within the area of the Project site that may be fire prone, a discussion of fire history and fuels on the Project site and a description of existing available water supplies for firefighting.

Modeling

The AG Guidance encourages lead agencies to model fire scenarios to "quantify" increased wildfire risks resulting from a project's addition of more people to wildfire prone areas and to aid in the assessment of such risks.

Qualitative Assessment

The AG Guidance recommends that an EIR qualitatively assess relevant variables on the risk of wildfire, including:

- **Project Density –** Project density influences how likely a fire is to start or spread and how likely it is that occupants would be in danger. As stated by the AG Guidance, "Fire spread and structure loss is more likely to occur in low- to intermediate-density developments."
- **Location in the Landscape –** Where a project's structures are placed in the landscape relative to fire environment features (vegetation, topographical features, and wind alignments) also influences wildfire risk.
- **Water Supply and Infrastructure –** Water supply and infrastructure to address firefighting within the Project site are also relevant to evaluating wildfire risk.

Potential Measures to Reduce Wildfire Risk

The AG Guidance identifies potential design features that may reduce a project's wildfire risk impacts, such as:

- Avoiding and minimizing low-density development patterns or "leapfrog-type" developments with undeveloped wildland between developed areas. interface area and creating buffer zones and defensible space measures within and adjacent to the Project.
- Undergrounding power lines.
- Upgrading building materials and installation techniques to increase a structure's resistance to heat, flames and embers (i.e. "fire hardening") and requiring fire-hardened communication facilities to the Project site.
- Requiring adequate water supplies during a wildfire.
- Parking limitations / sufficient off-street parking to ensure access roads are not clogged with parked vehicles. Placement of development close to adequate emergency services, existing or planned ingress/egress, and designated evacuation routes.

Governor's Office of Land Use and Climate Innovation Guidelines

The Governor's Office of Land Use and Climate Innovation's Wildland-Urban Interface (WUI) Planning Guidance Document offers strategies for local governments to address wildfire risks in WUI areas. The following elements are applicable to specific project measures and have been analyzed for this project.

- **Risk Assessment:** Identification and assessment of wildfire risk in WUI areas, considering factors such as vegetation types, topography, climate, and historical fire data.
- **Land Use Planning:** Guidelines for responsible land use planning to minimize wildfire risk and promote resilient communities. This may include zoning regulations, building codes, and infrastructure planning.
- **Community Preparedness:** Recommendations for community outreach, education, and preparedness measures to enhance safety and resilience against wildfires. This could involve creating defensible space around properties, developing evacuation plans, and fostering community partnerships.
- **Policy Recommendations:** Guidance on integrating wildfire risk considerations into broader planning policies at the local, regional, and state levels. This may involve coordination between various agencies and stakeholders.
- **Environmental Considerations:** Strategies for balancing development and environmental conservation in WUI areas, taking into account habitat protection, water resources, and ecosystem management.

- **Implementation and Monitoring:** Steps for implementing the guidance and monitoring its effectiveness over time. This may involve periodic reviews, updating policies based on new data or experiences, and adapting strategies to changing conditions.

This document is a useful tool for planners, policymakers, and communities to proactively manage wildfire risks in areas where urban development interfaces with wildland environments.

3.2.3 ENVIRONMENTAL SETTING

Wildfire Background

Fire environments are dynamic systems and include many types of environmental factors and site characteristics. Fires can occur in any environment where conditions are conducive to ignition and fire movement. Areas of naturally vegetated open space in California are typically comprised of conditions that may be favorable to wildfire spread. The three major components of fire environment are topography, vegetation (fuels), and climate. The state of each of these components and their interactions with each other determines the potential characteristics and behavior of a fire at any given moment. It is important to note that wildland fire may transition to urban fire if structures are receptive to ignition. Inversely, it is possible for structural fires to transition into wildland fires in extreme cases. This is more likely to occur when multiple structures are burning simultaneously, particularly in areas with close proximity to receptive wildland fuels. Structure ignition depends on a variety of factors and can be prevented/minimized through a layered system of protective features including fire resistive landscapes directly adjacent the structure(s), application of known ignition resistive materials and methods, and suitable infrastructure for firefighting purposes.

The 5-mile buffer area around the Project has been subject to wildfires with an average return interval of four years. The Project site's potential wildfire hazard is mapped by CAL FIRE as primarily moderate and high with the western portion of the site mapped as a Very High Fire Hazard Severity Zone (VHFHSZ) (CAL FIRE, 2024).

Climate

The Project site is in the western Antelope Valley region of Los Angeles County. The climate of this region is influenced by both the arid continental climate to the east and the moister Mediterranean climate to the west; therefore, the region is described as having a hot–to–cold and semi-arid to sub-humid climate. The temperatures in the Project area range from an average low of 55.4°F in January to an average high of 98.9°F in July. Precipitation typically occurs between December and March with average rainfall of 8.51 inches (WRCC 2021).

From a regional perspective, the fire risk in Southern California can be divided into three distinct "seasons" (Nichols et al. 2011; Baltar et al 2014). The first season, the most active season and covering the summer months, extends from late May to late September. This is

followed by an intense fall season characterized by fewer but larger fires. This season begins late September and continues until early November. The remaining months, November to late May cover the mostly dormant, winter season. Typically, the highest fire danger in southern California coincides with Santa Ana winds. The Santa Ana wind conditions are a reversal of the prevailing southwesterly winds that usually occur on a region-wide basis near the end of fire season during late summer and early fall. They are dry, warm winds that flow from the higher desert elevations in the east through the mountain passes and canyons which increase in velocity as they converge through the canyons. Localized wind patterns on the Project site may be affected by regional topographies. As observed throughout Los Angeles County and the majority of Southern California, the Project Site is occasionally subject to strong Santa Ana wind events.

Climate Change

A rapidly warming climate is expected to impact California and the Western U.S. from both direct and indirect effects. Since 2006, the State has monitored and created climate change assessments to assess the impacts and risks of climate change. Based on California's Fourth Climate Change Assessment, published in 2019, the current average annual maximum daily temperature is projected to increase between 5.6 and 8.8 degrees by 2100 (State of California 2019a). Because wildfires can contribute to climate change via greenhouse gas emissions and be affected by climate change, the Fourth Climate Assessment also examined how climate change is expected to impact wildfires across the State. The changes to temperature, loss of snowpack, and earlier snowmelt are expected to result in dryer "dry" seasons and result in more susceptible forests (State of California, 2019a).

The Fourth Climate Assessment also prepared assessments based on regions to capture region-specific effects of climate change (State of California, 2019b). The Los Angeles Region includes all of Ventura, Los Angeles, and Orange Counties as well as the urbanized areas of San Bernardino and Riverside Counties. This region has a highly variable topography ranging from coastal plains to mountain ranges to desert areas. In the Los Angeles Region, average maximum temperatures are projected to increase around 4°–5° by 2050 and 5°–8° by 2100. As a result, the number of extremely hot days is also expected to increase across the region. Precipitation is projected to only exhibit small changes in average precipitation amounts; however, extreme precipitation events, both wet and dry, are expected to increase. Areas are projected to experience a 25%–30% rise in the wettest day of the year by the end of the century (State of California, 2019b).

Topography

The Project site is located at moderate elevations in the transition zone between the southern edge of the Tehachapi Mountains and the northern edge of the Liebre Mountains. Elevations on the site range from approximately 3,000 to 4,300 feet above mean sea level (USGS 2021, 2022). Of note is Oso Canyon that bisects the central portion of the property along a north-south axis ultimately draining in a northerly direction toward the Alamo Power Plant and the East Branch of the California Aqueduct. Oso Canyon is the primary drainage feature on site and affects the site's overall drainage pattern, which trends from the

higher elevations in the northwest and southeast toward the northeast. Immediately south of the property is Quail Lake, which is associated with the California Aqueduct that also bisects the property and is aligned roughly parallel with Oso Canyon but situated to the east.

Slopes on the Project site range from relatively flat (0%) up to nearly 95%. Steeper slopes are associated with the portions of the property that are situated on the flanks of the Tehachapi and Liebre Mountains in the west and southeast portions of the property. Site wide topography is illustrated in Exhibit 3.2-3.

As presented below in Table 3.2-1, planned development areas are not proposed within the site's steeper areas. Roughly 80% of proposed development would occur in areas with existing slopes of less than 15%. The Project site can be described as occurring in a wide valley absent of the topographical features that contribute to more aggressive fire behavior.

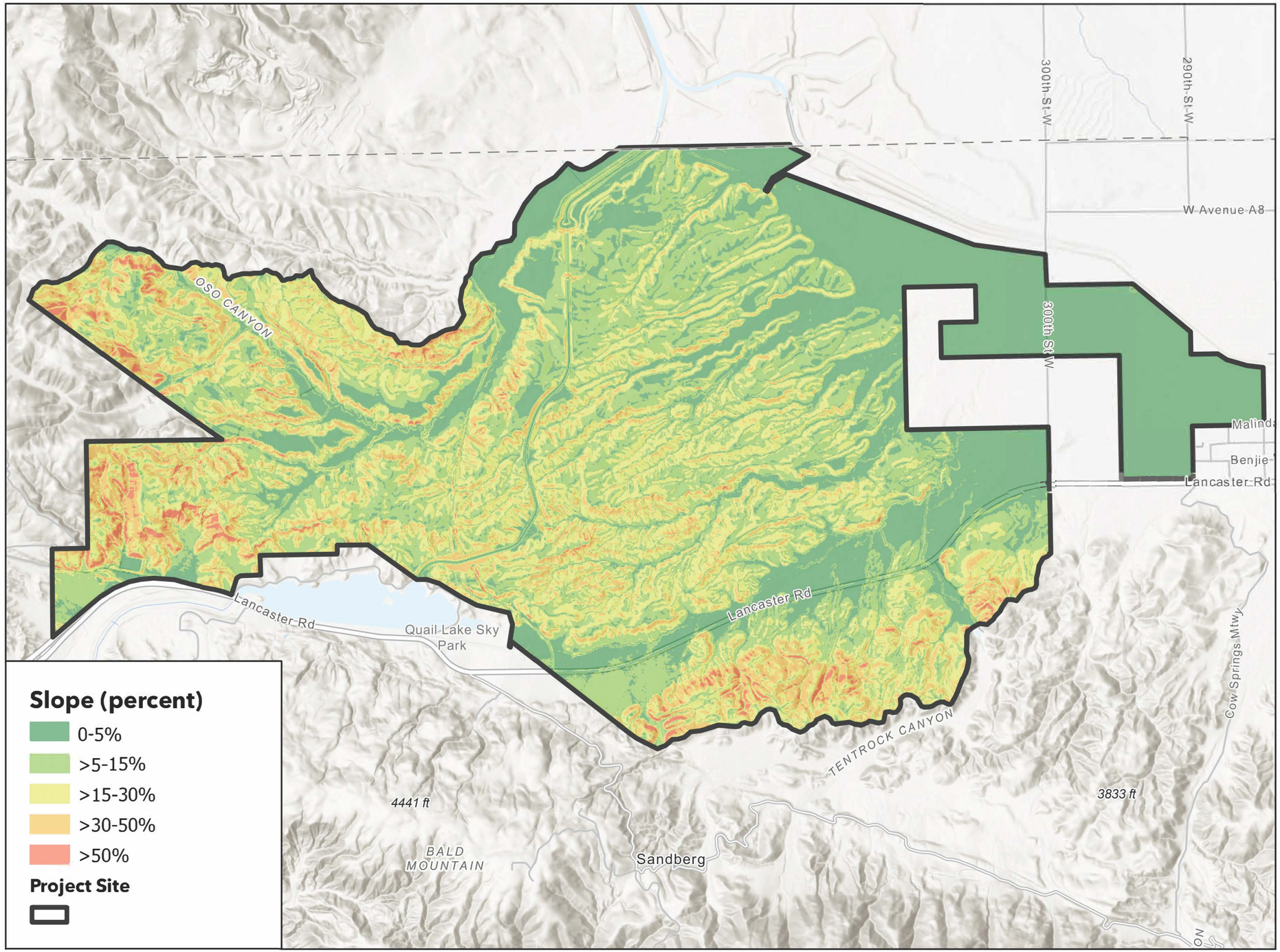
TABLE 3.2-1
SLOPES WITHIN THE PROJECT SITE

Slope Percent	Acreage Within Project Site	Acreage Within Proposed Development Areas
0%–5%	3,488	2,292
>5%–15%	4,471	2,772
>15%–-30	2,700	1,193
>30%–50%	1,409	242
>50%	237	<1
Source: LANDFIRE, 2023.		

Topography influences fire risk by affecting fire spread rates. Typically, steep terrain results in faster fire spread up-slope and slower spread down-slope. Terrain that forms a funneling effect, such as chimneys, chutes, or saddles on the landscape can result in especially intense fire behavior, including faster spread and higher intensity. Conversely, flat terrain tends to have little effect on fire spread, resulting in fires that are driven by vegetation and wind. Topographic features that may present a fire spread facilitator are the slope and canyon alignments, which may serve to funnel or channel winds, thus increasing their velocity and potential for influencing wildfire behavior.

Vegetation (Fuels)

Vegetation on the Project site is dominated primarily by both native and non-native grassland which represent nearly 76% of the site's vegetative cover. Compared to other fuel types, grasslands have lower fuel loads and typically result in faster-moving fires with lower flame lengths and heat output. Unlike wildfires in shrub and forest vegetation, grass fires are generally more easily contained and require less resources and planning to achieve fire containment. While grassland fires may spread rapidly and are influenced heavily by wind, fires in shrub and forest vegetation involve higher intensity fire behavior, present greater risk to structures, and often more difficult control measures. Mixed oak woodland inhabits nearly



Source: Dudek 2023

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Terrain

Exhibit 3.2-3

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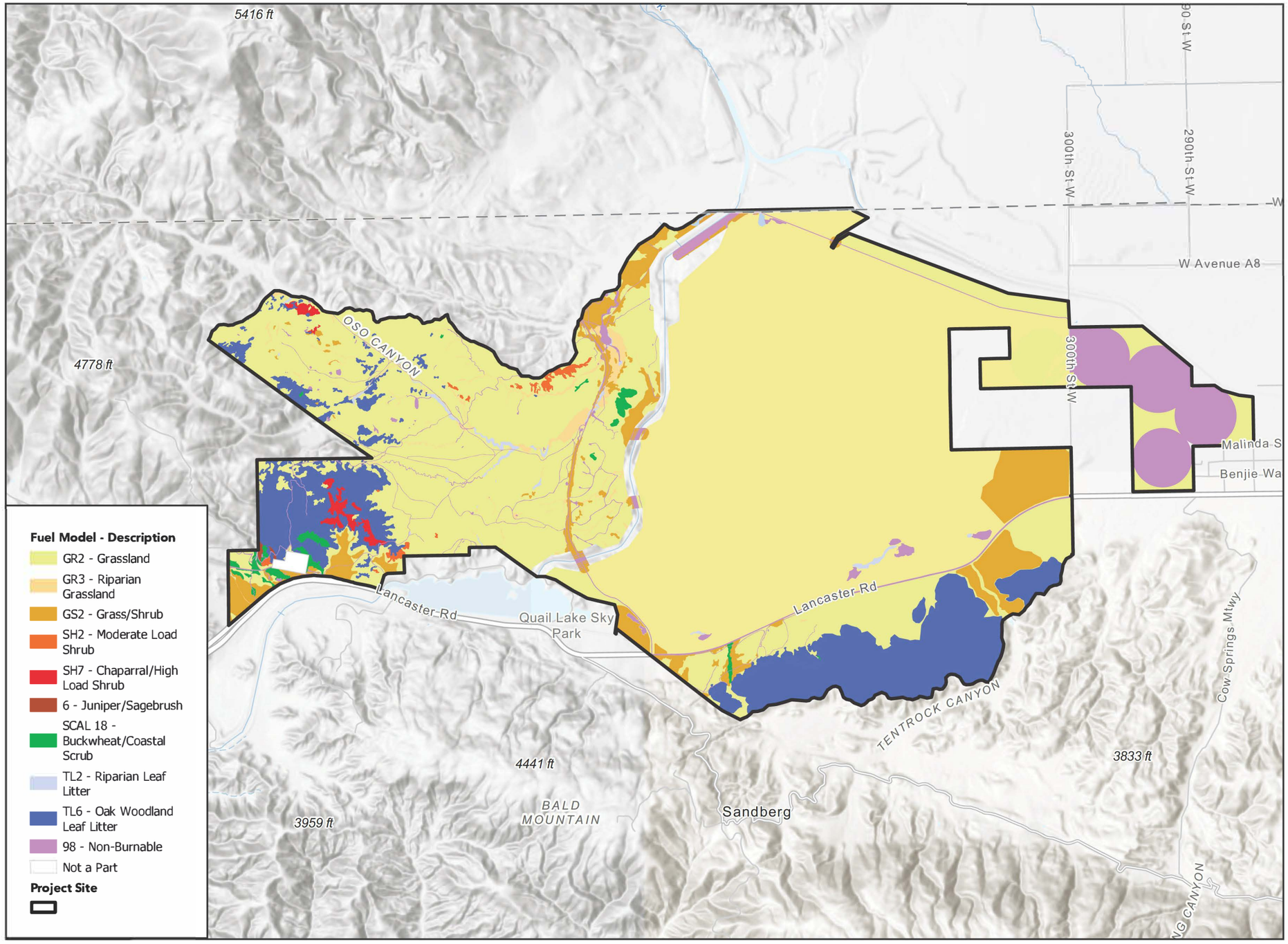
12% of the site and is situated both on the north-facing slope of the Liebre Mountains in the southeast portion of the property as well as in the higher elevations in the western portion of the property. This vegetation type exhibits similar fire behavior to that of grasslands due to grass understory fuels and significant spacing between individual trees. Scrub vegetation types, scattered throughout the site, represent nearly 8% of the site's vegetative cover. While this fuel type can burn intensely under strong, dry wind patterns, it does not produce the high fire intensity wildland fires which occur within chaparral fuel types, which cover less than 1% of the site. The remaining cover on site (less than 4%) consists of disturbed or un-vegetated areas (roads, aqueduct, etc.), riparian scrub, and riparian woodland habitats.

Table 3.2-2 provides details of the vegetation types on the Project site (Bonterra 2009). In all, there are 45 individual vegetation types on site. For the purposes of evaluating fuel type coverage on site, these vegetation types have been aggregated into similar fuel characteristic groupings based on fuel model type, resulting in a total of 11 different fuel models, of which 2 are classified as non-burnable. On-site vegetation is important relative to wildfire as some vegetation, such as scrub, chaparral, and grassland habitats are highly flammable while other vegetation, such as riparian communities or forest understory, are less flammable due to their higher plant moisture content, compact structure, and available shading from overstory tree canopies. Exhibit 3.2-4 presents the vegetation/fuel distribution for the Project site.

Off-site vegetation surrounding the Project site consists of grazed grasslands, oak woodlands, scrub vegetation, chaparral, coniferous forests, and extensive agricultural areas to the east.



Source: Dudek 2009

Vegetation Fuel Model

Exhibit 3.2-4

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TABLE 3.2-2
PROJECT SITE VEGETATION TYPES

Vegetation Type	Acreage on the Project site
Agricultural	106.80
Alkali Meadow	3.66
Alluvial Scrub	5.56
Baltic Rush	21.48
Bladderpod Scrub	0.67
Bush Lupine Scrub Dominated	1.80
California Buckwheat Scrub Dominated	21.92
California Juniper/California Buckwheat Scrub	4.70
Chamise/Bigberry Manzanita Chaparral	40.10
Coastal and Valley Freshwater Marsh	2.46
Coffeeberry Scrub	11.95
Cottonwood Woodland	0.88
Developed/Disturbed	184.68
Goldenbush Scrub Dominated	16.06
Grassland (Undifferentiated)	5,937.35
Great Basin Scrubs	360.85
Mixed Oak Woodland	1,371.63
Native Perennial/California Annual Grassland	3,076.54
Open Water/Developed	6.88
Ornamental	0.12
Rabbitbrush Scrub Dominated	443.10
Riparian Herb	54.38
Rush Riparian Grassland	48.98
Seeps and Ephemeral Ponds	8.05
Southern Arroyo Willow Riparian	8.57
Southern Cottonwood Willow Woodland	3.96
Southern Willow Scrub	14.14
Unvegetated Wash	25.87
Valley Oak Riparian Woodland	12.08
Wand Buckwheat Scrub Dominated	6.07
Willow Riparian Forest	15.05
Willow Riparian Woodland	10.18
Wright's Buckwheat Scrub Dominated	16.51
Yucca Scrub Dominated	33.20
Total	**11,876.32**
Source: BonTerra, 2009	

Historic and Ongoing Grazing Program

Tejon Ranch remains unfragmented and has been carefully managed with livestock and cattle grazing for nearly 160 years. Actively grazed landscapes, including those of portions of the ranch within the Antelope Valley of Los Angeles County, assure sustainability and limit the severity of wildfire because grassland fuel loads are reduced. The sustainable grazing operation employed at Tejon Ranch effectively reduces the grass fuels on an ongoing basis which reduces the potential for ignitions and for rapid fire spread.

Tejon Ranch has maintained a database since 2013 providing annual Residual Dry Matter (RDM) records from locations across the ranch. RDM refers to the unused forage at the end of the grazing season (fall) and provides and approximation of the residual fuel load (Ratcliff et al., 2022). At the end of the grazing period where the occurrence of extreme fire weather (Santa Ana wind conditions) is most likely, the average RDM the Centennial Project site equates to roughly 467 pounds per acre. Flame lengths have been found to be reduced to under 8 feet when RDM is managed to under 1,225 pounds per acre (Ratcliff et al., 2022). The sustainable grazing operation employed at Tejon Ranch effectively reduces the grass fuels on an ongoing basis which reduces the potential for ignitions and for rapid fire spread. Following buildout of Centennial, Tejon Ranch has committed to maintaining grazing management within the Project's open spaces. Tejon Ranch's commitment to ongoing grazing management at Centennial facilitates the historic land use and stewardship of the area while also maintaining and reducing the vegetative fuels. Because of the variability of the historic grazing practices, this analysis considers the grazing program as an additional environmental benefit but, conservatively, this analysis does not rely upon those benefits when determining the Project's potential impacts under CEQA.

Land Uses

Most of the adjacent lands can be categorized as undeveloped or agricultural. Vast open spaces in the Project's vicinity include the Angeles National Forest, Bureau of Land Management lands, Tejon Ranch, Hungry Valley State Vehicular Recreation Area, Los Padres National Forest, and various private landowners. Proximal human development is generally limited to small enclaves along major roadways. Existing communities are rural large-lot residential and lower-density residential and are generally confined to the areas of Lebec, Gorman, Caswell, Sandberg, Three Points, and Neenach. According to the Microsoft Building Footprints database, 1,064 structures currently exist within 10 miles of the Project site, the majority of which are located to the east near Three Points and Neenach. Other adjacent land uses include but are not limited to the following:

- California Department of Water Resources—the California Aqueduct and Quail Lake
- Pacific Gas and Electric, Southern California Gas Company, and Southern California Edison—major transmission facilities that traverse Tejon Ranch and are constantly monitored and upgraded
- Multiple telecommunications carriers—communications facilities and fiber optic easements traversing Tejon Ranch adjacent to or through future developments

- National Cement—major mining operations
- Agricultural and farming operations

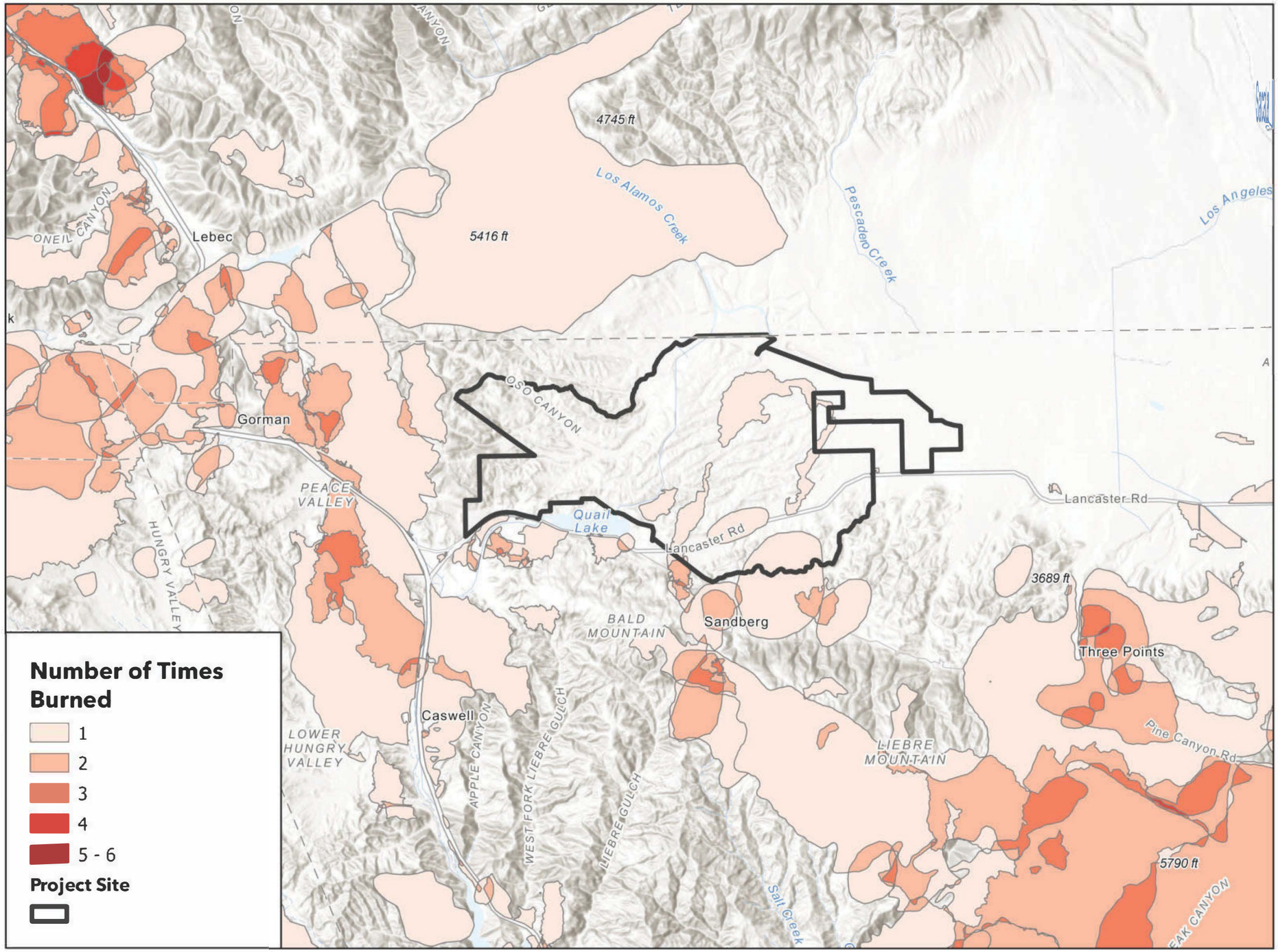
Historic Wildland Fires

Fire history data provides valuable information regarding fire spread, fire frequency, ignition sources, and vegetation/fuel mosaics across a given landscape. Fire history data can be used to show whether large fires have occurred in the area of the Project site, which indicates whether they may be possible in the future. Fire history for the Project site and surrounding areas was analyzed through records from CAL FIRE in their Fire and Resource Assessment Program database and the Integrated Reporting of Wildland-Fire Information (IRWIN) database. The Project site and the surrounding vicinity have been subject to wildfires, primarily within the direct vicinity of, but also some fires occurring within, the Project boundaries.

According to the Fire and Resource Assessment Program (FRAP) most recent database, 23 wildland fires have occurred on or within 1 mile of the Project site since 1800, with 11 wildland fires burning on site at an average fire return interval of roughly 11 years (Exhibit 3.2-5). The most recent recorded fire burning in the vicinity (within 1 mile) of the Project site (i.e., excluding an unrecorded 2024 fire) was the Gorman Fire, which occurred in May of 2007 and burned west of the property and west of Interstate (I) 5. Limited wildfire history at the Project site is believed to be largely due to the site's terrain, managed fuels, barriers to wildland fire spread, quick wildfire detection and response, the removal of fine fuels by cattle grazing and a lower risk for human-caused ignitions as compared to off-site urbanized areas. Off-site wildland fire occurrence is more common, particularly south of the Project site in the Liebre Mountains. However, wildfires encroaching onto the Project site from the south rarely enter the interior of the site due to the position of SR-138 and its use as a fire break. Wildfires that have previously burned within the Project site have been limited in size with an average area of 284 acres.

According to the IRWIN database, there have been 196 reported wildfire ignitions within 5 miles of the Project since 2014. As presented in Exhibit 3.2-6, regional wildfire ignition locations documented in the IRWIN database are strongly associated with major roadways including I-5, State Route (SR) 138, and Pine Canyon Road, with most ignitions occurring along I-5 to the southwest of the Project site.

Other than the southern portion of the property, relatively few documented fires have burned within the interior portion of the Project site. Table 3.2-3 summarizes the fire history on and near the Project site.



Source: Dudek 2024

Wildfire History

Exhibit 3.2-5

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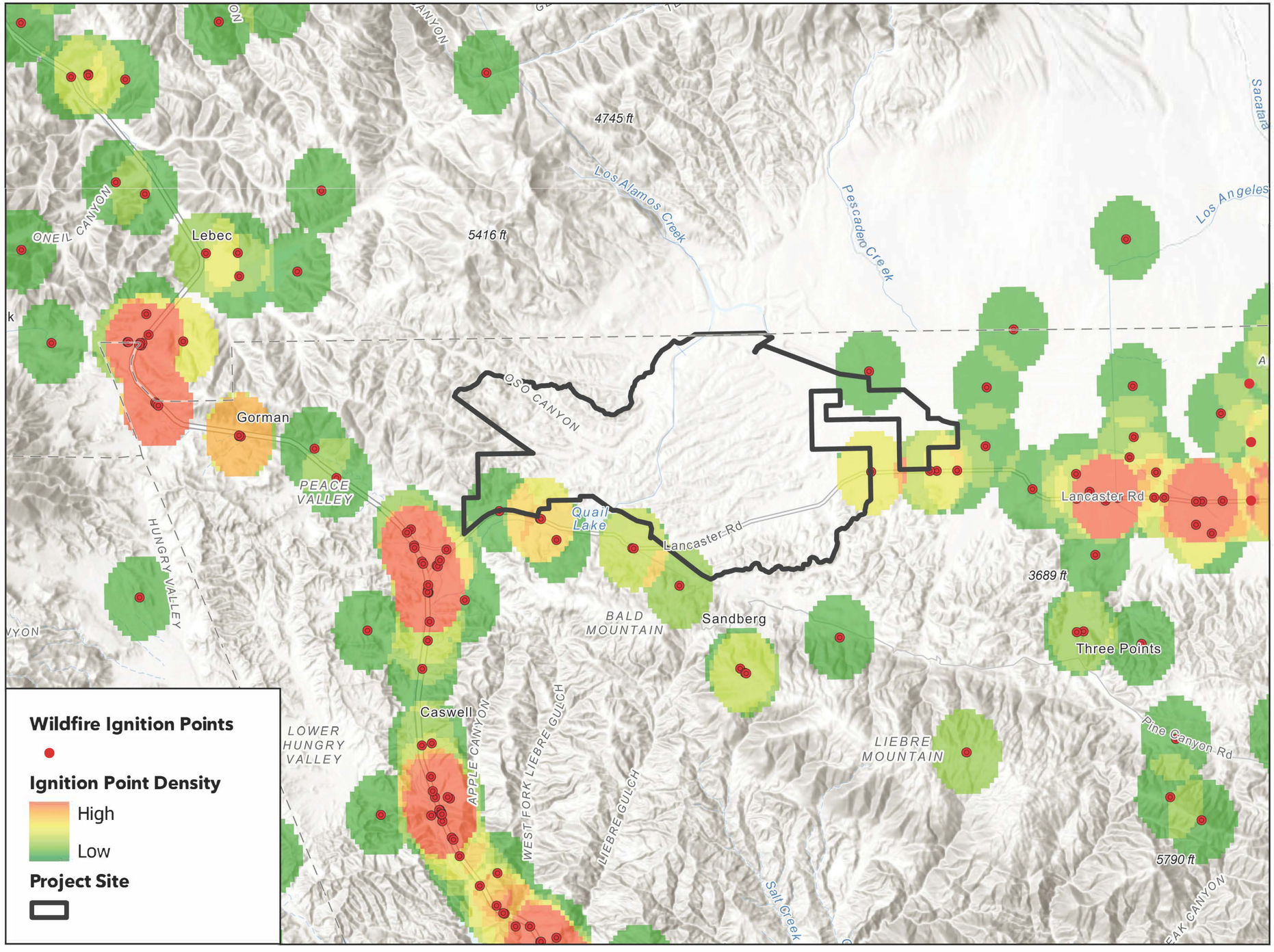

Source: Dudek 2023

Vegetation Fire Ignitions (2014–2022)

Exhibit 3.2-6

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TABLE 3.2-3
FIRE HISTORY WITHIN FIVE MILES OF THE PROJECT BY DECADE

Year	Number of Fires	Average Size of Fire (acres)
1912–1920	12	516
1921–1930	15	1,578
1931–1940	1	117
1941–1950	2	5,049
1951–1960	2	507
1961–1970	4	12,418
1971–1980	1	3,969
1981–1990	6	2,330
1991–2000	7	498
2001–2010	17	1,709
2011–2020	18	1,777
2021–Present	6	175
Total	**91**	**Average Fire Size: 1,915**

Source: FRAP, 2023

While not yet recorded in the public fire history database, other notable wildfires within the region have occurred in 2024. Most notably, the Post Fire ignited on June 15, 2024, near Gorman Post Road in Gorman, California located roughly 6 miles northwest of the Project site. Fueled by strong winds from the northeast and long-range spotting, the fire spread rapidly to the south, eventually growing to 15,563 acres. Firefighters suggested that fire spread was exacerbated by two back-to-back wet winters which resulted in dense vegetation growth. Two structures were destroyed in the Post Fire, resulting in one civilian injury. The fire was declared fully contained on June 26, 2024. While the Post Fire spread quickly south, it did not cross Interstate-5 or threaten the Project site.

The White Fire ignited on July 13, 2024, roughly 11 miles south of Tehachapi near Twin Lakes. The fire was caused by lightning and eventually spread to 5,646 acres roughly 16 miles northeast of the Project site. The fire was limited to the steeper terrain of the Tehachapi Mountains and did not spread to the Antelope Valley or the Project site.

3.2.4 METHODOLOGY

The analysis of the impacts of the Approved Project with Proposed Modifications regarding wildfires in the Project area considers the existing regulations detailed in the Regulatory Setting discussion above that address fire hazards and future uses in the Project area that could occur as a result of the Project. Based on these considerations, a determination as to whether there would be an increased potential for wildfire hazards to occur in the Project, both on-site and off-site, based on the thresholds of significance set forth in Section 3.2.6, *SEIR Thresholds of Significance*. This analysis also follows the recommendations of the AG Guidance and the Governor's Office of Land Use and Climate Innovation (formerly Office of Planning and Research (OPR)) Wildland-Urban Interface (WUI) Planning Guidance Document. The analysis in this chapter is informed in part by (i) a Project-specific Wildlife Safety Plan (Dudek, 2025) included as Appendix G, (ii) a Project-specific Wildfire Evacuation Technical Report (Dudek, 2025) included as Appendix H, (iii) a Project -specific Construction Fire Prevention Plan (Dudek, 2024) included as Appendix I, and (iv) a Project-specific Focused Off-Site Ignition Risk Assessment (Dudek, 2025) included as Appendix J.

The Wildfire Safety Plan (WSP) sets forth a Project-specific assessment of fire behavior, emergency response capacity, fire-related water supply and flows, roads and access, building construction, and defensible space and Fuel Modification Zones (WSP). The WSP includes advanced fire behavior modeling, including modeling of "worst-case" fire conditions to determine flame lengths that may impact the Project site from worst-case wildfire scenarios under both pre-development and post-development conditions (with regulatory compliance and mitigation implemented). Fire behavior modeling was conducted to document the type and intensity of a fire that would be expected adjacent to the Project Site, given characteristic site features such as topography, vegetation, and weather during "worst case" fire conditions (e.g., during Santa Ana winds). For planning purposes, the averaged worst-case fire behavior is the most useful information for conservative fuel modification design. The WSP also includes an analysis of landscape burn probability, integrated hazard, and wildfire progression simulations.

The WSP analyzes the time it takes for existing fire personnel to reach the Project site, and the demand for fire service resulting from Project implementation. Response times were calculated using the ISO travel time equation.[1] Emergency call volumes for the Project were estimated by using the historical per-capita call volume from LACoFD County-wide service area total population. The County's per capita annual call volume is approximately 93 calls per 1,000 persons. This call ratio was then applied to the anticipated population for the Project of 57,150 people.

The Evacuation Study sets forth a Project-specific evacuation analysis to determine how long it would take for affected Project occupants and the surrounding communities to evacuate under most likely scenarios to nearby urban areas/freeway access in case of a fire emergency. A detailed description of the Evacuation Study methodology is set forth in Attachment C of Appendix H.

[1] Travel Time (minutes) = 0,65 + 1.7 (Travel Miles)

The Focused Offsite Ignition Risk Assessment evaluates the potential for the Project to cause fires that ignite on-site and subsequently spread off-site, thereby impacting existing land uses in the Project's proximity.

CEQA requires the assessment of the environmental impact of a Proposed Project (impact of project on the environment) (CEQA Guidelines § 15126.2 (a)). The concept of "CEQA-in-reverse" refers to the effect the existing environment may have upon the proposed Project. As clarified in *California Building Industry Association v. Bay Area Air Quality Management District* (2015) 62 Cal.4th 369, Case No. S213478., agencies subject to CEQA are not required to analyze the impacts of existing hazards on future residents or users, with the exception of a handful of statutory exceptions (airport land use compatibility, for example) or if the Project would exacerbate the existing environmental hazards through project implementation. Given that the Project site's potential wildfire hazard is mapped by CAL FIRE as primarily within Moderate and High with the western portion of the site mapped as Very High Fire Hazard Severity Zone, this SEIR analyzes how environmental hazards (in this case a wildfire hazard) are potentially exacerbated by the Project and how this would affect future project residents and on- and off-site environments.

3.2.5 2019 EIR THRESHOLDS OF SIGNIFICANCE AND SUMMARY OF 2019 EIR IMPACT ANALYSIS

2019 Impact Analysis

The following thresholds were addressed as part of the 2019 impact analysis to address wildfire related impacts:

2019 EIR Threshold 3-7: ***Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?***

2019 EIR Threshold 3-8: ***Expose people or structures to a significant risk of loss, injury, or death involving fires, because the project is located:***

- ***i. within a Very High Fire Hazard Severity Zone (Fire Zone 4).***
- ***ii. within a high fire hazard area with inadequate access.***
- ***iii. within an area with inadequate water and pressure to meet fire flow standards.***
- ***iv. within proximity to land uses that have the potential for dangerous fire hazard.***

2019 EIR Threshold 3-9: Constitute a potentially dangerous fire hazard.

2019 EIR Threshold 16-1: Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need of new or physical altered governmental facilities, the construction of which could cause significant environmental impacts in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: fire protection?

The 2019 EIR analyzed both on-site and off-site impacts related to evacuation, fire hazards, and public services. Impacts related to impairment of emergency response and evacuation plans resulting from project implementation were determined to be less than significant with the inclusion of MM 3-7 (preparation of an Emergency Response Plan) and MM 3-8 (Traffic Control Plan). Impacts related to fire hazards were determined to be less than significant with the inclusion of MM 3-9 (preparation of a Fuel Modification plan). In its analysis, the 2019 EIR recognizes that wildfire could occur in some of the Project site's landscapes but would not significantly impact the Project due to the required building codes and fuel modification requirements, which include 100 to 150 feet of fuel modification zone widths, along with requirements for access, fire flow, and concentrating most of the Project's building within flatter areas of the site. The 2019 EIR concluded that with the implementation of MM 3-9, the impact of the Project related to wildfires is considered to be less than significant.

The 2019 EIR determined that the increase in population and structures into currently undeveloped areas would result in a significant increase in the demand for fire services.

The 2019 EIR explains that the presence of Station 77, which would serve the Project until the 1,000th unit and which is located approximately two miles from the Project site, and the proposed on-site fire station sites would adequately serve the Project. Up to four on-site fire stations would be built and equipped as part of the Project. MM 16-1, MM 16-2, and MM 16-3 ensure the fire stations are provided and funded:

In summary, the analysis concluded that with adherence to requirements for fuel modification zone management (MM 3-9) and emergency access (MM 3-7), the Project's potential impact related to wildfires would be less than significant. MM 3-9 requires property owner notification of their responsibilities for maintaining the fuel modification zone(s) on their property. The Project would not result in significant impacts related to proximity of a land use representing a potential fire hazard. Similarly, with implementation of MMs 16-1 through 16-3 potentially significant impacts related to fire protection services to levels would be reduced to less than significant.

This analysis considers the fire-related impacts of the Approved Project and the Approved Project with Proposed Modifications both with and without implementation of mitigation measures MM 3-9, 16-1, 16-2, and 16-3 described in the 2019 EIR and adopted in connection with the Approved Project pursuant to its adopted Mitigation Monitoring and Reporting

Program (MMRP). In addition, the Settlement Agreement obligates the Project to comply with certain fire risk reduction measures that go beyond those imposed by the MMRP. While not necessary to maintain wildfire impacts to less than significant, the fire risk reduction measures mandated by the Settlement Agreement even further reduce the Project's wildfire risks, as discussed below.

3.2.6 SEIR THRESHOLDS OF SIGNIFICANCE

Following publication of the 2019 EIR, new provisions were added to the CEQA Guidelines that focus on project's impacts related to wildfire hazards. Specifically, a new Section XX was added to Appendix G to address the need to evaluate wildfire impacts. The new Appendix G provisions ask whether a project located in or near state responsibility areas (i.e., areas where the state has financial responsibility of preventing and suppressing fires), or lands classified as very high fire severity zones by local agencies, would:

- "Substantially impair an adopted emergency response plan or emergency evacuation plan";
- "Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire";
- "Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines, or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment"; or
- "Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes."

This section of the SEIR incorporates the new Appendix G questions into the following thresholds of significance, which build on the thresholds used in the 2019 EIR:

Threshold 2.2-1 ***If located in or near state responsibility areas or lands classified as very high hazard severity zones, would the project constitute a dangerous fire hazard or otherwise expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires, including as a result inadequate access, inadequate water and pressure to meet fire flow standards, downslope or downstream flooding or landslides, runoff, post-fire slope instability, or drainage change?***

Threshold 2.2-2 ***If located in or near state responsibility areas or lands classified as very high hazard severity zones, due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or uncontrolled spread of a wildfire?***

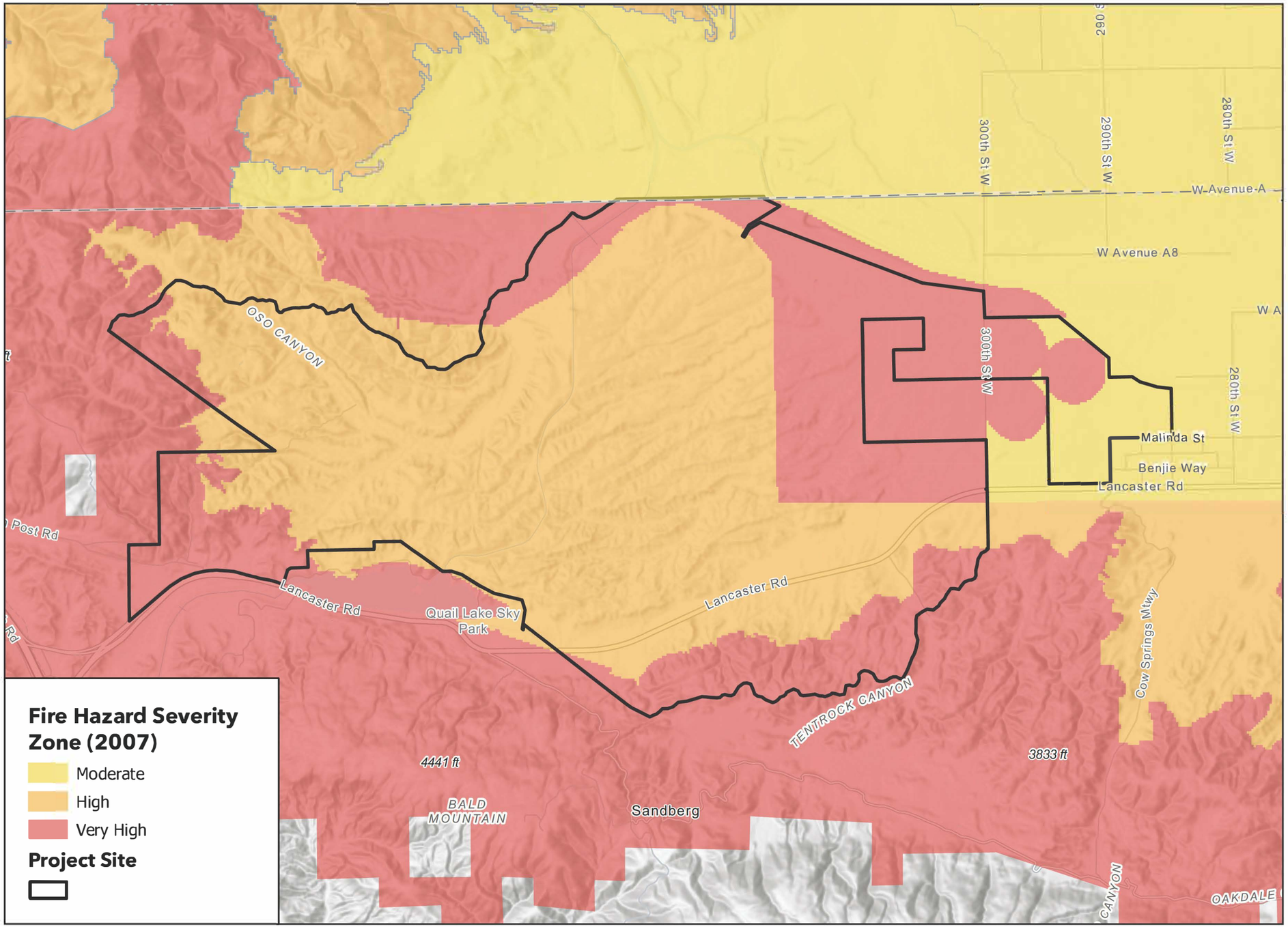
Threshold 2.2-3 ***If located in or near state responsibility areas or lands classified as very high hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?***

Threshold 2.2-4 ***If located in or near state responsibility areas or lands classified as very high hazard severity zones, would the project require installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities), including new or physically altered governmental facilities to maintain acceptable service standards or response times, that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?***

Threshold 2.2-1 ***If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project constitute a dangerous fire hazard or otherwise expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires, including as a result of inadequate access, inadequate water and pressure to meet fire flow standards, downslope or downstream flooding or landslides, runoff, post-fire slope instability, or drainage change?***

Fire Hazard Severity Zones, Wildfire Hazards and Risk

The Project site is located in or near state responsibility areas or land classified as very high fire hazard severity zones. Specifically, the Project site's potential wildfire hazard is mapped by CAL FIRE as primarily Moderate and High with the western portion of the site mapped as Very High (Exhibit 3.2-2). Fire Hazard Severity Zone maps depict wildfire hazard based on wildfire intensity and likelihood, in addition to firebrand hazard for non-wildland areas. At the time of the 2019 EIR, the extent of the VHFHSZ was mapped at 3,906 acres. Since the approval of the 2019 EIR, CAL FIRE has updated the Fire Hazard Severity Zone maps for the State Responsibility Area (SRA). Updated Fire Hazard Severity Zone maps were released in April 2024 and the VHFHSZ has been expanded to 7,089 acres. A comparison of Fire Hazard Severity Zones from the 2019 EIR and the current maps is provided below in Table 3.2-4. As shown in Exhibit 3.2-7, the expansion of the VHFHSZ has largely occurred in the western half of the Project site. Within proposed development areas specifically, 2,283 acres are designated as VHFHSZs, with 3,870 acres designated as High, and 431 acres designated as Moderate (Table 3.2-5).



Source: Dudek 2007

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Fire Hazard Severity Zones (2007)

Exhibit 3.2-7

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TABLE 3.2-4
COMPARISON OF PROJECT SITE FIRE HAZARD SEVERITY ZONES FROM 2019 AND 2024.

Fire Hazard Severity Zones	2019 Mapping	2024 Mapping
Moderate	437 ac.	603 ac.
High	7,980 ac.	4,631 ac.
Very High	3,906 ac.	7,089 ac.
Source: OSFM, 2007, OSFM, 2024		

TABLE 3.2-5
FIRE HAZARD SEVERITY ZONE CLASSIFICATIONS AT THE PROJECT SITE.

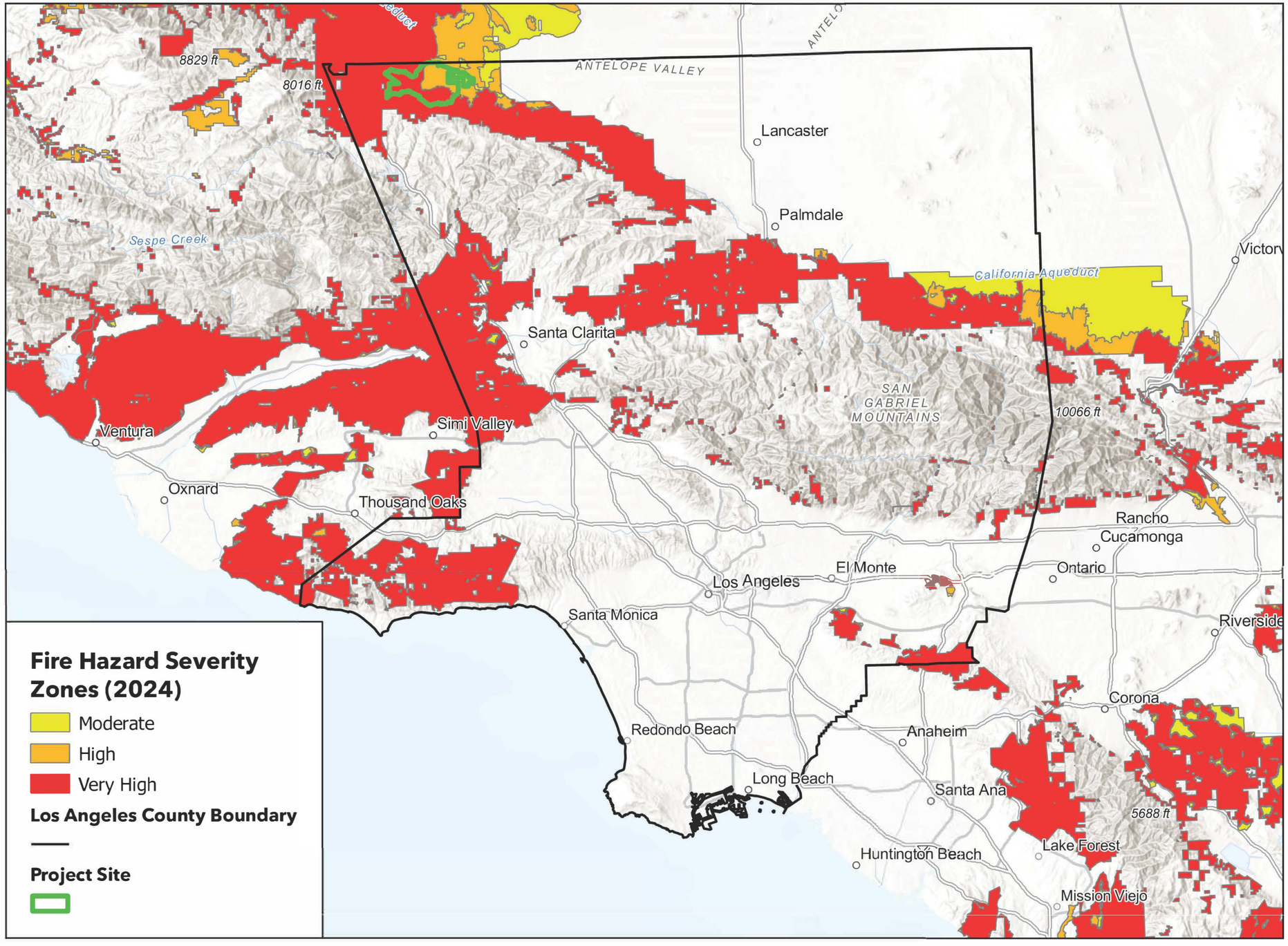
Fire Hazard Severity Zone	Project Site Acres	Development Area Acres
Moderate	601	431
High	4,629	3.870
Very High	7,089	2,283
Source: OSFM, 2024		

Wildfire hazard at the Project site is lower than most State Responsibility Areas (SRA) in Los Angeles County. As presented in Table 3.2-6 and Exhibit 3.2-8, 92% of SRA lands within Los Angeles County are designated as VHFHSZ, with only 8% classified as Moderate (4%) or High (4%). The Project site is subject to lower severity wildfire conditions compared to other unincorporated areas of Los Angeles County due to lower hazard fuels, gentle topography, and reduced burn probability.

TABLE 3.2-6
FIRE HAZARD SEVERITY ZONES IN THE SRA WITHIN LOS ANGELES COUNTY

Fire Hazard Severity Zone	Acres	Proportion of County SRA
Moderate	21372	4%
High	18079	4%
Very High	456379	92%

Within the greater Southern California region which includes Santa Barbara, Los Ventura, Los Angeles, Orange, San Bernardino, Riverside, San Diego, and Imperial Counties, 75% of the SRA is designated as VHFHSZ (Table 3.2-7). See Exhibit 3.2-9 for a graphical depiction of FHSZs within Southern California.



Source: Dudek 2024

Los Angeles County Fire Hazard Severity Zones (2024)

Exhibit 3.2-8

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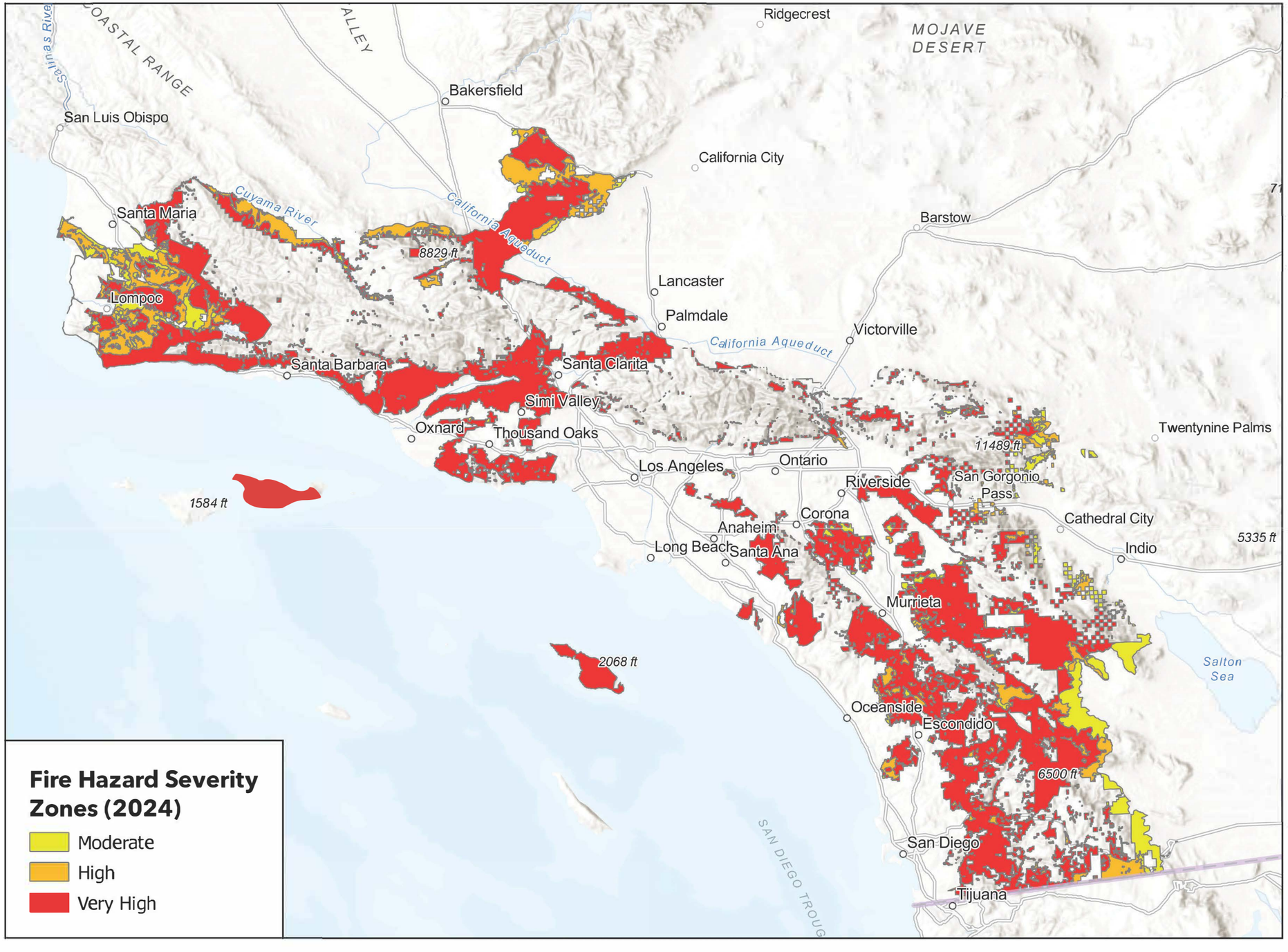

Source: Dudek 2024

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Southern California Fire Hazard Severity Zones (2024)

Exhibit 3.2-9

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Map not to scale

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TABLE 3.2-7
FIRE HAZARD SEVERITY ZONES IN THE SRA
WITHIN GREATER SOUTHERN CALIFORNIA

Fire Hazard Severity Zone	Acres	Proportion of County SRA
Moderate	921	13%
High	784	12%
Very High	1324	75%

While the Project site exists partially within a Very High Fire Hazard Severity Zone (Exhibit 3.2-2), this designation does not prevent development in hazardous fire areas. Uses of Fire Hazard Severity Zone maps, as determined by the Office of the State Fire Marshall, are summarized below.

- Designate areas where California's wildland urban interface building codes apply to new buildings.
- Included into real estate disclosures.
- Guide planning, prevention, and mitigation activities/requirements that reduce risk.
- Considered by local governments in General Plans

While the Project is partially located in Very High FHSZ, it would have significantly lower potential for actual loss as compared to other older communities (such as Paradise, Coffee Park, etc.) and even the older homes that occur within the vicinity of the Project. This determination is based upon the distinction between hazard (which the State categorizes) and risk (which the state does not quantify). Hazard is a combination of potential fire behavior (flame length, crown fire occurrence, capacity to generate embers) and burn probability in the likely mature vegetation of a given area. Risk, however, is the potential for structural loss from said fire. Thus, even if there is potential low fire hazard in a given area (expected low flame lengths), a given home might be at high risk of ignition if the physical characteristics of the property would facilitate structural ignition (e.g., flammable vegetation next to a home constructed with wood siding). Conversely, a home might be in a high-hazard area (potential exposure to high flame lengths and ember generation) but may be at low risk of ignition if the house is built with ignition-resistant construction materials and the resident has created adequate defensible space around the home.

Modern planned communities such as the Approved Project typically contain large areas where fuel modification is provided and includes a perimeter zone of defensible space between the wildland-urban interface (WUI) and community structures. Research indicates that scenarios with lower housing density, large lots (ranchettes) and larger numbers of small, isolated clusters of development resulted in higher predicted fire risk. Syphard, et. al. (2013) The current low density general plan land use patterns that currently exist at the site represent a higher fire risk than the Approved Project which would have a higher density. Further, the developed Project site would act as a large, irrigated fire break that would be

expected to modify fire spread by preventing large scale wildland fires from spreading across the Project site.

While CAL FIRE has designated portions of the Project site as a VHFHSZ, the risk of home ignition would likely be very low due to actions that reduce the risk of ignition. Projects within fire hazard zones are required to provide for a level of planning, ignition resistant construction, access, water availability, fuel modification and construction materials and methods that have been developed specifically to allow safe development within these areas. New development projects in Los Angeles County are required to meet and, in many cases, actually exceed these requirements.

While CAL FIRE's Fire Hazard Severity Zone map is utilized as a tool for quantifying the likelihood of severe wildfire behavior, it does not reflect community risks as it does not consider vital attributes of community wildfire resiliency including but not limited to:

- Home Construction Materials and Methods (roofing material, siding material, vent style, etc.)
- Defensible Space and Fuel Modification
- Urban Fuels/Vegetation
- Community Design (Intermix or Interface)
- Emergency Response Capacity
- Early Wildfire Detection Potential
- Evacuation Capacity

While the extent of the VHFHSZ is substantial across Southern California, there is no evidence that modern, code-compliant master planned communities are at high risk from wildfire if located within a designated VHFHSZ. Master-planned communities built to modern ignition resistant standards provide passive fire protection that is highly successful at minimizing damage and loss of structures (CBIA, 2022). The State Fire Marshal's statistics demonstrate that homes built to California Building Code Chapter 7A standards effectively reduce fire risks to homes built in the wildland urban interface (WUI) and fire hazard severity zones (CBIA, 2022). Further, fire risk is reduced when homes are built as part of a properly planned and mitigated master-planned community, like the Project, the risk of significant structural loss is extremely low (FEMA, 2023). According to the Office of the State Fire Marhsall (OSFM) Property Loss Data, no master-planned community built after the adoption of California Building Code Chapter 7A has been reported as having suffered extensive structural losses.

The Project would include a development of a new community with commercial uses, recreational uses, and institutional/civic uses, some of which would include healthcare facilities or spaces that would have the potential to hold large events or assembly of people. As disclosed in the 2019 EIR, fires can occur at construction sites. Factors affecting fire risk at construction sites include, but are not limited to, stockpiling construction materials and electrical, plumbing, and mechanical systems installation.

The Project's proposed development would introduce roughly 50,000 people into currently undeveloped areas. In general, research has suggested that urban development in the wildland-urban interface has resulted in more wildland fire ignitions when analyzing all WUI communities built nationwide from 1990-2010. (Radeloff et al. 2018). In their study of the drivers of wildfire ignitions in California, Chen and Jin concluded that the majority of human caused ignitions occur near populated regions and along the traffic corridors (Chen and Jin, 2022). When assessing the drivers of human caused ignitions in Southern California, powerlines, arson, and equipment use were identified to be the dominant form of human-caused ignitions (Syphard and Keeley, 2015). Therefore, new developments in the WUI may result in an increased potential for these specific ignition types.

In its current state, the Project site is largely undeveloped, and human presence is generally limited. With a greater number of people and structures, there is a greater potential for activities and accidents involving the use of fire, flammable/combustible materials, and electrical systems, along with the creation of fire hazards from candles, cooking, electrical and heating sources, and smoking and the use of equipment, appliances, and materials that may cause fire, explosion, or the release of smoke, gas, and/or hazardous materials. In addition, secondary impacts of new development in the WUI such as increased vehicle traffic and road use have the potential to increase the likelihood of roadside ignitions caused by vehicles themselves or human negligence (ex. Cigarette disposal, dragging chains). Thus, new development in the WUI may increase the likelihood of incidents requiring LACFD response and calls for service over existing conditions.

It is difficult to determine the direct correlation between ignition risk and increased people residing in the WUI. For example, there is no standard method to assess how many new ignitions will occur as a result of bringing in roughly 50,000 people to the WUI due to the dynamic nature of wildfire risks and ignitions. Existing research related to wildfire ignitions generally does not distinguish between the various potential forms of urban development that may occur within the WUI. . As evident from many studies, wildfire risk to structures and the potential for human-caused ignitions are not identical across all forms of WUI development. For example, both wildfire risk and ignition risk have been found to be higher where houses meet or intermingle with wildfire prone vegetation (Wildland-Urban Intermix) (Radeloff et al., 2018; Theobald et al., 2007; Stewart et al., 2007; Sirca et al., 2007). Research explains that "[t]he WUI, where housing spacing is low to intermediate, is an apparent influence in most ignition maps," further enforcing the conclusion that more rural/large parcel housing poses a higher ignition risk than master planned communities with more urbanized landscapes. (Syphard and Keeley, 2015). As the degree of development-adjacent vegetation increases, as does the potential for vegetative ignition and wildfire. This relationship is true for wildfire risks to structures, as well as the risk for ignitions to occur and spread offsite. Conversely, the potential for human caused ignitions in higher-density developments with a clear boundary between urban and wildland areas (Wildland-Urban Interface) is inherently lower due to low or absent levels of wildfire prone vegetation intermingled between structures and roadways. Therefore, relying solely on the amount of new residents in the WUI to determine the increase in wildfire ignition risk from baseline falls short and does not consider important variables such as WUI form (Intermix vs Interface), defensible space and Fuel Modification Zone requirements (including roadside

fuels reduction), emergency response, homeowner education, HOA enforcement of wildfire safety requirements, adjacent wildland vegetation conditions, undergrounding of powerlines, and other wildfire safety measures to reduce ignition risk.

While this Project would introduce new land uses and people in an area that is within a high and very high fire hazard severity zone, upon development of the Project, the site would become a fire-hardened, defensible community that includes hardened evacuation routes out of the area. As discussed in more detail herein, The Centennial Project's approach to risk reduction is multi-layered and includes the following measures:

- Unlike developments in the WUI prior to 2007, wildfire risks associated with the Project are reduced due to modern fire safety regulatory requirements such as extended defensible space mandates including the Zone 0 – ember resistant zone which has been proven to greatly increase home survivability during wildfire exposure. In addition, the Project will feature highly ignition resistant structures in compliance with Chapter 7A of the California Building Code. These requirements have resulted in increased wildfire safety for code complaint modern master planned communities such as the Centennial Project which includes regulatory enforcement mechanisms to ensure these requirements are maintained in perpetuity.
- State-of-the-art, ignition-resistant construction standards for all new residential, non-residential, and public facility buildings meeting Chapter 7A of the California Building Code (CBC), Title 26 of the County of Los Angeles Building Code (LACBC), and the Los Angeles County Fire Department (County Fire) requirements. These standards require, among many other measures, fire-resistant roofing to resist ignition from embers or building-to-building fires, vent covering and opening limitations to avoid ember intrusion, noncombustible or ignition-resistant exterior walls, ignition-resistant eaves, and porch ceilings, insulated windows and exterior doors, fire-resistant exterior decks and walkways, and ignition-resistant under-flooring and appendages. These standards have proven to substantially reduce the risk of buildings catching fire or spreading fires during a wildfire event.
- Fuel modification zones around the perimeter of the Project ranging from 100-200 feet to provide defensible space and firefighter access to protect against encroaching fires and minimize the risk of fires originating on the Project site from moving offsite. The fuel modification zones are based on County Fire requirements and confirmed with site-specific modeling. The zones will be implemented by knowledgeable professionals, inspected by third-party inspectors, and maintained in perpetuity by the HOA, as required by applicable regulations.
- Ongoing, funded maintenance, inspections, and enforcement of fuel modification zones and other fire protection features by the HOA or similar organization funded by an assessment or tax on parcels within the Project, as required by applicable regulations.
- Existing and planned firefighting capabilities to ensure a response to fire and medical emergencies, as required by applicable regulations.

- In all structures, additional fire protection systems, including internal fire sprinkler systems, as required by applicable regulations.
- Fire-resistant landscaping regulatory requirements.
- Multiple access routes for fire apparatus and emergency vehicles, as required by applicable regulations.
- Multiple evacuation routes during a wildfire event. *See the Centennial Wildfire Evacuation Technical Report for a detailed description of evacuation routes.*
- Code compliant water capacity, delivery, and availability, with additional surface water supply.
- Ongoing resident fire safety education and evacuation planning.
- Undergrounding of all proposed electrical transmission lines, as required by applicable regulations.

Project Placement and Wildfire Risk

Project placement within the landscape relative to fire history, topography, and wind patterns significantly influences wildfire risk. In California, wildfire behavior is driven by topography, fuel, climatic conditions, and fire weather (such as low humidity and high winds). The planning and siting of a development project within the landscape influence its impact related to fire risk.

Project Placement in Relation to Climate, Topography and Vegetation

The existing conditions of the Project site are similar to the conditions analyzed in the 2019 EIR. The 2019 EIR identified similar potential fire hazards at the site such as low moisture content in vegetation, Santa Ana wind events, and fire history on the Project site. The 2019 EIR determined that development of the Project site would reduce fire hazards associated with the natural vegetation once it is replaced with urban development and landscaping. Although the 2019 EIR identified a reduction in hazardous fuels due to Project development, the 2019 EIR identified a potential for increased fire risk associated with the presence of brush near the wildland-urban interface, increased human activity on and around the Project Site, and an increase in potential for fires due to accidental and arson-related causes.

As discussed in Section 3.2.3, the region is influenced by both the arid continental climate to the east and the moister Mediterranean climate to the west; therefore, the region is described as having a hot-to-cold and semi-arid-to-sub-humid climate. The region is subject to Santa Ana winds, that occur near the end of fire season during late summer and early fall. The Project Site along with the entirety of Los Angeles County is occasionally subject to strong Santa Ana wind events, which are dry, warm winds that flow from the higher desert elevations in the east through the mountain passes and canyons which increase in velocity as they converge through the canyons. As discussed in the 2019 EIR, wildfire risk increases during Santa Ana wind events.

Topography also influences fire risk because it affects the rate of fire spread. As disclosed in the 2019 EIR, steep terrain can result in faster fire spread up-slope and slower spread down-slope. Terrain that forms a funneling effect, such as chimneys, chutes, or saddles on the landscape can result in especially intense fire behavior, including faster spread and higher intensity. Conversely, flat terrain tends to have little effect on fire spread, resulting in fires that are driven by vegetation and wind. Topographic features that may present a fire spread facilitator are the slope and canyon alignments, which may serve to funnel or channel winds, thus increasing their velocity and potential for influencing wildfire behavior.

TABLE 3.2-8
EFFECTS OF TOPOGRAPHIC FEATURES ON FIRE BEHAVIOR

Topographic Feature	Effect
Narrow Canyon	Surface winds follow canyon direction, which may differ from the prevailing wind; wind eddies/strong upslope air movement expected, which may cause erratic fire behavior; radiant heat transfer between slopes facilitates spotting/ignition on opposite canyon side.
Wide Canyon	Prevailing wind direction not significantly altered; aspect significant contributor to fire behavior. Wide canyons are not as susceptible to cross-canyon spotting except in high winds.
Box Canyon/ Chute	Air is drawn in from canyon bottom; strong upslope drafts. No gaps or prominent saddles to let heated air escape. Fires starting at the canyon bottom can move upslope very rapidly due to a chimney-like preheating of the higher-level fuels and upslope winds.
Ridge	Fires may change direction when reaching ridge/canyon edge; strong air flows likely at ridge point; possibility for different wind directions on different sides of the ridge. Ridges experience more wind. Fires gain speed and intensity moving toward a ridge. Fires burning at a ridge can exhibit erratic fire behavior. Strong air flows can cause a whirling motion by the fire. As the wind crosses a ridge it usually has a leeward eddy where the wind rolls around and comes up the leeward side.
Saddle	Potential for rapid rates of fire spread; fires pushed through saddles faster during upslope runs. Winds can increase when blowing through saddles due to the funneling effect of the constricted pass. On the other side, winds will slow, but erratic winds potentially occur at the saddle due to eddies.
Sources: Teie 1994.	

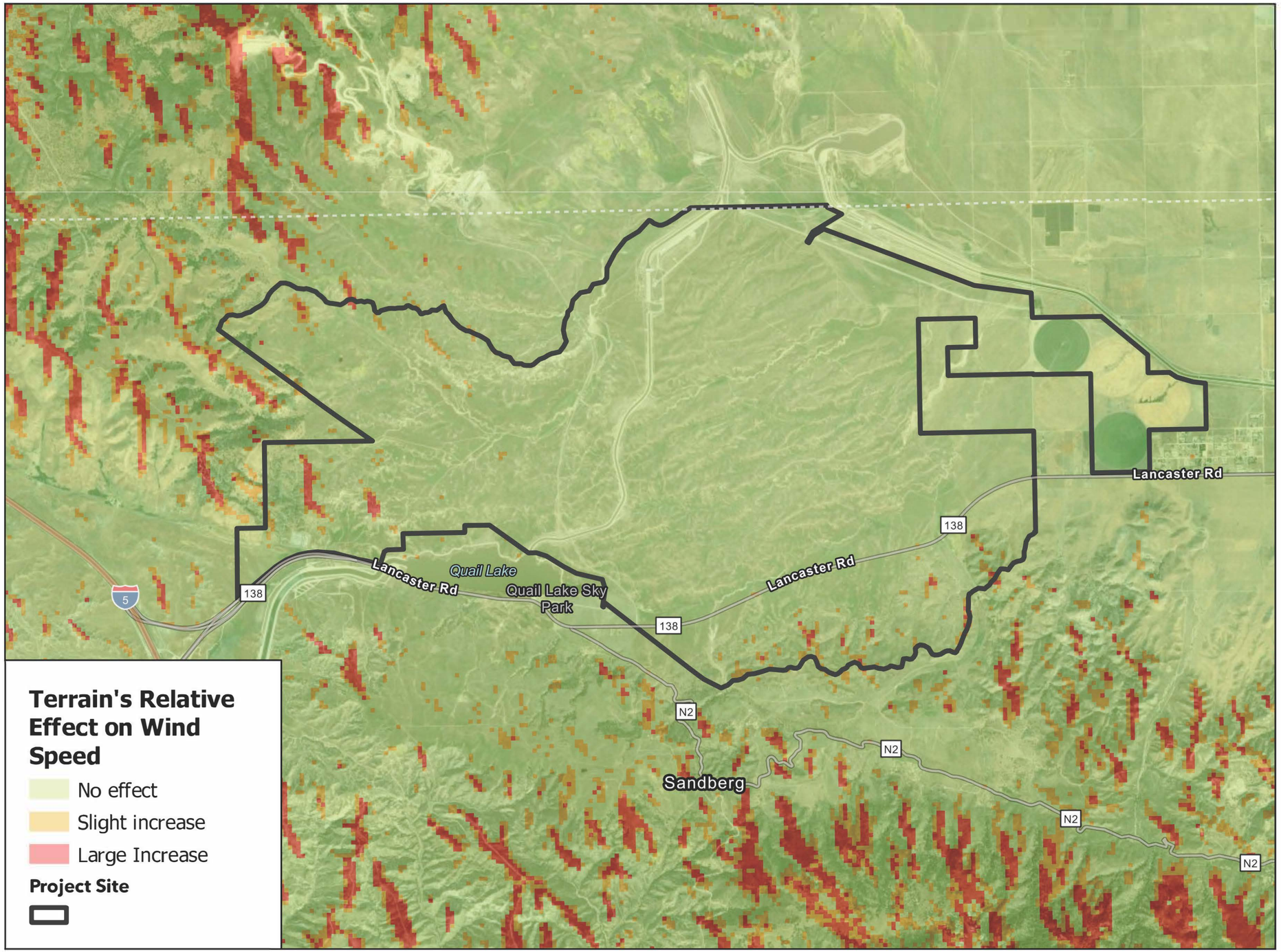
According to the National Interagency Fire Center (NIFC), "Fire spread is generally less rapid on flat terrain compared to slopes because flames do not have the same upward momentum. The spread rate of a fire increases with slope due to the fact that heat and flames are preheated by the sloping surface" (NIFC, 2023). The Federal Emergency Management Agency (FEMA) notes, "Firefighting operations are more challenging and dangerous on slopes due to difficult access and increased fire behavior. Flat areas provide better access and safety for firefighting efforts" (FEMA, 2021). The International Association of Fire Chiefs (IAFC) states, "Preventative measures and fire-resistant infrastructure are more effectively implemented on flat land, reducing overall fire risk. Sloped areas present challenges for these

measures due to increased difficulty in maintaining defensible spaces and infrastructure" (IAFC, 2023).

The Project site's topography is variable; however, the majority is considered flat to rolling. As presented in Table 3.2-1, the majority of the Project site (87%) is less than 30% slope. The Project's proposed development areas are not located within the site's steeper, and thus riskier, areas. Roughly 80% of proposed development would occur in areas with existing slopes of less than 15%. The Project would result in grading within the developed portions of the site, further reducing the sloped areas on the Project site proposed for development. Further, the Project's proposed development areas are not located near topographic features such as substantial ridgelines or narrow canyons that may exacerbate fire severity (NIFC, 2023). In fact, the specific plan prohibits Project development along steep slopes and those portions of the Project site that can be characterized as rugged terrain, though the Specific Plan does require that these restricted areas be accessible to firefighting equipment via air and existing fire roads. Moreover, clearance for fire access roads and gates will be incorporated into the Project's subsequent subdivision map approval process in accordance with LACoFD requirements, thereby facilitating the provision of fire suppression services to this difficult terrain. Development in flat areas reduces risk compared to development in steep and varied terrain due to slower fire spread, generally lower fire intensity, easier fire suppression, and better implementation of preventative measures. These factors contribute to a generally safer environment for development in flat areas compared to slopes.

The Project site does not include topographic features that are likely to substantially increase wind speeds or alter wind patterns. The Project site is set back from large expanses of open space to the south, east and west and the terrain within the San Gabriel Mountains, including multiple sub-drainages and canyons. While these topographic features exist offsite, they are not likely to impact localized wind speeds and patterns within the Project site. To better understand the effect of terrain on winds within the Project site, Santa Ana wind conditions were modeled using the WindNinja software. WindNinja is a specialized software developed by the U.S. Forest Service aimed at simulating and predicting wind flow patterns in complex terrain, particularly useful for applications in wildland fire management. As provided in Exhibit 3.2-10, wind speeds are not exacerbated by topography across the vast majority of the Project site. Areas where wind speeds are exacerbated include scattered ridgeline in the far western and southern regions of the Project site located away from proposed development areas.

Vegetation can also influence fire risk by providing a fuel source that is subject to ignition. As detailed in Section 3.2.3 and Table 3.2-2, the Project site is dominated by grassland vegetation which covers roughly 76% of the site. In areas within 500-feet of proposed development specifically, 83% of vegetation is comprised of grass and herbaceous fuels. Although grass fuels exhibit high ignition risk due to seasonal drying and a high surface-area-to-volume, they typically result in faster moving fires with lower flame lengths and heat output. Vegetative hazard from the Project site's grass fuels is reduced as a result of Tejon Ranch's historic and active grazing operations. The Project's proposal to locate development areas adjacent to grasslands reduces risks from wildfire compared to other more hazardous vegetation types (i.e. chapparal, dense forest). Structure ignitions most often occur from



Source: Dudek 2024

Terrain's Relative Effect on Wind Speed

Exhibit 3.2-10

Centennial Supplemental Environmental Impact Report

N W E S

Map not to scale

PSOMAS

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firebrands or radiant heat from directly adjacent fires (Cohen, 1995). Given rapid fuel consumption, grass fires do not expose structures to radiant heat for long periods compared to other high load fuel types. The threat to structures from potential grass fires within the Project site is further reduced given continuous perimeter Fuel Modification Zones which prevent structure exposure to direct and radiant heat.

Chapparal vegetation is considered the highest hazard vegetation type within the Project site. However, this vegetation type covers less than 1% of the Project site, with no chapparal vegetation present within 500 feet of planned development areas. Wildfire threat to structures from chaparral vegetation is determined to be negligible given its highly limited extent within the Project site and near proposed development. The nearest open space vegetation is separated from the site's ignition resistive structures by code compliant fuel modification zones. Fuels in the Project site are not conducive of widespread extreme fire intensity. Upon Project implementation, the Project would convert readily ignitable fuels that are onsite to buildings, roadways, and maintained landscaped areas. The Project's proposed structures as part of would be built in accordance with state-of-the-art, ignition-resistant construction standards and building codes required by the County and the State, including Chapter 7A of the Los Angeles County Building Code (Title 26, Chapter 7A), which requires that the buildings are resistant to ignitions from direct flames, heat, and embers.

The Project would maintain open space uses throughout the Project site, with large open space areas within the western and southern portions of the Project site. While large open space would be in proximity to developed areas on the Project site, the Project would incorporate a 100-foot-to-200-foot fuel modification zones (FMZs) around the entire Project perimeter, which would provide defensible space, provide accessibility to firefighters and fire-fighting equipment, and reduce fire intensity if ignition were to occur. FMZs thus mitigate conditions that might cause fire originating in an onsite structure to ignite offsite vegetation in the WUI area and, conversely, a wildfire burning in vegetative fuels to transmit fire to buildings. Among other benefits, FMZs not only reduce fuel that is available to a fire but also eliminate landscape areas where embers can ignite vegetation and reduce flame lengths and the amount of heat produced by fire. Landscaping within the FMZs or Project landscaping throughout the site would include drought-tolerant, fire resistive trees, shrubs, and groundcovers. The planting list and spacing would be reviewed and approved by LACoFD, included on submitted landscape plans. The plantings would be consistent with LACoFD's Fuel Modification Plant Selection Guidelines (LACoFD 2021). Additionally, the Project would also include additional other fuel modification and landscaping requirements such as roadway fuel modification zones, stormwater basin vegetation management, and the prohibition of certain highly flammable plants which would further reduce the risk of fire ignition and spread.

Per 2019 EIR mitigation measure MM 3-9, the Project applicant must prepare a Fuel Modification Plan (FMP) demonstrating compliance with the then-current County Fire Code Title 32 fuel modification standards, which must be approved by LACoFD in consultation with Cal Fire. The Specific Plan, pages 3-99 through 3-100, provides significant detail on the required content and implementation of the FMP. Moreover, MM 3-9 requires the Project applicant to provide all new residents and business owners with recorded Covenants,

Conditions and Restrictions (CC&Rs) that identify their responsibilities for maintaining FMZs located on their property, as defined in the approved Fuel Modification Plan, which CC&Rs are also subject to County approval to confirm that new property owners will be informed of their maintenance responsibilities.

Per applicable County fuel modification requirements, each fuel modification areas will incorporate three zones, these are 1) a setback zone, 2) an irrigated zone, and 3) a thinning zone. The widths of the zones will vary, depending on the anticipated fire behavior. The widths will either total 100, 150, or 200 feet, which widths well exceed the minimum widths required by Public Resources Code 4291, discussed in the Regulatory Setting section above. Landscaping on private lots directly adjacent the WUI will include standard County fuel modification requirements. Flammable plant species will be restricted, spacing standards implemented, and basic low fuel requirements will be applicable per LACoFD plant selection guidelines. The following descriptions provide details for the different fuel modification zones on site:

Zone A (Setback Zone)

- Irrigation by automatic or manual systems shall be provided to landscaping to maintain healthy vegetation with high live fuel moisture and greater fir resistance.
- Landscaping and vegetation in this zone shall consist primarily of green lawns, ground covers and adequately spaced shrubs and trees. The overall characteristics of the landscape shall provide adequate defensible space in a fire environment.
- Plants in Zone A shall be inherently highly fire resistant and spaced appropriately. Species selection should be made referencing Appendix E Fuel Modification Plant Reference. Other species may be utilized subject to approval by the Homeowners' Association (HOA).
- Except dwarf varieties or mature trees small in stature, trees are generally not recommended within Zone A, but are not prohibited.
- Vines and climbing plants shall not be allowed on any combustible structure.
- Target tree species (including but not limited to Eucalyptus, Pine, Juniper, Cypress, Cedar, Canary Island Date Palm, Mexican Fan Palm and Bougainvillea) shall not be allowed within 10 feet of combustible structure, defined as any accessory structure not required to be built to Chapter 7A building code standards (ex. Structures under 120 square feet).
- Within Zone A will be the Home Ignition Zone from 0 to 5 feet of the exterior wall surface of the building extending five feet on a horizontal plane.
    - This zone shall be continuous hardscape or limited to fire-resistive plantings acceptable to LACoFD.
    - Vegetation in this zone shall not exceed 6 to 18 inches in height and irrigation is required,

- This zone shall be free of all combustible materials and the use of mulch is prohibited.

Zone B (Irrigated Zone)

- Irrigation by automatic or manual systems shall be provided to landscaping to maintain healthy vegetation with high live fuel moisture and greater fire resistance.
- Landscaping and vegetation in this zone shall consist primarily of green lawns, ground covers, and/or adequately spaced shrubs and trees. The overall characteristics of the landscape shall provide adequate defensible space in a fire environment.
- Plants in Zone B shall be fire resistant and spaced appropriately. Species selection should be made referencing Centennial Specific Plan, Table 3-7, "Plant List," in Section 3.3, "Landscape Plan." Other species may be utilized subject to approval by the HOA.

Zone C (Native brush thinning zone)

- Irrigation systems are not required for this zone.
- Landscaping and vegetation in this zone may consist of modified existing native plants, adequately spaced ornamental shrubs and trees, or both. There may also be replacement landscape planting with ornamental or less flammable native species to meet minimum slope coverage requirements of County Public Works or Parks and Recreation Landscape or Hillside ordinances. In all cases the overall characteristics of the landscape shall provide adequate defensible space in a fire environment.
- Existing native vegetation shall be controlled by thinning and removal of species constituting a high fire risk; including but not limited to laurel sumac, chamise, ceanothus, sage, sage brush, buckwheat, and California juniper. Please reference the County Fuel Modification Plant Reference.
- Fuel loads shall be reduced by pruning up the lower one-third of remaining trees or shrubs and removing dead wood. Native plants may be thinned by reduced amounts as the distance from development increases.
- Plants in Zone C shall be spaced appropriately. Species selection should be made referencing the County Fuel Modification Plant Reference.
- General spacing for existing native shrubs is 15 feet between canopies. General spacing for existing native trees is 20 feet between canopies.

The distance requirements for each zone are described below:

- 200-foot Setback
  - Zone A extends 20 feet from the edge of any combustible structure, accessory structure, appendage or projection.
  - Zone B extends from the outermost edge of Zone A to 100 feet from structure (or 80 feet from the outermost edge of Zone A).

  - Zone C extends from the outermost edge to Zone B to 200 feet from structure (or 100 feet from the outermost edge of Zone B).
- 150-foot Setback
  - Zone A extends 20 feet from the edge of any combustible structure, accessory structure appendage, or projection.
  - Zone B extends from the outermost edge of Zone A to 50 feet from the structure (or 30 feet from the outermost edge of Zone A).
  - Zone C extends from the outermost edge of Zone B to 150 feet from the structure (or 100 feet from the outermost edge of Zone B).
- 100-foot Setback
  - Zone A extends 20 feet from the edge of any combustible structure, accessory structure, appendage, or projection.
  - Zone B extends from the outermost edge of Zone A to 50 feet from the structure (or 30 feet from the outermost edge of Zone A).
  - Zone C extends from the outermost edge of Zone B to 100 feet from the structure (or 50 feet from the outermost edge of Zone B).

Open space areas at the Project would all be provided with fire-resistant landscaping that would be maintained on an ongoing basis and inspected annually, as required by applicable regulatory mandates. Additionally, many of the Project's interior open space areas are surrounded by development areas, limiting the potential for open spaces to function as pathways for wildfire to enter the interior of the Project. Many of the Project's open space areas will also be graded and re-vegetated with fire-resistant landscapes and would adhere to the County's Prohibited Plant List.

In accordance with the Specific Plan, the Master HOA must hire a Community Forester who is trained in urban forestry, arboriculture, horticulture, or landscape architecture to undertake tree management responsibilities. The Community Forester will also coordinate annual third-party FMZ inspections on the Project site to ensure that FMZ maintenance is being regulatory implemented in accordance with the Fuel Management Plan. The inspector would evaluate the FMZs for compliance with regulations and confirm that they are operating properly, and would notify LACoFD of any FMZ compliance violations. The Community Forester is required to develop a policy for managing public trees on the Project site and educating Project residents about the importance of trees in the community and is responsible for implementing the Project's fire-resistant landscape plan. The Specific Plan further requires the Community Forester to develop programs that involve community organizations and residents in tree preservation, planting and tree care so as to ensure that community trees are, among other things, maintained in accordance with all Fire Code access requirements. Per the Specific Plan, the Community Forester must also prepare an annual tree management plan and implement programs to improve the communities tree canopy in a manner that complies with all Fire Code and LAFCD requirements. In addition, the Specific Plan requires the Community Forester to maintain the Project's fire-resistant plant palette and to consult with the County's staff biologist regarding proposed revisions to the

community plant palette described in the Specific Plan. However, the LAFCD shall have final approval over the final plant palette for fuel modification zones and modifications thereto.

Project Placement in Relation to Historic Fires

Fire history data provides valuable information regarding fire spread, fire frequency, ignition sources, and vegetation/fuel mosaics across a given landscape. Fire history data can be used to show whether large fires have occurred in the area of the Project site, which indicates whether they may be possible in the future. As described above, the Project site and the surrounding vicinity have been subject to wildfires. Most of these fires have been within the direct vicinity of the Project site, however, some fires have occurred within the Project boundaries. Factors that contribute to the limited wildfire history at the Project site is believed to be largely due to the site's terrain, managed fuels, barriers to wildland fire spread, quick wildfire detection and response, the removal of fine fuels by cattle grazing and a lower risk for human-caused ignitions as compared to more urbanized areas off-site. Due to the fire break effectively created by the existing SR-138 right-of-way, wildfires advancing toward the Project site from the south rarely enter the interior of the site.

Based on fire history, wildfire risk for the Project site is associated primarily with a Santa Ana wind-driven wildfire burning or spotting onto the site from the north, southeast, or with a fire approaching from the west/northwest during more typical on-shore weather patterns. The fire history record highlights very few wildfires originating to the east of the Project site. Agricultural and disturbed landscapes within this region of the Antelope Valley are not conducive to wildfire spread. The absence of dense, continuous fuel sources limits the potential for fire spread in agricultural and disturbed areas. As stated by the USFS, "Agricultural practices and land disturbances often lead to lower fuel loads due to regular crop harvesting and land clearing, which can reduce the risk of uncontrolled fire spread" (USFS, date).

According to the FRAP database, 91 wildland fires have occurred on or within 5 miles of the Project since 1800, with 10 wildfires burning onsite at an average fire return interval, or the average time between successive wildfires in a specific area, of roughly 11 years. Analyzing wildfires within 5 miles of the Project Site generally provides a good overview of large fire spread in terrain and fuels similar to the Project site, and highlights fires that may have resulted in direct or indirect impacts to the Project site. The most recent fire burning in the vicinity of the Project occurred in June 2024 (Post Fire) and burned roughly 3 miles west of the Project site on the west side of Interstate-5. Other recent fires near the Project include the White Fire (July 2024), and the Gorman Fire (May 2007).

Limited wildfire history at the Project site is believed to be largely due to the site's terrain, managed fuels, barriers to wildfire spread, and quick wildfire detection and response. Wildfire occurrence offsite is more common, particularly south of the Project in the Liebre Mountains. However, wildland fires encroaching onto the Project from the south rarely enter the interior of the site due to the position of SR-138 and its utilization as a fire break. While wildfires occur more frequently in the Tehachapi Mountains, none of these fires have spread to the Project site. This is due to the geographical location of the Antelope Valley which acts

as a buffer between the steeper terrain and heavier fuels present in the Tehachapi Mountains.

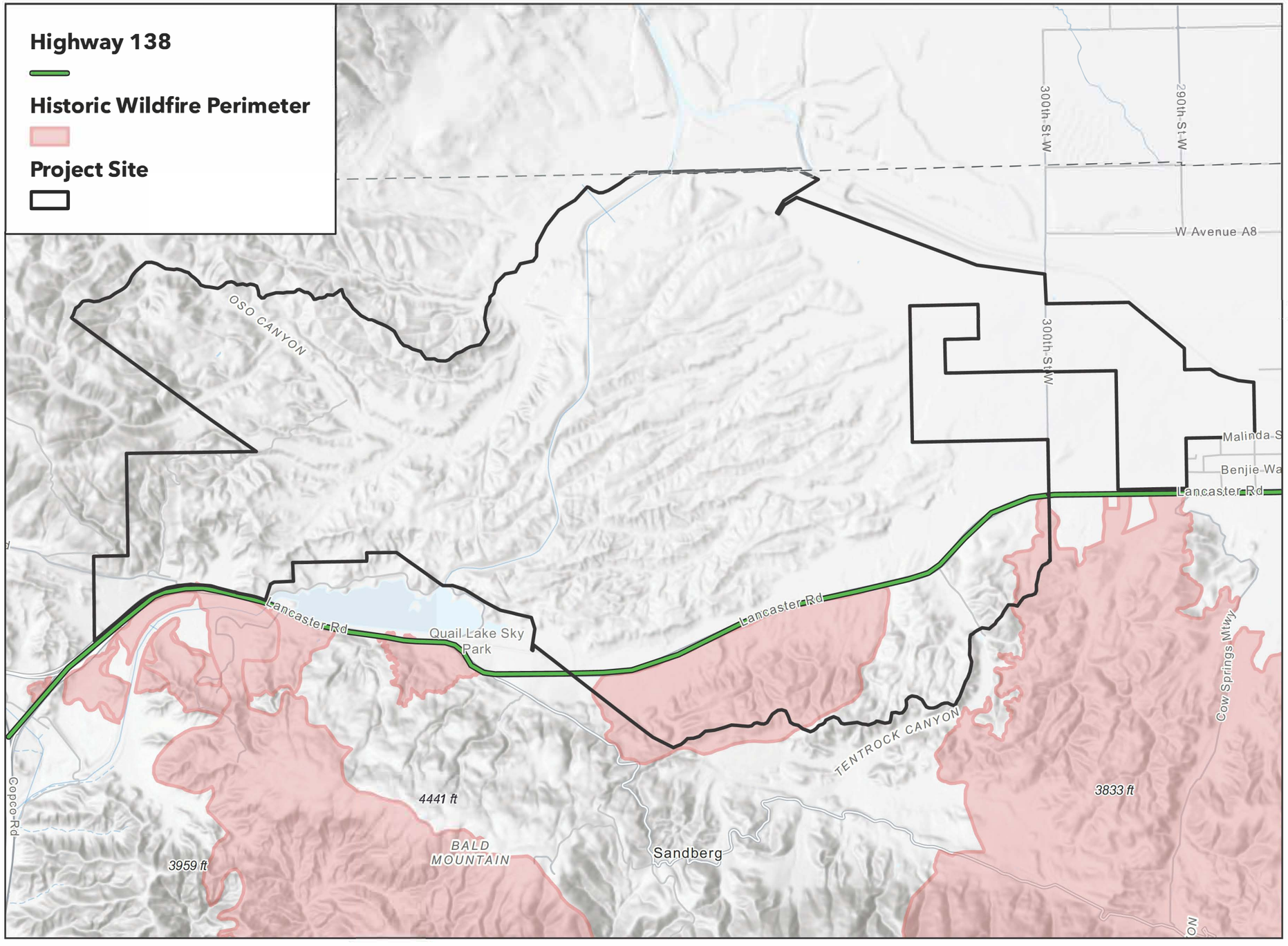
Based on fire history (Exhibit 3.2-5), and landscape burn probability analysis (See Section 3.2.7), wildland fire risk for the Project site is associated primarily with a Santa Ana wind-driven wildfire burning or spotting onto the site from the north of southeast, although a fire approaching from the northwest during more typical on-shore weather patterns is possible. From a regional perspective, wildfires are less likely to occur at the Project site compared to offsite regions to the north, west, and south.

Project Placement in Relation to Wildland Fire Ignition Points

According to the IRWIN database, there have been 196 reported wildland ignitions within 5 miles of the Project since 2014. For reference, there have been 1,553 ignitions within 5 miles of the City of Santa Clarita since 2014. As presented graphically in Exhibit 3.2-6, regional wildland fire ignition locations documented in the IRWIN database are strongly associated with major roadways including Interstate-5, SR-138, and Pine Canyon Road, with the majority of ignitions occurring along Interstate-5 to the southwest of the Project Site. The vast majority of these ignitions have been kept to less than 10 acres and extinguished quickly, as many of these fires are not recorded in the historic wildfire perimeter database (CAL FIRE, 2024). It should be noted that historic wildfire ignitions differ from historic wildfire perimeters. While ignitions refer to any vegetation fire no matter the size, wildfire perimeters are generally only recorded if greater than 10 acres.

To date, fire has played a limited role in shaping and maintaining the plant communities found on the Project site. As indicated in Exhibit 3.2-5, the majority of burns taking place on the Project site occur in the southern and eastern portion of the property, south of SR-138 adjacent to larger expanses of open space in the Liebre Mountains and the Angeles National Forest. As pictured, wildfire occurrences within the Project site and its direct vicinity are substantially smaller and more infrequent compared to the greater region. This is likely caused by the mild topography and lighter fuel loads present within the Project site. When wildfires do occur on the Project site, they have been contained to small acreages compared to fires occurring in other regions of Los Angeles County. While large fires have occurred to the south and east and have encroached towards the Project site (2004 Pine Fire, 1968 Liebre Fire), lighter fuel loads and moderate topography in the southern region of the Project site relative to offsite areas appear to have prevented these large fires from encroaching into the Project site. In addition, SR-138 and the California Aqueduct have served several times as a fuel break to prevent fires burning onto much of the Project site from the south. Exhibit 3.2-11 shows historical fires near the Project site that have been contained as a result of the fuel break created by SR-138 and the California Aqueduct. Only two fires have crossed SR-138 within the Project site, and both of these fires were kept to small acreages (265 and 320 acres, respectively).

Other than the southern portion of the property, only five documented fires have burned within the interior portion of the Project site north of SR-138, all of which were contained to small acreages (average fire size of 303 acres each). The lack of significant historical fire activity on the majority of the Project site is likely attributed in part to lighter fuel loads, mild topography, and existing fuel breaks (SR-138, California Aqueduct). Table 3.2-3 summarizes the fire history on and near the Project site. Moreover, fire spread patterns on the property would be significantly



Source: Dudek 2024

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Highway 138's Use as a Fuel Break

Exhibit 3.2-11

Centennial Supplemental Environmental Impact Report

N W E S

Map not to scale

PSOMAS

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interrupted once the Centennial Project site is built out because the Project's urban development would eliminate or separate what are presently continuous fuels across the Project site.

Project Placement in Relation to Evacuation Routes and First Responder Ingress and Egress

The Project is located adjacent to regional transportation networks (ex. Interstate-5 and SR-138) with multiple points of access. The Project would provide five points of access to SR-138, but fire impacts would be potentially significant without adequate emergency services. With implementation of MM-16-2 (LACoFD Developer Fee Program), MM-16-3 (new fire stations), MM-16-4 (Law Enforcement Facilities Mitigation Fee), all of which are required by the Project MMRP adopted upon certification of the 2019 EIR, the Project would have adequate emergency services to serve the site. The Project is within an acceptable distance when considering the three onsite fire stations (with an optional fourth if determined necessary by LACoFD) with fast response to all planned structures. In addition, the Project would provide an on-site Sherriff's substation. The Project provides new surface streets and connects to existing streets and is near major highway/freeway corridors, facilitating emergency vehicle ingress. Further, MM-3-7 from the 2019 EIR requires the preparation and LACoFD approval of an emergency response plan for each of the Project's tentative subdivision maps. The Project would meet all county response time requirements.

The Project provides for parking restrictions and an HOA to enforce parking restrictions to ensure that fire apparatus access roads are not obstructed by designated parking areas and where parking is prohibited, signage and/or curb marking would be provided. Further, per the Los Angeles County subdivision ordinance § 21.40.040 each tentative map must demonstrate that internal circulation system, site access, road dimensions, road connectivity, and other standards related to fire apparatus access are consistent with all applicable roadway and a fire code standard. All interior roads must comply with all fire apparatus access road standards, including requirement that all interior roads with a fire hydrant be constructed to a minimum unobstructed road width of 26 feet, exclusive of shoulders, all roadways that provide parking must provide a minimum clear width of not less than 34 feet for parking on one side and 42 feet for parking on both sides.

The Project's proximity to SR-138 offers several benefits in the case of a wildfire. As described above, SR-138 has previously acted as a fuel break to prevent fire from spreading onto the Project site. SR-138 would also be used as the primary evacuation route for Project occupants in the case of an evacuation and the primary access point to the Project site for first responders located outside of the Project Boundary. Depending on the directional spread of a wildfire and guidance from emergency services, SR-138 eastbound or westbound may be utilized. SR-138 westbound connects with Interstate-5 and is a major evacuation route in the region.

Water Supply and Wildfire Risk

Water supply and infrastructure to address firefighting within the Project site are relevant to evaluating wildfire risk for the Project. Without an adequate water supply and code compliant water delivery systems, Project fire impacts would be potentially significant. Water supplies for the Project were analyzed in the 2019 EIR. As described in the 2019 EIR, the Project would receive water supplies from a variety of sources including the Tejon Ranch Company Water Bank, an onsite water banking facility, groundwater, imported water, recycled water from the onsite wastewater treatment.

The Project site would be annexed into the Golden Valley Municipal Water District, which would provide water service to the Project site. A Project-specific Water Supply Assessment (WSA) compliant with Senate Bill 610 (Chapter 643, Statutes of 2001) was prepared for the Project and is included as Appendix 5.18-A to the 2019 EIR. The WSA confirms that the Project water supplies would meet water demand for the Project, including for domestic and firefighting needs. As indicated in the Wildfire Safety Plan (WSP) the Project would provide internal waterlines supplying sufficient fire flows and pressure to meet the demands for required on-site fire hydrants and interior fire sprinkler systems for all structures to meet LACoFD requirements. The Approved Project with Project Modifications would not result in a substantial increase in water demand compared to the 2019 Project. In addition, the Project includes multiple onsite surface water source locations for aerial firefighting resources including Quail Lake and the California Aqueduct. These secondary water resources provide ample and easily accessible water supply for aerial fire suppression which promotes quick extinguishment of fires burning onto or threatening the Project site.

Water would be provided via a fire code consistent delivery system including hydrants at County spacing requirements and fire flow meeting pressure and duration standards. The water supply for fire protection would be a looped public water system provided by the Local Water District and shall be designed and installed to their standards. The water delivery system would be designed to minimize damage and service interruptions as a result of seismic activity. A "Can and Will Serve" letter would be obtained from the water purveyor. If a private water system is utilized it must comply with NFPA standard 24.

As described in the County Fire Code, the water system shall have an adequate number of isolation valves and shall provide two sources of supply to the mains. Two sources of supply to the mains are necessary should one water source fail (earthquake) or be shut off, there needs to be a secondary source for supply to the mains.

The water supply to the fire sprinkler systems shall be designed to Water purveyor and Fire Department standards and the NFPA 13 standards, with design, coverage, and plans subject to Fire Department approval. Sprinkler systems in houses should have approved systems with a 4 head calc, or as otherwise required by the Fire Marshal. The final design criteria and sprinkler standard used (13-D, 13-R or 13) shall be subject to Fire Marshal approval. Accordingly, the Project would not have a significant fire-related impact due to inadequate water supplies or inadequate water delivery infrastructure.

Project Density and Wildfire Risk

Density influences how likely a fire is to start or spread, and how likely it is that the development and its occupants would be in danger when a fire starts. Thus, urban and suburban development should be sufficiently dense so as to hinder fire spread by eliminating or significantly breaking up wildland vegetation. This type of development (so-called "interface development") minimizes the amount of interface between homes and wildland vegetation (Syphard et al., 2012). In contrast, lower density developments with wildland vegetation interspersed between structures (so-called "intermix development") are more conducive to fire spread within developments and structure loss and should be avoided in fire prone areas.

Research indicates that the type of high density, clustered planned developments, like the Project, are not associated with increased wildfire risk. As shown in Exhibits 1 through 3 housing layouts directly influences susceptibility to fire due to the amount of exposure of the community perimeter to the wildlands. Developments in wildland areas generally resembles either wildland urban interface or intermix as defined below.

Wildland Urban Interface:

- The Wildland-Urban Interface refers to areas where urban or suburban development directly borders or is in close proximity to undeveloped wildlands or natural landscapes. Interface areas demonstrate clear boundaries between development areas and the surrounding wildlands.

Wildland Urban Intermix:

- The Wildland-Urban Intermix refers to areas where wildland and urban or suburban development are intermixed, meaning that urban and wildland areas are interspersed rather than having a clear boundary separating development areas from surrounding wildlands. Wildfires have a high likelihood of spreading through intermix areas due to wildfire receptive vegetation dispersed throughout development areas.

The housing layout of the Centennial master planned community development includes one continuous wildland-urban interface (the community perimeter) with the wildlands. This is unlike rural and semi-rural intermix development which creates more structural exposure to wildlands, with less frequent or no ongoing landscape maintenance. The more spread out the development, the more difficult it is for fire resources to protect homes. Intermix development is characterized by housing situated amongst unmaintained vegetative fuels, whereas the Approved Project would convert all vegetative fuels within the Project development footprint and provide a wide, managed fuel modification zone (FMZ) that separates homes from unmaintained fuel thereby creating an interface condition that facilitates the defense of onsite structures and reduces the risk of onsite fires migrating to offsite wildland areas. Research explains that "[t]he WUI, where housing spacing is low to intermediate, is an apparent influence in most ignition maps," further enforcing the

conclusion that more rural/large parcel housing poses a higher ignition risk than master planned communities with more urbanized landscapes. (Syphard and Keeley, 2015)

One study suggests that interface developments have experienced a greater proportion of structure losses from wildfire as compared to intermix developments (Kramer et al. 2019). This research examines wildfire losses from 1985-2013, as well as the 2017 Tubbs Fire. The research determined that, from 1985 to 2013, the wildfire destruction rate was higher in the wildland-urban interface compared to wildland-urban intermix, with destruction rates at 15.6 and 11.6 percent, respectively. The same was observed during the 2017 Tubbs Fire, with a 72.4 percent destruction rate in the interface, and a 61.5 percent destruction rate in the intermix. This study is an outlier, however, and fails to consider other factors influencing structure loss including building construction that complies with modern building standards. Unlike the communities at issue in the Kramer study, which were generally constructed prior to Building Code updates specifically tailored to development in fire prone areas, modern master-planned communities built to modern ignition resistant standards provide passive fire protection that is highly successful at minimizing damage and loss of structures (CBIA, 2022). The State Fire Marshal's statistics demonstrate that homes built to current California Building Code Chapter 7A standards effectively reduce fire risks to homes built in the wildland urban interface (WUI) and fire hazard severity zones (CBIA, 2022). When those homes are built as part of a properly planned and mitigated master-planned community, like the Project, the risk of significant structural loss is extremely low (FEMA, 2023). As evidenced in the OSFM Property Loss Data, no master-planned community built after the adoption of California Building Code Chapter 7A has suffered extensive structural losses to wildfire. The available evidence demonstrates that California's wildland fire structure losses are associated with poorly planned residential developments and older existing home stock that was built before modern Chapter 7A standards went into effect. Extensive analysis of State Fire Marshal data regarding recent impacts from California's mega-fires has been conducted and the data demonstrates that over 98.5% of structural damage or loss occurs with homes built before modern Chapter 7A standards. Of those new homes that were damaged, most involved isolated new construction surrounded by existing, high-risk homes (e.g., new homes lost in the Camp fire) located in high-risk areas. These are homes commonly built in the WUI that are overgrown by many drought-ridden fuel types (brush, shrubs, trees, etc.) that are ready to burn rapidly. Many have narrow roads, inadequate fire access and evacuation routes, and inadequate water supplies. In stark contrast, new master-planned communities in the WUI must go through a strenuous environmental review under the California Environmental Quality Act and are typically planned, approved and implemented with numerous fire-safety features and measures. The Project would be built to be an ignition resistant community designed to include professionally managed and maintained fire protection components, modern fire code compliant safety features and specific measures provided where ignitions are most likely to occur (such as roadways). Regardless of the Fire Hazard Severity Zone classification, the Project would comply with Chapter 7A of the building code in addition to Title 14 of the California Code of Regulations.

Firefighters may have difficulty accessing disconnected and remote developments and, without timely emergency services, Project fire impacts are potentially significant. The

Project, however, would provide at least three onsite fire stations (four, if required by LACoFD), as required by 2019 EIR Mitigation Measures MM 16-3. These onsite fire stations would provide rapid response to the entirety of the Project site by firefighters in compliance with County response standards. In addition, the Project site is located near major roadways such as Interstate-5 and SR-138 which provide efficient access for offsite emergency responders. None of the Proposed Modifications would adversely affect firefighter access to the Project site and impacts related to fire service access would be less than significant with implementation of MM 16-3.

FIGURE 1

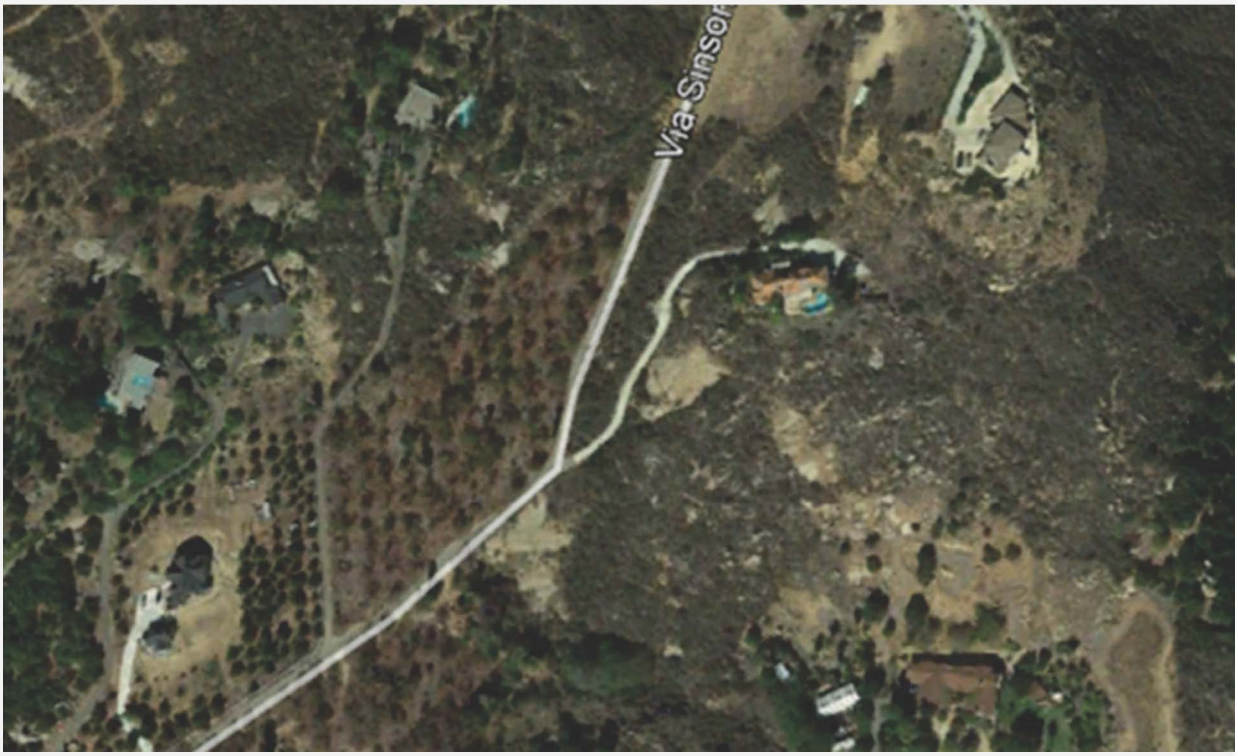
Example wildland urban interface master planned community that is ignition resistant and excludes readily ignitable vegetative fuels throughout and provides a perimeter fuel modification zone. This type of new development requires fewer fire resources to defend and can minimize the likelihood of on-site fires spreading off-site.

FIGURE 2

Example of semi-rural, wildland-urban intermix development. Homes are located on larger properties and include varying levels of ignition resistance and landscape / fuel modification provision and maintenance. This type of development results in a higher wildland exposure level for all homes and does not provide the same buffers from wildfire encroaching onto the site or starting at a structure and moving into the wildlands as a master planned community.

FIGURE 3

Example of rural/large parcel development where homes are intermixed amongst wildland fuels, are of varying ages, and include varying levels of fuel modification zone setbacks. Homes are exposed on most or all sides by flammable vegetation and properties rely solely on owners for maintenance, are often far distances from the nearest fire station, and have minimal buffer from on-site fire spreading to wildlands.



In addition to ignition resistant construction standards and clustered design, permitter fuel modification zones (FMZs) have been proven to protect communities from encroaching wildfires, even during extreme weather conditions. During the 2020 Silverado Fire occurring in Orange County northeast of Irvine, Santa Ana winds gusting as high as 80 miles per hour spread the fire rapidly towards the Orchard Hills community. Built in 2018, this community was designed with 170-200-foot-wide permitter FMZs surrounding structures. As presented in Exhibit 4, FMZs buffered structures from flames by moderating fire behavior due to irrigated landscape conditions. When paired with ignition resistant building construction to mitigate risks from airborne embers, permitter FMZs greatly protect structures from wildfire exposure, while also providing conditions favorable to safe and effective fire suppression.

The Project proposes a clustered, interface design and complies with County Fire Code requirements found to protect communities within fire hazard severity zones. The 2019 EIR included MM-3-9 which includes the preparation of fuel modification plans for the Project

site. The Project would incorporate a 100-foot-to-200-foot fuel modification zones (FMZs) around the entire Project perimeter, which would provide defensible space and reduce fire intensity if ignition were to occur. The Project would provide FMZ to reduce the potential for wildfire encroachment. All of the Proposed Modifications would occur within the required FMZ and would not alter overall Project design in manner that would have any appreciable impact on fire risks.

FIGURE 4

Effectiveness of interface-clustered development design and perimeter FMZs surrounding the Orchard Hills Community during the 2020 Silverado Fire.

Building Standards and Fire Risk

Fire hardening structures decreases the likelihood of structure ignition. In WUI areas, homes can be considered fuel as well as an ignition point for wildfires; therefore, it is important to reduce the likelihood of building ignition occurring (Zhou, 2013). Research demonstrates that structural characteristics, especially roofing, play a significant role in reducing a structure's vulnerability to fire and the likelihood of burning (Gorte, 2011; Knapp et al., 2021; Kolden & Henson, 2019; Manzello et al., 2011; Syphard et al., 2017; Zhou, 2013). Further,

reducing a structure's likelihood of ignition reduces the risk for the individual homeowners and the risk associated with fire spreading to other homes or wildland areas (Mockrin et al., 2020).

The Project's proposed structures would be built utilizing the most current construction methods designed to reduce wildfire exposure and reduce the likelihood for structure fires to spread into offsite areas. Construction methods intended to reduce wildfire exposure would comply with the wildfire protection and ignition resistant building construction requirements contained in the Los Angeles County Building Code and the 2022 CBC including the following:

- California Building Code, Chapter 7A
- Los Angeles County Building Code, Chapter 7A
- Los Angeles County Residential Code, Section R327
- Los Angeles County Referenced Standards Code, Chapter 12-7A

Each of the critical fire hardening building features summarized below has been addressed within Chapter 7A to minimize the potential for structural ignition from wildfire exposure and to reduce the likelihood of structural fires spreading into offsite areas:

- Roofing Assemblies
- Vents and Openings
- Exterior Wall Covering
- Open Roof Eaves
- Closed Roof Eaves and Soffits
- Floor Projections and Underfloor Protection
- Underfloor Appendices
- Windows, Skylights, and Doors
- Exterior Doors
- Decking
- Accessory Structures

When communities incorporate the regulatory fire hardening requirements summarized above, they offer a safer landscape that is resistant to WUI fire disasters. For example, in the unincorporated area of Montecito designated as VHFHSZ that had experienced wildfire-related home loss, the Montecito Fire Protection District implemented place-based fire hardening strategies similar to those now required by Chapter 7A two decades prior to the Thomas Fire in 2017, These strategies focused on recurring structural ignition potential, fire-resistant materials, structural modifications, increasing defensible space, fire scaping, and developing a fire protection code. As a result, when the Thomas Fire, during Sundowner winds, spread to Montecito the area experienced minimal damage and was largely passed

over compared to the surrounding areas (Kolden & Henson, 2019) . By having mitigation not be isolated to wildland interface areas but throughout the community, Montecito was able to effectively protect not just the WUI areas, but the entire community.

The 2007 Witch Creek fire was one of the most destructive fires in California's history and destroyed thousands of homes in San Diego County. However, after the 1990 Paint Fire in Santa Barbara and the 1991 Oakland Hills Tunnel Fire, five communities in San Diego County implemented measures to adapt to a very high fire hazard environment, such as implementing home hardening measures similar to Chapter 7A requirements and vegetation restrictions; all of which were maintained and enforced by the HOA (Mutch et al., 2011). As a result, when the Witch Creek fire spread to Rancho Santa Fe no homes were lost in the five communities that adopted this fire-hardening approach, while older communities that did not implement fire-hardening measures were heavily impacted (Mutch et al., 2011).

Similarly, the 2008 Freeway Complex Fire near Yorba Linda tested the effects of enhanced building construction. In 1996, the City of Yorba Linda adopted construction requirements similar to those currently reflected in Chapter 7A of the California Building Code. Notably, even though structures were exposed to severe fire behavior and airborne ember storms, no homes built after 1996 were lost during the fire. As presented below in Exhibit 5, the Casino Ridge community built with fire resistant materials and methods and maintained FMZs was able to withstand impacts of the wildfire and experienced no structure losses. In fact, firefighters were able to focus protection efforts on other, more at-risk communities, knowing Casino Ridge was built to withstand wildfire with little to no fire protection efforts.

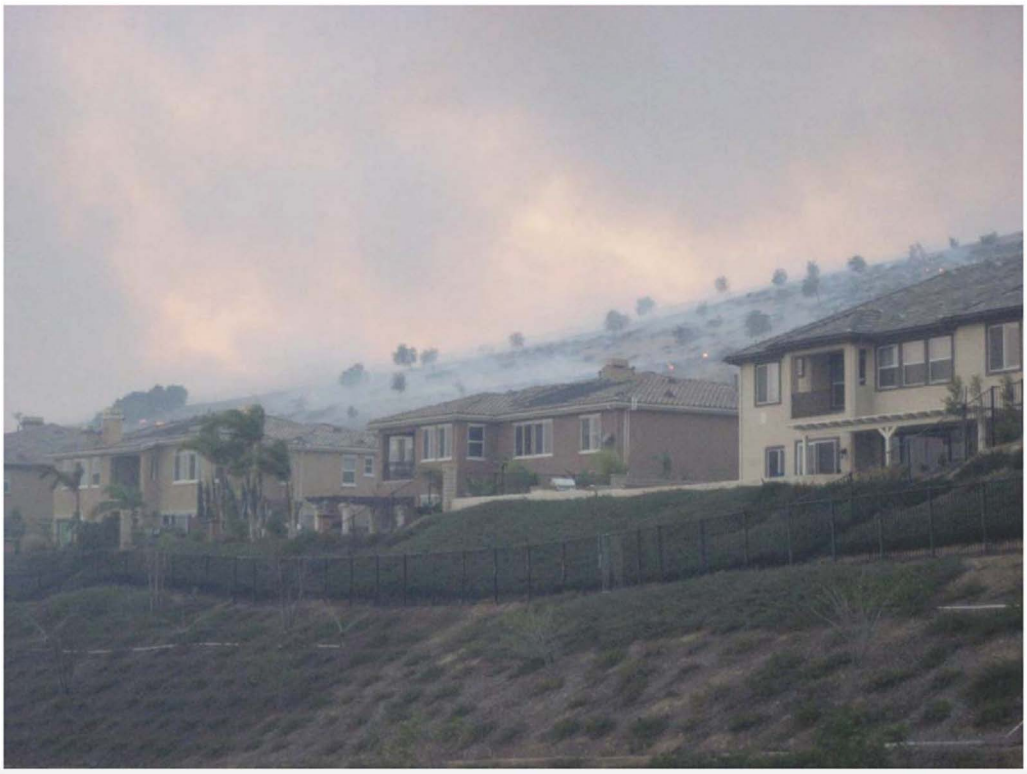
As described above, the Project is designed to not only be hardened against fire but designed to prevent fires from occurring and quickly suppressing them when they do occur. The Project would include a multi-scaled approach to fire protection through wildfire education, ignition prevention, fuels management, increased response capacity, and ignition-resistant construction. To further fire harden the Project, the Centennial Specific Plan and the County's subdivision ordinance mandate that all proposed electric transmission lines be undergrounded, thereby eliminating the potential for fires that may be caused by electrical transmission line blowdowns in high wind events or by other line failures or anomalies.

FIGURE 5

Ranch Santa Fe, 2007 which fire. Structural hardening measures similar to those required in Chapter 7A of the CBC are believed to have prevented extensive structure losses in this community.

FIGURE 6

Casino Ridge Community during the 2008 Freeway Complex Fire highlighting ignition resistant construction and permitter Fuel Modification Zones. No structures were lost during the fire.



Fire Protection Measures Implement at Each Stage of Project Development

As described above, the Project would be developed in phases on a subdivision map basis, each of which would include fire hardening measures appropriate for each such Project stage, as follows.

Tentative Map Stage

- During the preparation, review, and approval of each tentative map stage for the Project, the emergency response plan (MM 3-7), Traffic Control Plan (MM 3-8), Fuel Modification (MM 3-9), and fire-resistant landscaping plan would be updated to reflect the specific needs for each tentative map.
- 2019 EIR MM 3-7 requires the Project to prepare an Emergency Response Plan (ERP), which must be updated as needed for each Tentative Map and submitted to the County (California Department of Forestry and Fire; County Fire Department) for

review and approval. The ERP will utilize existing information from Los Angeles County Office of Emergency Management, coordinate with County emergency planners, and provide site specific procedures for various emergency situations including wildfire. As required by the Project Development Agreement, the Property Owners shall require future residential and commercial property owners' associations to develop and implement an emergency preparation and response plan, including shelter-in-place and evacuation plans as well as first aid and emergency electric power supplies.

- Each tentative map must demonstrate that utilities would be undergrounded, and the locations of fire stations identified.
- During the final map stage, the fuel modification plan would be approved by the County.

Building Permit Stage

- During the issuance of building permits, the LACoFD will have primary enforcement jurisdiction over the Project with respect to matters of Fire Code compliance, while the County's Department of Regional Planning is responsible for the overall enforcement of the Specific Plan. The applicant must submit site improvement plans to County Fire prior to the issuance of the building permits. Prior to bringing lumber or combustible materials related to residential and nonresidential building construction onto the Project Site, site improvements within the active development area must be in place, including utilities, operable fire hydrants, and an approved, temporary roadway surface and fuel modification zones shall be established. Combustible materials may be utilized onsite prior to stated site improvements as needed for providing the improvements (e.g., wood forms for cast-in-place concrete) or for infrastructure constriction prior to utilities being installed (e.g. operable fire hydrants). County Fire will review site fire safety conditions prior to the commencement of building activities.

Construction Stage

- A designated Site Safety Officer (SSO) or Site Fire Safety Coordinator will manage the Project's Construction Fire Prevention Plan (CFPP) and shall maintain all records pertaining to the plan. The CFPP must be submitted to the Couny for review and approval prior to the issuance of the grading permit. The CFPP designates fire safety measures to reduce the possibility of fires during construction activities, including fire watch during hot works and heavy machinery activities (e.g., welding), spark arresters on all equipment, water supply via hose lines attached to hydrants, or a water tender pursuant to County Fire requirements, red flag period restrictions, and mandatory on-site fire resources as detailed in the CFPP. All construction employees would be provided fire prevention training and the on-site safety officer must maintain documentation of training. Training shall consist of the Project WSP requirements, review of Occupation Safety and Health Administration (OSHA) Fire Protection and Prevention, proper response and notification of a fire, and the use of fire extinguishing equipment. County Fire shall review site fire safety conditions prior

to the commencement of construction activities. The site safety officer shall be responsible for the implementation of the CFPP. Other responsibilities of the on-site safety officer include the following:

- Developing and administering the fire prevention and safety training program.
- Ensuring that fire control equipment and systems are properly maintained and in good working condition.
- Monitoring combustibles on the site and managing where they are stored.
- Conducting fire safety surveys.
- Posting fire rules on the project bulletin board at the contractor's field office and areas visible to employees.
- Stopping project work activities that pose a fire hazard or are not in compliance with this CFPP.
- Reporting all fires ignited on the site, whether structural, vegetation, electrical, or other to LACoFD.

Wildfire Modeling and Wildfire Risk

To understand how the Approved Project with Proposed Modifications may exacerbate the risk of wildfire, fire modeling was conducted to quantify pre- and post-development wildfire risks to the extent feasible. As explained below, these models account for various siting and design elements, as well as a variety of different fire scenarios. Wildfire modeling for the Project was conducted using industry standard fire behavior models including Behave Plus to estimate fire intensity, flame lengths, and spread rates. Modeled scenarios included fire behavior at the Project Site during average and extreme weather conditions. Landscape Burn Probability and Fire Progression modeling was also conducted using the Interagency Fuel Treatment Decision Support System (IFTDSS).

Flame Length, Fireline Intensity, and Rate of Spread Modeling

Field data collection and fire behavior modeling was completed by Dudek to document the predicted type and intensity of fire that would be expected on the Project site given characteristic site features such as topography, vegetation, and weather. The fire behavior modeling is conducted based on the existing conditions. Understanding the anticipated fire behavior on the site pre-construction provides insight into how to best address the risk that the open space areas that would remain in post-development conditions present. Naturally, the areas that are converted to urban landscapes would result in a reduced fire risk and reduced fire intensity. Areas subject to hardscape and irrigated landscaping post-development can be expected to have flame lengths and intensity well below areas on the periphery of the community, the wildland urban interface.

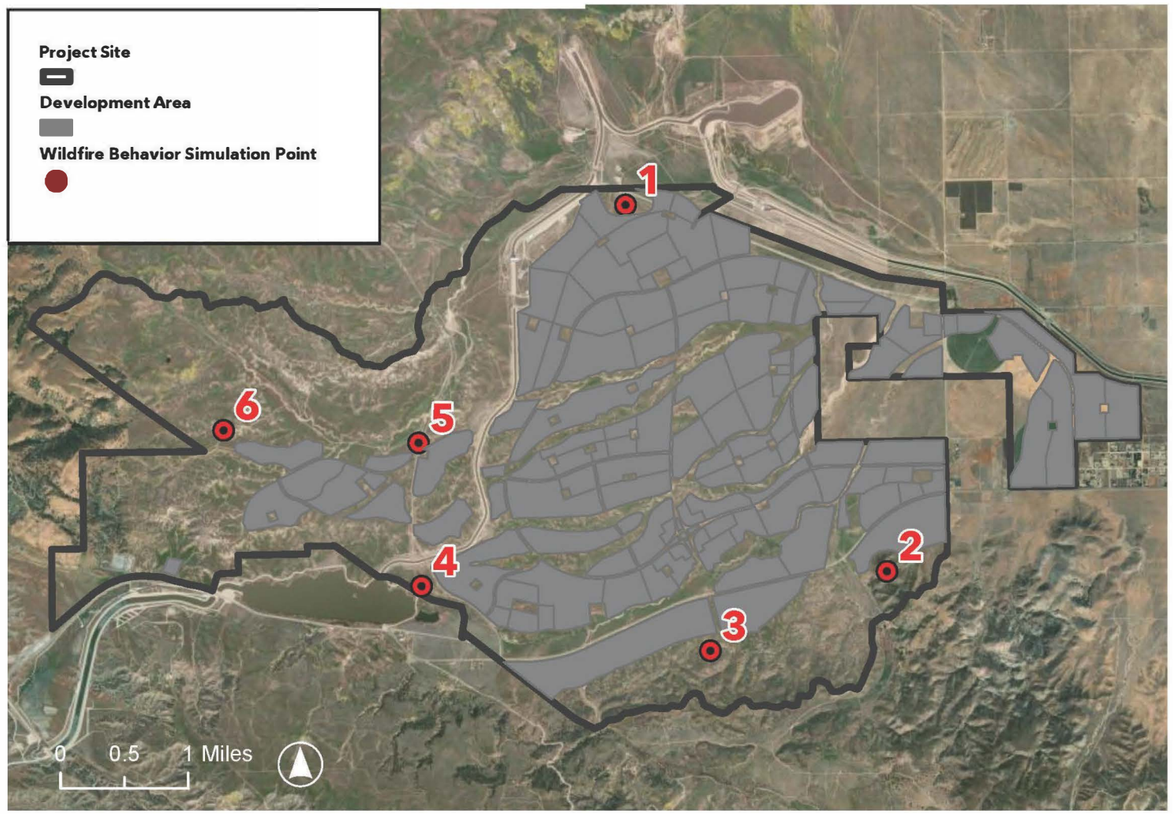
An analysis utilizing the BehavePlus software package was conducted to evaluate pre- and post-project flame lengths, intensities, and spread rates within the Project's development

edges. These fire scenarios incorporated observed fuel types representing the dominant vegetation and slope gradients in the Project's planned Fuel Modification Zones. Modeling also represented the 97th percentile weather and wind conditions which is considered an industry standard "worst-case" weather condition to modeling wildfire behavior during extreme weather conditions (IFTDSS, 2024). Modeling scenario locations were selected to better understand different fire behavior that may be experienced on or adjacent to the site. Identification of fire scenarios' locations is presented graphically in Exhibit 3.2-12.

Baseline vegetation types (Table 3.2-2), which were derived from the field assessment for the Project Site, were classified into a fuel model. Fuel models are simply tools to help fire experts realistically estimate fire behavior for a vegetation type. Fuel models are selected by their vegetation type, fuel stratum most likely to carry the fire, and depth and compactness of the fuels. Fire behavior modeling was conducted for vegetative types that surround the proposed development. Fuel models were selected from *Standard Fire Behavior Fuel Models: A Comprehensive Set for Use with Rothermel's Surface Fire Spread Model* (Scott and Burgan 2005). For post-development conditions, fuel models were assigned to illustrate post-project fire behavior changes in the Project's planned perimeter Fuel Modification Zones. As depicted in Exhibit 3.2-13, the vast majority of development areas are located adjacent to low hazard grass fuels.

Outputs

Flame length, fireline intensity, and fire spread rates are the relevant outputs of wildfire modeling. Flame length is the measure of the length of the flame of a spreading surface fire within the flaming front. Flame length is measured from midway in the active flaming combustion zone to the average tip of the flames (Andrews, Bevins, and Seli 2004). Understanding modeled flame length is extremely important to fireline personnel in evaluating fireline intensity and is therefore, an important fire variable. Fireline intensity is a measure of heat output from the flaming front. Fireline intensity affects the potential for a surface fire (i.e., a fire that burns surface fuels) to transition to a crown fire (i.e., a fire that burns aerial fuels). Fire spread rate represents the speed at which the fire progresses through surface fuels and is another important variable in initial attack and fire suppression efforts. The information in Table 3.2-9 presents an interpretation of these fire behavior variables as related to fire suppression efforts.



Model Input Variables

Model Variable	50th Percentile Weather	95th Percentile Weather (w/ Max. Wind)
1 h fuel moisture	5%	2%
10 h fuel moisture	6%	3%
100 h fuel moisture	12%	6%
Live herbaceous moisture	60%	30%
Live woody moisture	70%	60%
20 ft wind speed (mph)	7 mph	47 mph (maximum observed Fall wind speed)
Wind direction	Up-slope	Up-slope
Slope steepness	Variable by location	Variable by location

Fuel Model Assignment	Vegetation Description	Location	Fuel Bed Depth (Feet)
8	Zone A – irrigated, landscapes	Perimeter fuel modification zone	<3.0 ft.
Gr1	Zone B/Zone C: grasses cut to 6 inches in height	Perimeter fuel modification zone	<0.5 ft.
GR2	Non-native grasslands	Hillsides and open spaces surrounding the sites	<1.0 ft.
Sh1	Zone B: 50% thinning shrubs	Perimeter fuel modification zone	
GS2	Moderate Load, Dry climate grass/shrub	Hillsides and open spaces surrounding the sites	<1.5 ft.
TL6	Oak woodland lead leaf litter	Select hillsides and open spaces surrounding the sites	<0.3 ft.

BehavePlus Modeling Results - Pre-Project Baseline Conditions

Fire Scenarios	Flame Length (feet)	Fireline Intensity (Btu¹/feet/second)	Spread Rate (mph²)
Scenario 1: Non-Native Grasslands and, 5-10% slope, 97th Percentile Weather			
Fuel Model GR2	14	1,000 +	4.2
Scenario 2: Moderate Load Grass-shrub vegetation, 5-10% slope, 97th Percentile Weather			
Fuel Model GS2	24	1,000 +	6.6
Scenario 3: Oak woodland vegetation, 5-10% slope, 97th Percentile Weather			
Fuel Model TL6	12	500-1,000	1.5
Fuel Model GR2	14	1,000 +	4.2
Scenario 4: Non-Native Grasslands and, 5-10% slope, 50th Percentile Weather			
Fuel Model GR2	6	>0-500	0.7
Scenario 5: Moderate Load Grass-shrub vegetation, 5-10% slope, 50th Percentile Weather			
Fuel Model GS2	7	>0-500	0.6
Scenario 6: Oak woodland vegetation, 5-10% slope, 50th Percentile Weather			
Fuel Model TL6	4	<100	0.1
Fuel Model GR2	6	>0-500	0.7

BehavePlus Modeling Results - Post-Project Conditions

Fire Scenarios	Flame Length (feet)	Fireline Intensity (Btu¹/feet/second)	Spread Rate (mph²)
Scenario 1: Fuel Modification Zones, Non-Native Grasslands and, 5-10% slope, 97th Percentile Weather			
Fuel Model 8 (Zone B)	3	<100	0.1
Fuel Model GR1 (Zone C)	3	<100	0.5
Scenario 2: Fuel Modification Zones, Moderate Load Grass-shrub vegetation, 5-10% slope, 97th Percentile Weather			
Fuel Model 8 (Zone B)	3	<100	0.1
Fuel Model SH1 (Zone C)	9	>500-1000	1.2
Scenario 3: Fuel Modification Zones, Oak woodland vegetation, 5-10% slope, 97th Percentile Weather			
Fuel Model 8 (Zone B)	3	<100	0.1
Fuel Model GR1 (Zone C)	3	<100	0.5
Scenario 4: Fuel Modification Zones, Non-Native Grasslands and, 5-10% slope, 50th Percentile Weather			
Fuel Model 8 (Zone B)	1	<100	<0.1
Fuel Model GR1 (Zone C)	2	<100	0.2
Scenario 5: Fuel Modification Zones, Moderate Load Grass-shrub vegetation, 5-10% slope, 50th Percentile Weather			
Fuel Model 8 (Zone B)	1	<100	<0.1
Fuel Model SH1 (Zone C)	1	<100	<0.1
Scenario 6: Fuel Modification Zones, Oak woodland vegetation, 5-10% slope, 50th Percentile Weather			
Fuel Model 8 (Zone B)	1	<100	<0.1
Fuel Model GR1 (Zone C)	2	<100	0.2

Source: Dudek 2023

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Behave Plus Fire Behavior Analysis

Exhibit 3.2-12

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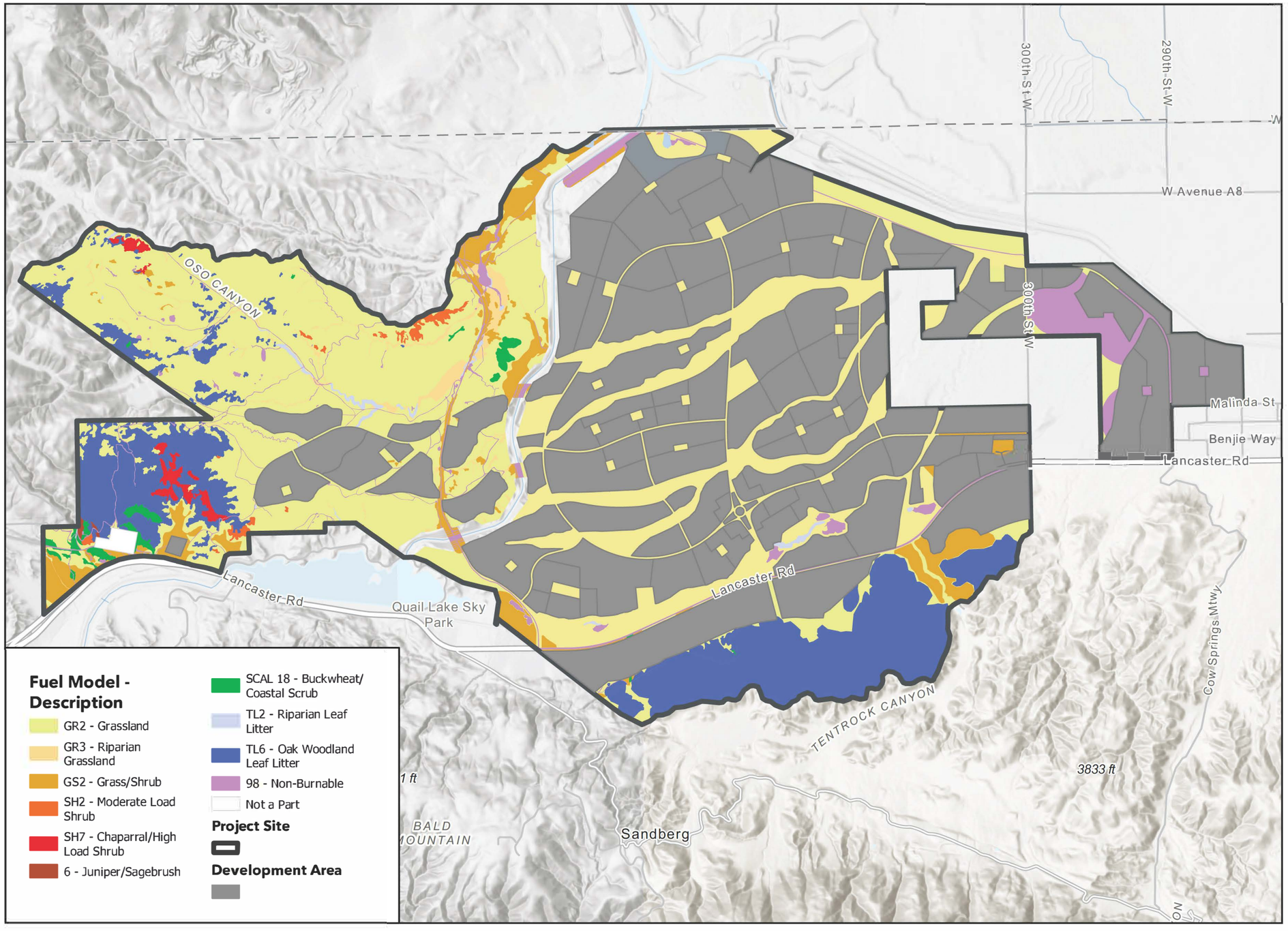

Source: Dudek 2023

Vegetation – Fuel Models (Post-Development)

Exhibit 3.2-13

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TABLE 3.2-9
FIRE SUPPRESSION INTERPRETATION

Flame Length (feet)	Fireline Intensity (Btu/ft/s)	Interpretations
Under 4	Under 100	Fires can generally be attacked at the head or flanks by persons using hand tools. Hand line should hold the fire.
4 to 8	100 to 500	Fires are too intense for direct attack on the head by persons using hand tools. Hand line cannot be relied on to hold the fire. Equipment such as dozers, pumpers, and retardant aircraft can be effective.
8 to 11	500 to 1000	Fires may present serious control problems—torching out, crowning, and spotting. Control efforts at the fire head would probably be ineffective.
Over 11	Over 1000	Crowning, spotting, and major fire runs are probable. Control efforts at head of fire are ineffective.
Source: BehavePlus 3.0.2 fire behavior modeling program (Andrews, Bevins, and Seli 2004)		

The results of baseline fire behavior modeling analysis are presented in Table 3.2-10 for pre-project conditions and Table 3.2-11 for post-project conditions. Post-project conditions include fuel model characteristics to represent the reduced fuels, high plant moisture, and engineered landscapes that result in reduced flame lengths, spread rates, and fire intensity.

TABLE 3.2-10
BEHAVEPLUS MODELING RESULTS – PRE-PROJECT BASELINE CONDITIONS FOR THE PROJECT

Fire Scenarios	Flame Length (feet)	Fireline Intensity (Btu[1]/feet/second)	Spread Rate (mph[2])
Scenario 1: Non-Native Grasslands and, 5-10% slope, 97th Percentile Weather			
Fuel Model GR2	14	1,000 +	4.2
Scenario 2: Moderate Load Grass-shrub vegetation, 5-10% slope, 97th Percentile Weather			
Fuel Model GS2	24	1,000 +	6.6
Scenario 3: Oak woodland vegetation, 5-10% slope, 97th Percentile Weather			
Fuel Model TL6	12	500-1,000	1.5
Fuel Model GR2	14	1,000 +	4.2
Scenario 4: Non-Native Grasslands and, 5-10% slope, 50th Percentile Weather			
Fuel Model GR2	6	>0-500	0.7
Scenario 5: Moderate Load Grass-shrub vegetation, 5-10% slope, 50th Percentile Weather			
Fuel Model GS2	7	>0-500	0.6
Scenario 6: Oak woodland vegetation, 5-10% slope, 50th Percentile Weather			
Fuel Model TL6	4	<100	0.1
Fuel Model GR2	6	>0-500	0.7

TABLE 3.2-11
BEHAVEPLUS MODELING RESULTS – POST-PROJECT BASELINE CONDITIONS FOR THE PROJECT

Fire Scenarios	Flame Length (feet)	Fireline Intensity (Btu[1]/feet/second)	Spread Rate (mph[2])
Scenario 1: Fuel Modification Zones, Non-Native Grasslands and, 5-10% slope, 97th Percentile Weather			
Fuel Model 8 (Zone B)	3	<100	0.1
Fuel Model GR1 (Zone C)	3	<100	0.5
Scenario 2: Fuel Modification Zones, Moderate Load Grass-shrub vegetation, 5-10% slope, 97th Percentile Weather			
Fuel Model 8 (Zone B)	3	<100	0.1
Fuel Model SH1 (Zone C)	9	>500-1000	1.2
Scenario 3: Fuel Modification Zones, Oak woodland vegetation, 5-10% slope, 97th Percentile Weather			
Fuel Model 8 (Zone B)	3	<100	0.1
Fuel Model GR1 (Zone C)	3	<100	0.5
Scenario 4: Fuel Modification Zones, Non-Native Grasslands and, 5-10% slope, 50th Percentile Weather			
Fuel Model 8	1	<100	<0.1
Fuel Model GR1	2	<100	0.2
Scenario 5: Fuel Modification Zones, Moderate Load Grass-shrub vegetation, 5-10% slope, 50th Percentile Weather			
Fuel Model 8	1	<100	<0.1
Fuel Model SH1	1	<100	<0.1
Scenario 6: Fuel Modification Zones, Oak woodland vegetation, 5-10% slope, 50th Percentile Weather			
Fuel Model 8	1	<100	<0.1
Fuel Model GR1	2	<100	0.2

Notes (for Tables 3.2-10 and 3.2-11)
1 Btu = British thermal unit(s)
2 mph = miles per hour

Modeled Wildfire Behavior Summary

Pre-Project Baseline Conditions

Given the climatic, vegetation, and topographic characteristics along with the fire history and fire behavior modeling results discussed in the WSP, the Project site was determined to be potentially vulnerable to wildfire starting in, burning onto, or spotting onto the site. Based on this information, the anticipated Project-related human population growth and corresponding increase in potential ignition sources, and the fire history of the area, it is expected that wildfires may occur on this site in the future, although over half of the currently

available fuels would be converted to urban, irrigated landscapes under both Approved Project and Approved Project plus Proposed Modifications conditions, representing a reduction in the potential ignition and spread of wildfire.

Under extreme fall weather conditions (97th percentile fuel moistures and maximum wind speeds of 47 mph), fire can move rapidly through the site's fuels. The most common type of fire anticipated in the vicinity of the Project site is a fire burning onto the Project site from the south (e.g., originating along SR-138), or one approaching the Project site from I-5. Worst-case flame lengths near planned development areas were calculated at approximately 24 feet in grass-shrub vegetation types. Spread rates on site may exceed 6 mph in dry flashy fuels (grasses and scrub) under extreme weather and slope conditions. Finally, under extreme weather and wind conditions, fireline intensity values may exceed 1,000 Btu/feet/second limiting the options for fire response personnel and emphasizing the importance of fuel modification and defensible space for the planned community.

Post-Development Conditions

As presented in Table 3.2-11, Dudek conducted modeling of the Project Site for post-development conditions with FMZs in place. Fuel modification includes the establishment of irrigated and thinned zones on the periphery of the Project's planned development areas. For modeling the post-FMZ treatment condition, fuel model assignments were re-classified for the FMZ Zone A (Fuel Model 8) and FMZ Zone B (50% thinning zones – Fuel Model GR1, Fuel Model Sh1). The FMZ areas experience a significant reduction in flame length and intensity. The maximum 20-foot (Annual Grassland and Grass-shrub Fuels) and 11-foot (Oak woodland) tall flames predicted during pre-treatment modeling during extreme weather conditions are reduced to less than 11 feet tall at the outer edges and less than 4 feet in the near the structures of the development due to the higher live and dead fuel moisture contents. While not presented, the fire intensity and flame lengths in untreated, open space areas beyond the permitter FMZs would remain the same.

The models confirm that the Project's FMZ buffers are sufficient to slow wildfire spread and keep it from impacting the site. FMZs thereby provide a dual benefit of buffering communities and structures from encroaching wildfires while separating the new community and structures (and potential introduction of new ignition sources associated with the new community) from surrounding open space, fuel sources, or habitat areas (Bhandary and Muller 2009; Braziunas et al. 2021; Cochrane et al. 2012; Fox et al. 2018). Research has also indicated that the likelihood of ignitions occurring in a given location is significantly influenced by the existing vegetation/fuel available (Elia et al. 2019). Likewise, neighboring developed areas and their provided protections required by LACoFD perform a similar function during wildfires in the Project area.

Modeling Results When Including Ongoing Livestock Grazing

The Project, along with the larger Tejon Ranch, benefits from reduced fire ignitions and fire behavior resulting from the ongoing Tejon Ranch agricultural and grazing activities. Specifically, the livestock grazing program utilizes practices implemented on the greater

Ranch over and continues these practices as part of the holistic land management approach and managing wildfire risk simultaneously.

FIGURE 7

Photograph taken at the Project Site showing short and sparse grassland fuels which have been managed by historical and ongoing cattle grazing (Fuel Model GR1). Note that the steeper hillsides are outside of the Project development area.

This modeling described above conservatively does not consider any benefits from Tejon's ongoing grazing operations by analyzing the Project site's fire behavior with a vegetation baseline condition that is assumed to be untreated/undisturbed, native fuel beds. This conservative approach ensures that the provided FMZ widths are adequate for protecting the structures and future populations even if the ongoing grazing operations were to cease for a period of time in the future.

However, for information purposes, the modeling also considered the scenario with ongoing livestock grazing, which results in reduced fire behavior in terms of flame lengths, fire spread rates, heat output, and overall intensity. For example, flame lengths are reduced throughout

the treated area and the highest modeled flame lengths were reduced from 14 feet to 3 feet (See Table 3.2-12). It is anticipated that the livestock grazing program would continue to provide these benefits, but even if the program is halted at some future date, the Project's planned FMZs provide the necessary setbacks and protection and do not rely on livestock treatments. Thus, the ongoing livestock grazing program provides additional benefits with respect to wildfire protection but is not necessary for the purpose of this evaluation.

TABLE 3.2-12
DIFFERENCES IN WILDFIRE BEHAVIOR ACROSS THREE GRASS FUEL MODELS (GR1 AND GR2)

Fuel Model	BehavePlus Output	97th Percentile Weather Fire Behavior
GR1 (Grazed grass fuels)	Surface Rate of Spread	0.47
	Flame Length	3.1 ft.
	Fireline Intensity	<100 BTU-ft-sec
GR2 (Ungrazed grass fuels)	Surface Rate of Spread	4.1 mph
	Flame Length	14.0 ft.
	Fireline Intensity	1000+ BTU-ft-sec

Landscape Burn Probability Modeling

Landscape burn probability (LBP) represents the likelihood that a given location in a landscape would burn, considering the model inputs used. Burn probability is related to the size of fires that occur on a given landscape, where larger fires produce higher burn probabilities than smaller fires. Because fire size is a function of wildfire spread rate and wildfire duration, weather conditions that reduce spread rates reduce burn probability (USDOI and USDA 2022b). In this analysis, weather conditions were set to 97th percentile and 50th percentile conditions to mimic extreme and average fire weather conditions that would be experienced at the Project site. LBP results are useful to identify the relative likelihood of fire occurring at the landscape level.

The modeling results for burn probability are displayed with seven distinct categories describing relative probability. The first two classes represent pixels that did not burn:

- Non-burnable – Pixels have a non-burnable fuel model and cannot burn.
- Burnable but did not burn – Pixels have burnable fuels but did not burn (e.g., a fire never reached the pixel, or a fire started within the pixel, but it was unable to burn out of the pixel because the fire spread rate was too slow).

The other five classes are dynamic and based on the maximum value of burn probability for the model run:

- Lowest (0–20% of maximum)
- Lower (20–40% of maximum)
- Middle (40–60% of maximum)
- Higher (60–80% of maximum)
- Highest (80–100% of maximum)

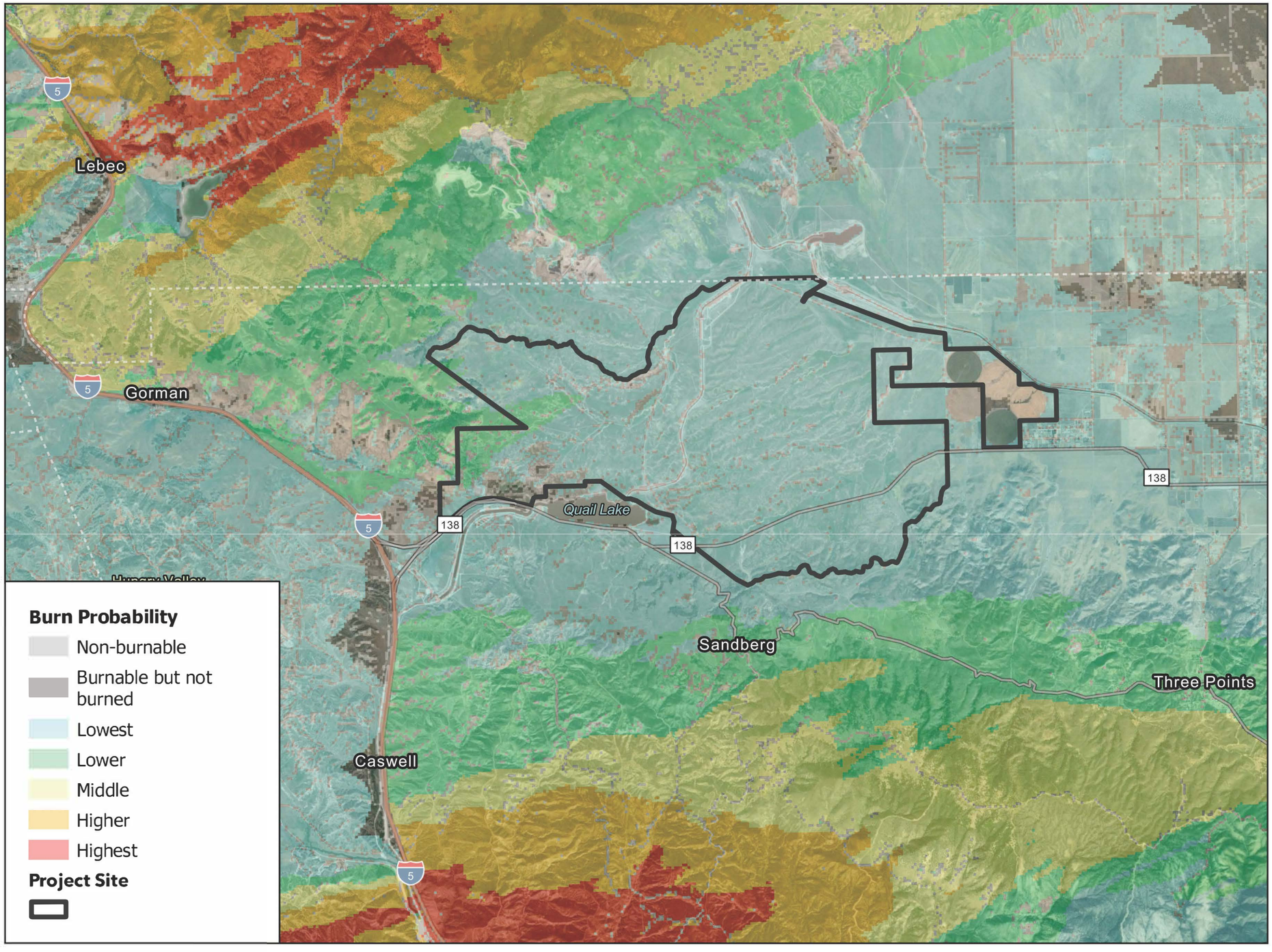
Results

As displayed in Exhibits 3.2-14 and 3.2-15, the Project site is situated away from areas with greater burn probabilities during both average (50th percentile) and extreme Santa Ana conditions (97th percentile).

Santa Ana Weather

During Santa Ana conditions, large wildfires are much more likely to occur in the steep, heavily vegetated, and mountainous terrain to the south and north of the Project site as presented in Exhibit 3.2-14. The location of the Project site makes it less susceptible to significant and direct wildfire impacts during Santa Ana weather. Although Santa Ana winds blow strongly from the northeast, the fuel conditions and terrain in that direction are not likely to lead to large, high-intensity wildfires reaching the Project site. This area, at the western edge of the Antelope Valley, consists of light fuel loads in grasslands and agricultural land. If a wildfire were to ignite to the northeast or east of the Project site, it would likely be a grass fire with minimal risk to developed areas. Furthermore, the offsite areas to the northeast have many access points that firefighters can use to contain any wildfires approaching the Project site. The California Aqueduct and the adjacent disturbed areas also border the Project site's northeastern edge, serving as a permanent fuel break during wind-driven grass fires.

If wildfires occur southeast of the Project site, Santa Ana winds from the northeast are likely to push the fires southwest, where the terrain and fuel conditions are more conducive to fire spread. It is possible that these fires could reach the southeastern edge of the Project site, where commercial development is planned. However, this development is set back from the more hazardous fuels found in the steeper terrain to the south, thus reducing fire risks to such development. Additionally, fires in this area during Santa Ana conditions are likely to move parallel to the wind direction, known as a flank fire. Flank fires typically burn at lower intensities compared to head fires, which spread in the wind's direction. Potential wildfire impacts in this area would be further reduced by perimeter parking areas (which act as fire breaks), Fuel Modification Zones (FMZs), and fire-hardened commercial buildings constructed in compliance with modern fire code requirements.



Source: Dudek 2023

Landscape Burn Probability (Santa Ana Weather)

Exhibit 3.2-14

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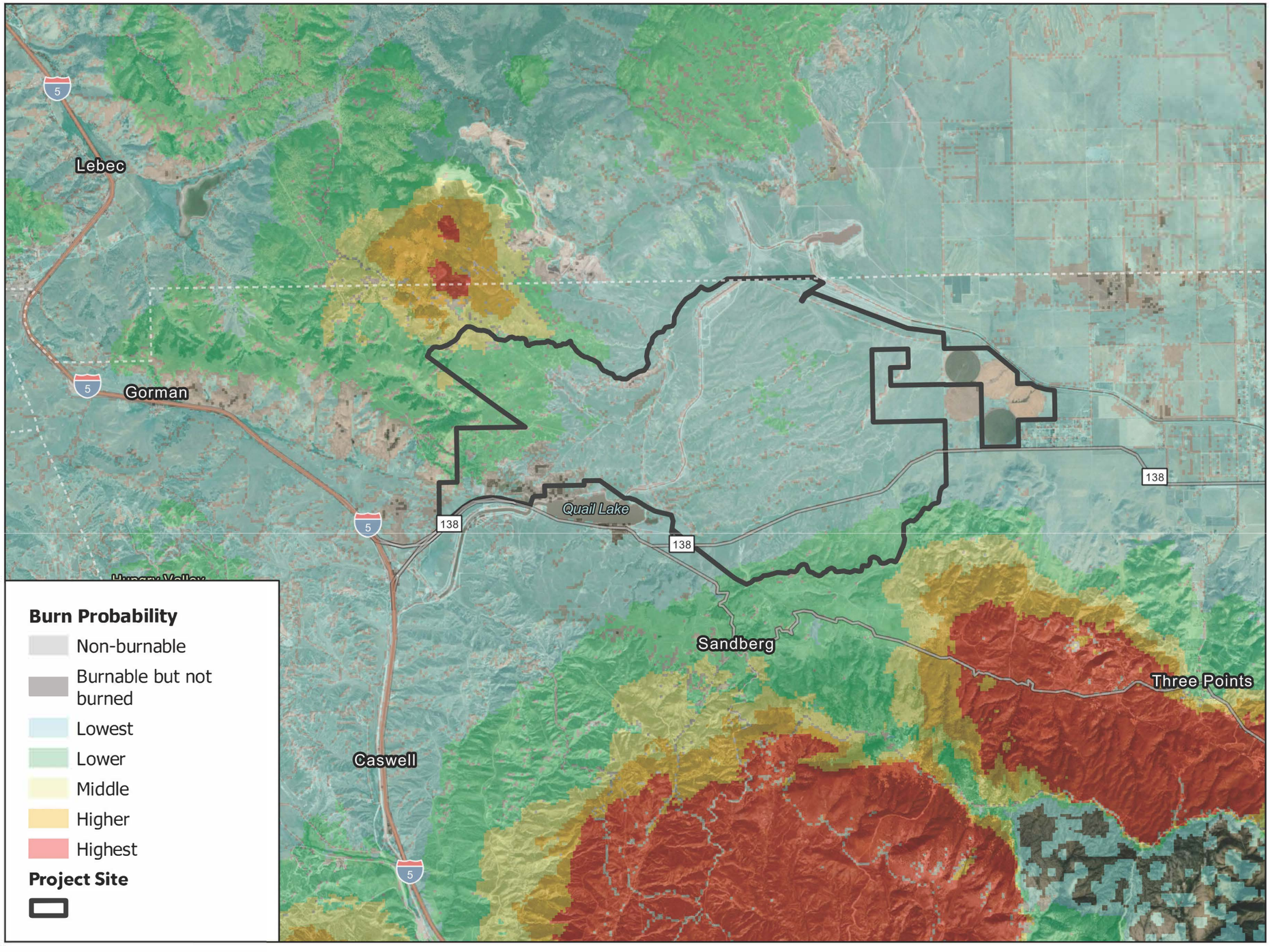

Source: Dudek 2023

Landscape Burn Probability (50th Percentile Weather)

Exhibit 3.2-15

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Average Weather

During typical weather conditions, large wildfires are more likely to occur in areas northwest and south of the Project site as presented in Exhibit 3.2-15. Fires to the south are not expected to move towards directly towards the site due to the prevailing northwest wind direction. While wildfires to the northwest could spread towards the Project site, the grassland fuels and moderate terrain in this region are not conducive to high-intensity fires. This is especially true during average weather conditions, when fuel moisture is higher and wind speeds are lower. An analysis of historic wildfires shows that no fires have ever encroached on the Project site from the north or northwest.

Integrated Hazard Modeling

Integrated Hazard is quantified and categorized using the Landscape Burn Probability Model embedded within the Interagency Fuel Treatment Decision Support System (IFTDSS) fire behavior modeling system. Integrated Hazard is a term used in fire behavior modeling to evaluate (1) the probability of a fire occurring at a specific point under a specified set of conditions, and (2), if a fire does occur, the fire intensity at that specific point.

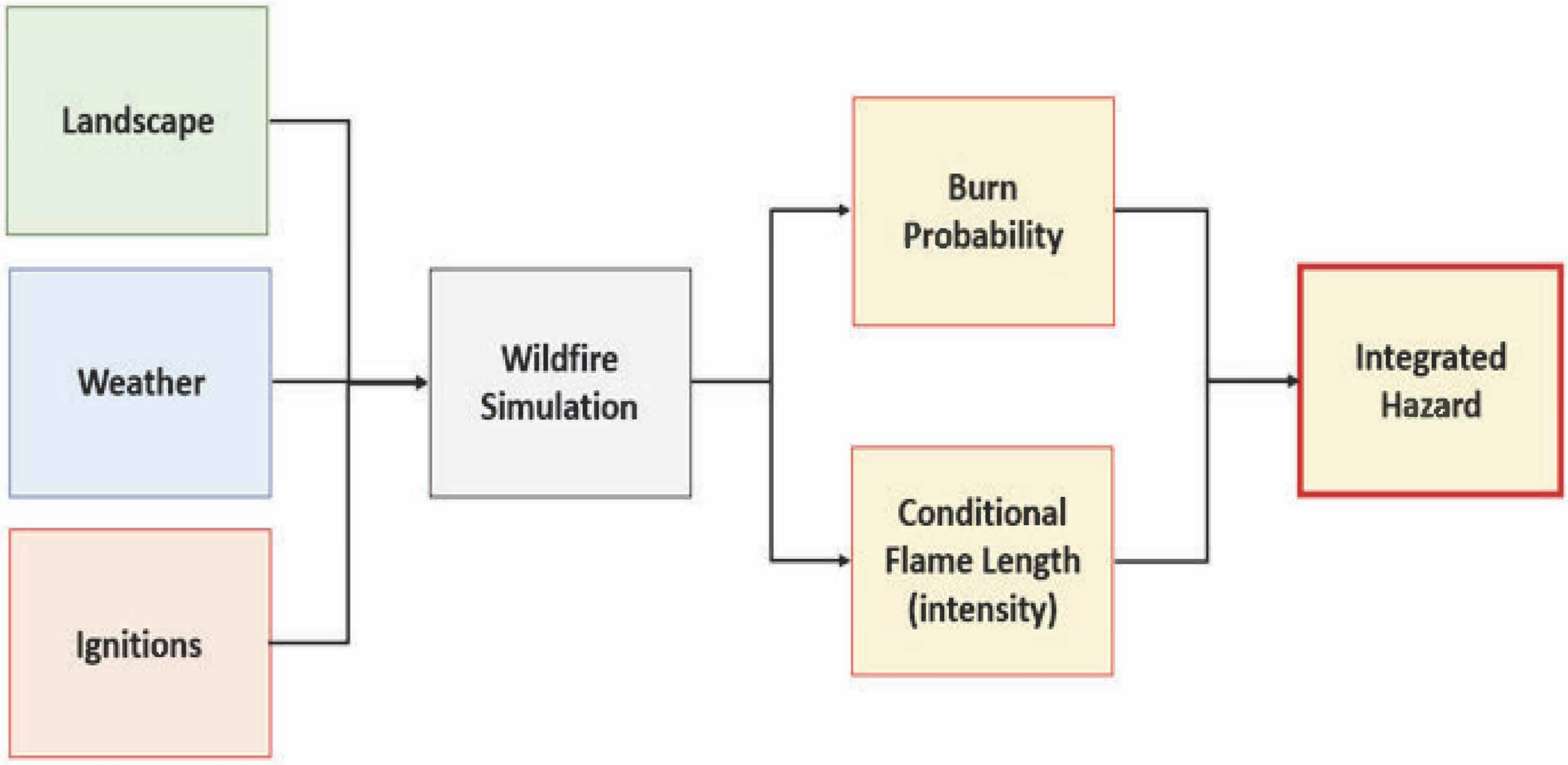
A diagram of the Integrated Hazard analysis process is provided in Exhibit 3.2-16. IFTDSS Integrated Hazard is categorized into seven distinct hazard classes. The first two are for pixels that did not burn, and the remaining five classes are dynamic based on the integrated hazard matrix presented in Exhibit 3.2-17. The seven classes are as follows:

- Non-Burnable
- Burnable but Not Burned
- Lowest Hazard
- Lower Hazard
- Middle Hazard
- Higher Hazard
- Highest Hazard

Results

Integrated hazard modeling outputs for the Project site and surrounding areas during average and Santa Ana weather conditions are provided in Exhibits 3.2-18 and 3.2-19, and Table 3.2-13. In both scenarios, greater wildfire intensity and likelihood is expected in offsite areas to the north, northwest, and south due to heavier fuels and steeper terrain compared to conditions within the Project site itself.

During average weather conditions, wildfire hazard within the Project site is considered low, with 72% percent of the Project site considered lowest hazard. As expected, due to higher wind speeds and lower fuel moistures, wildfire hazard within the Project site during Santa Ana weather increases the areas considered middle and higher hazard. However, areas



Source: Dudek 2022

IFTDSS Integrated Hazard Model Diagram

Exhibit 3.2-16

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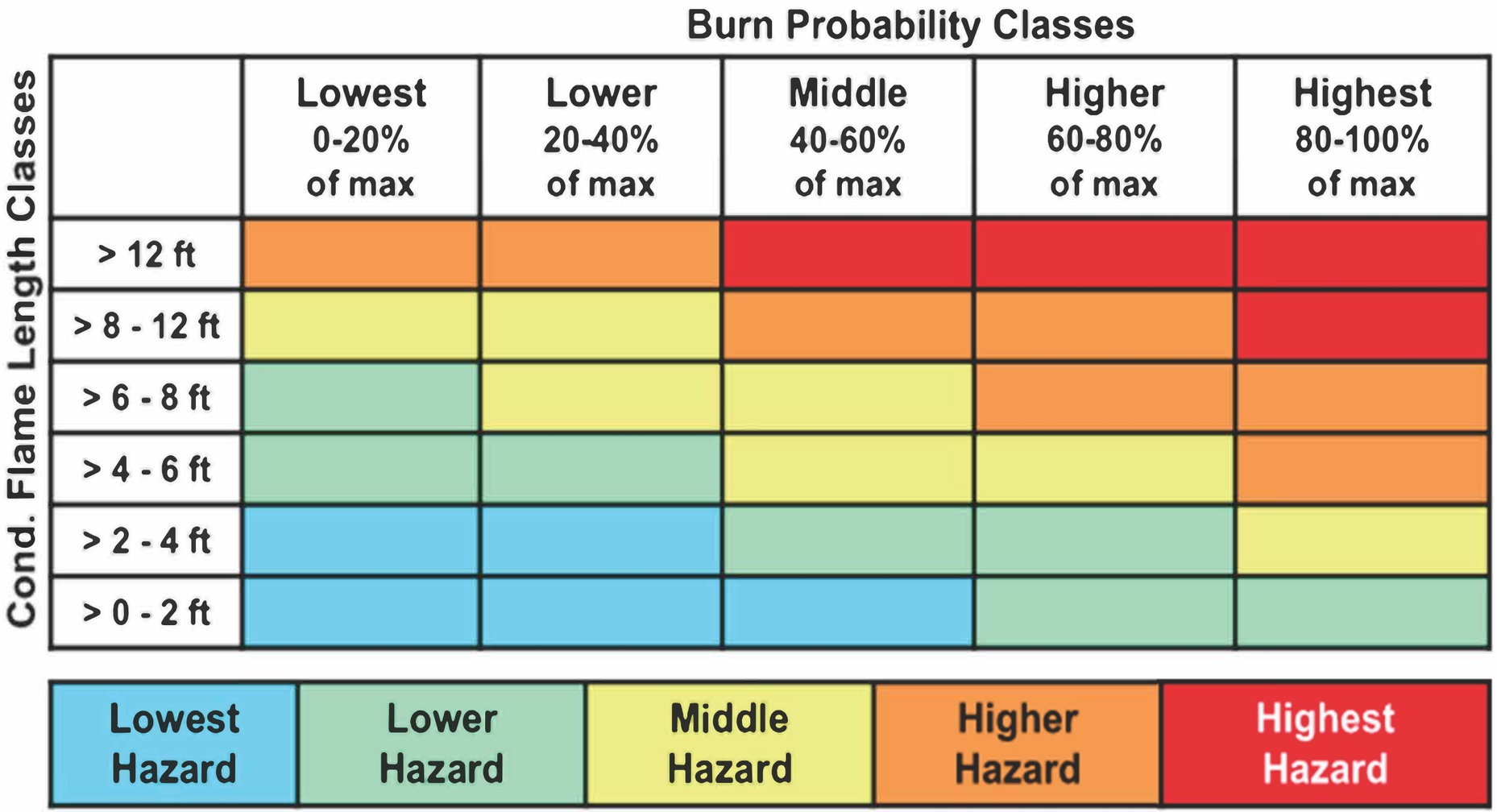

Source: Dudek 2022

IFTDSS Integrated Hazard Matrix

Exhibit 3.2-17

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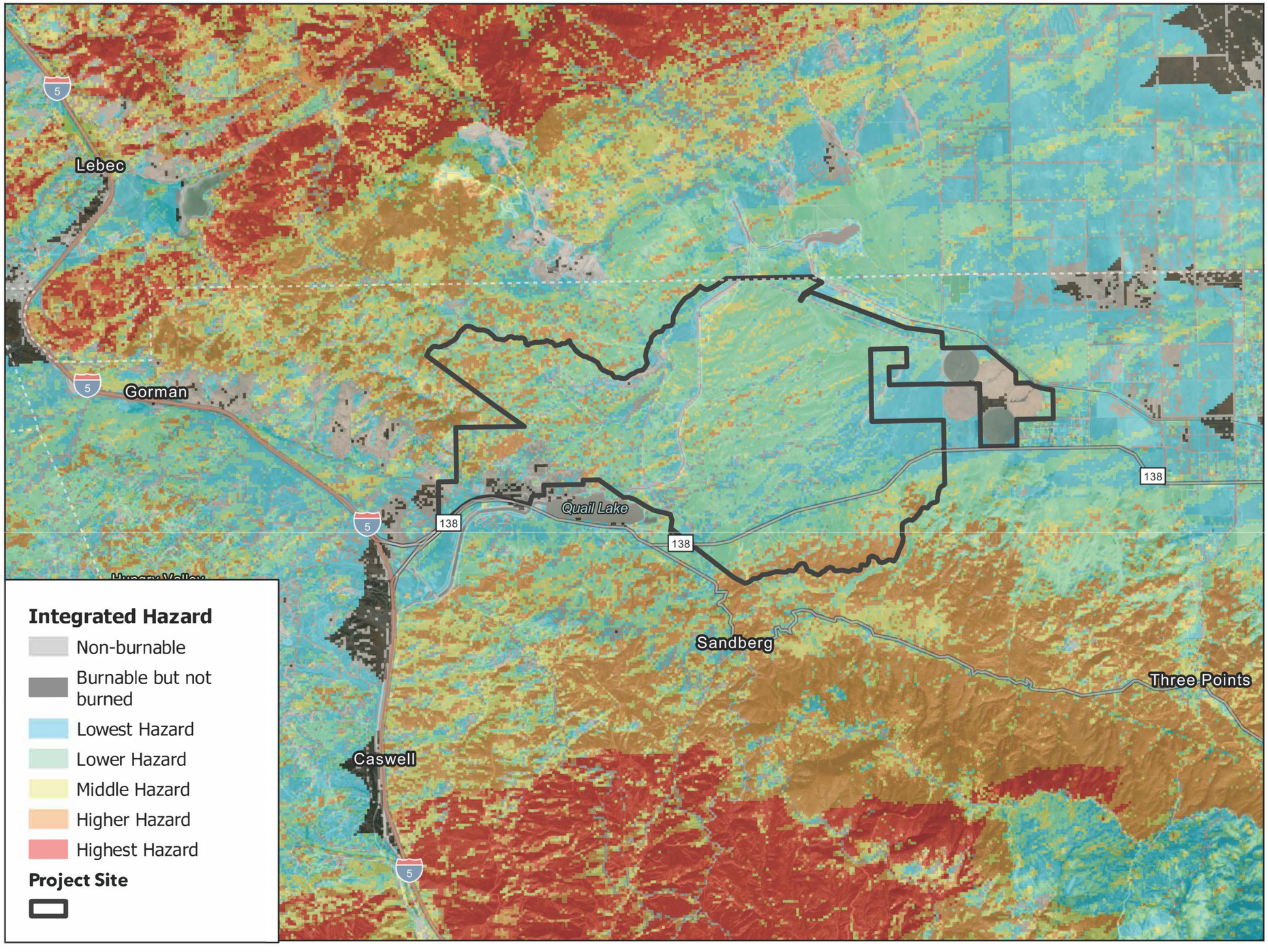

Source: Dudek 2023

Integrated Hazard (50th Percentile Weather)

Exhibit 3.2-18

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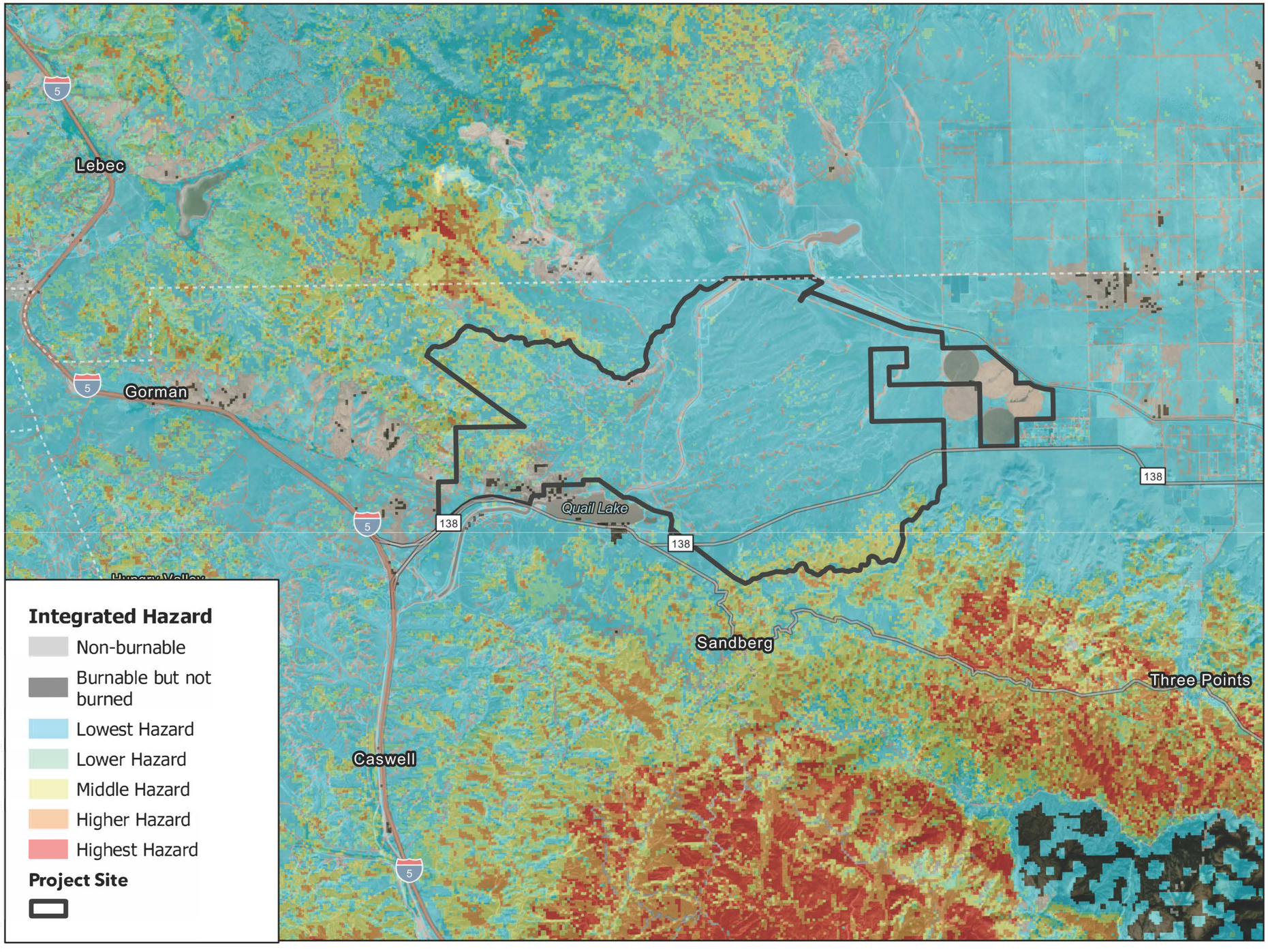

Source: Dudek 2023

Integrated Hazard (Santa Ana Weather)

Exhibit 3.2-19

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mapped as lowest and lower hazard still remain dominant, accounting for 68 and 81 percent of the Project site during Average and Santa Ana weather conditions, respectively.

TABLE 3.2-13
INTEGRATED HAZARD WITHIN THE PROJECT SITE
DURING AVERAGE SANTA ANA WEATHER CONDITIONS

Integrated Hazard Score	Santa Ana Conditions (97th Percentile)	Average Conditions (50th Percentile Weather)
Non-burnable	13%	13%
Burnable, not burned	<1%	<1%
Lowest Hazard	15%	72%
Lower Hazard	53%	9%
Middle Hazard	9%	5%
Higher Hazard	8%	<1%
Highest Hazard	0%	0%

Wildfire Progression Modeling

Wildfire Spread and Evacuation

Wildfire Progression Modeling was performed to assess how wildfires may spread towards the Project site and how fires may influence Project evacuations. Fire progression modeling predicts how a fire will spread over time by simulating its behavior based on current conditions such as fuel types, weather, and topography. These simulations forecast the fire's intensity, spread, and perimeter under specific conditions. Using hypothetical ignition locations, the simulations depict fire arrival times based on predicted wildfire spread.

Through a review of fire history records and landscape burn probability model results, wind patterns, terrain, and vegetation, three scenarios were modeled to simulate likely fire events in the Project's vicinity. Ignition points were mapped out in a linear fashion to consider various possible starting points for wildfires in each scenario. Model inputs are provided in Table 3.2-14 below and include information on the ignition points for each scenario along with the corresponding weather conditions.

TABLE 3.2-14
FIRE PROGRESSION MODELLING SCENARIOS.

Scenario	Ignition Location	Weather
1	Interstate-5 Eastern Roadside	50th Percentile Weather, winds 7 mph from the NW
2	Undeveloped land to the north	97th Percentile Santa Weather, winds 47 mph from the NE
3	Undeveloped land to the southeast	97th Percentile Santa Weather, winds 47 mph from the NE

Wildfires encroaching on the site from the south were not modeled as wind patterns are not conducive to wildfire spread towards the Project site from these directions. While Santa ana winds do blow from the east, wildfire spread towards the Project from fires burning directly from the east was also not modeled due to substantial agricultural areas and sparse fuel loads present in the Antelope Valley which prevent wildfire ignition and spread (See Fire History, Exhibit 3.2-5). In addition, the burn probability modeling results as presented in Exhibits 3.2-14 and 3.2-15 indicate a low likelihood of fire occurrence and spread within the region to the east of the Project site.

Results

In all modeled scenarios, the direction and speed of wildfire spread are influenced by various factors. Weather conditions, particularly wind speed and direction, play a significant role, alongside low humidity, high temperatures, and dry conditions, which can accelerate fire propagation. Additionally, topography, including slope and aspect, impacts the fire's path and speed, with steep slopes often facilitating faster movement. Fuel availability and moisture content also contribute; dry, dense vegetation ignites more easily and burns more rapidly than moist or sparse vegetation. The ignition source affects the initial spread and, once ignited, fire behavior, including flame intensity and ember spotting, further dictates spread patterns. Fire suppression is not accounted for during this analysis.

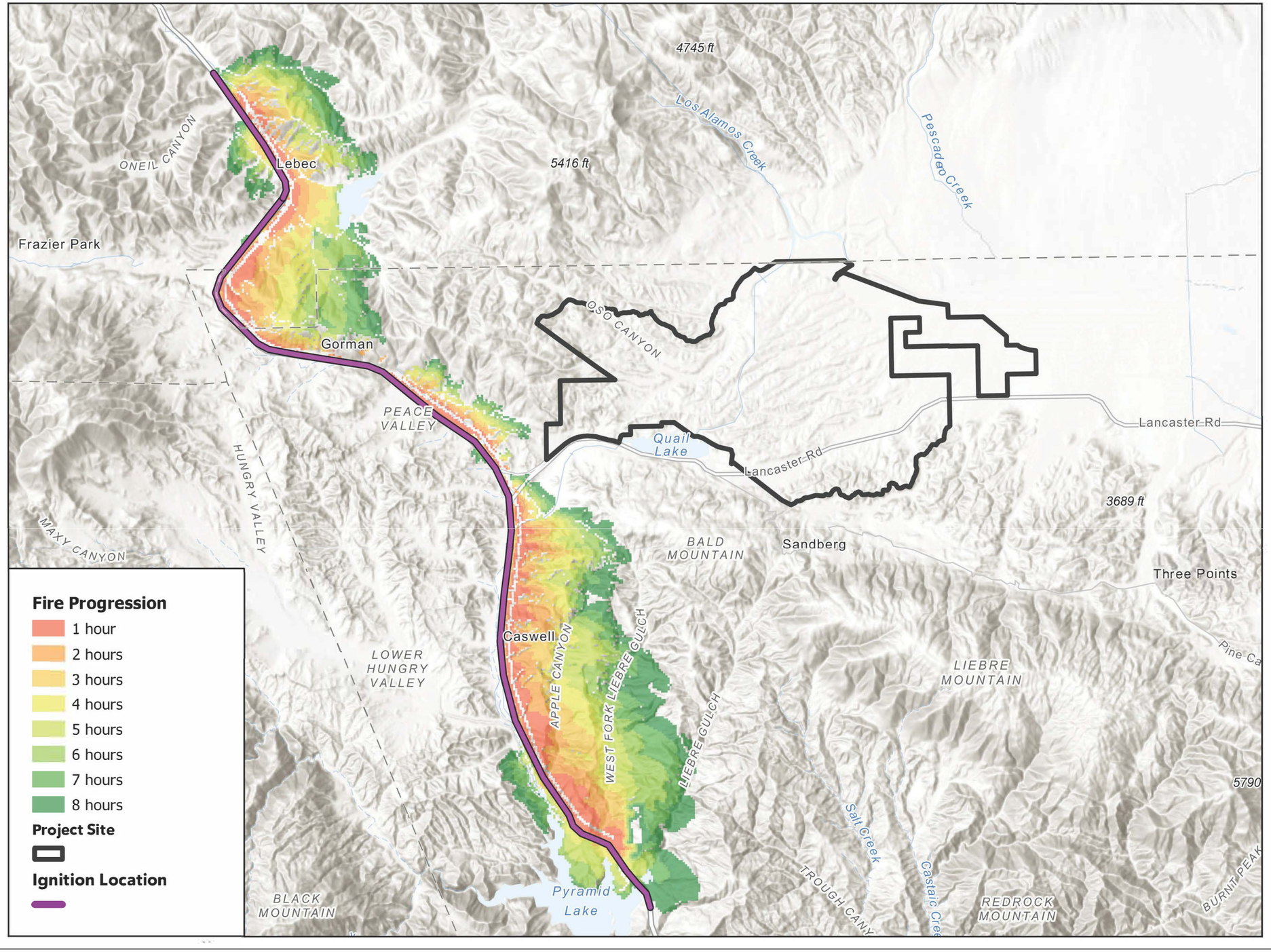
Scenario 1 – Fire Approaching from the Northwest:

This scenario assumes a wildfire that ignites along Interstate-5 northwest of the Project site and spreads is a southeast/eastern direction toward the Project site. Wildfire spread is slow due to lighter wind speeds during these weather conditions. The wildfire is not predicted to reach the Project site within the 8-hour simulation period. While a shelter in place approach at the Project site is likely during this scenario, evacuation via SR-138 east is unlikely to be impacted by wildfire as displayed in Exhibit 3.2-20.

Scenario 2 – Fire Approaching from the Northeast

As provided in Exhibit 3.2-21, this scenario assumes a wildfire that ignites northeast of the Project site and spreads in a southwest direction through undeveloped areas to the northeast of the Project site. This scenario further assumes that wildfire is driven by strong Santa ana winds and moves at a rapid rate of spread. Assuming no fire suppression efforts, the wildfire is modeled to reach development areas in the northern extreme of the Project site within 245 minutes (approximately 4 hours). The fire skirts the northern edge of the Project site and continues to travel southwest.

While the fire is modeled to reach the Project site (assuming no fire suppression efforts), the predicted fire behavior near planned development areas is modeled to be generally of low to moderate intensity (Exhibit 3.2-22). Fireline intensity is lower in these areas to due light fuels and moderate terrain which are not conducive to extreme fire behavior (See Exhibits 3.2-17 and 18). Perimeter FMZs bordering development areas would act to further reduce Fireline intensity near development areas.



Source: Dudek 2024

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Fire Progression – Northwest Ignition (50th Percentile Weather)

Exhibit 3.2-20

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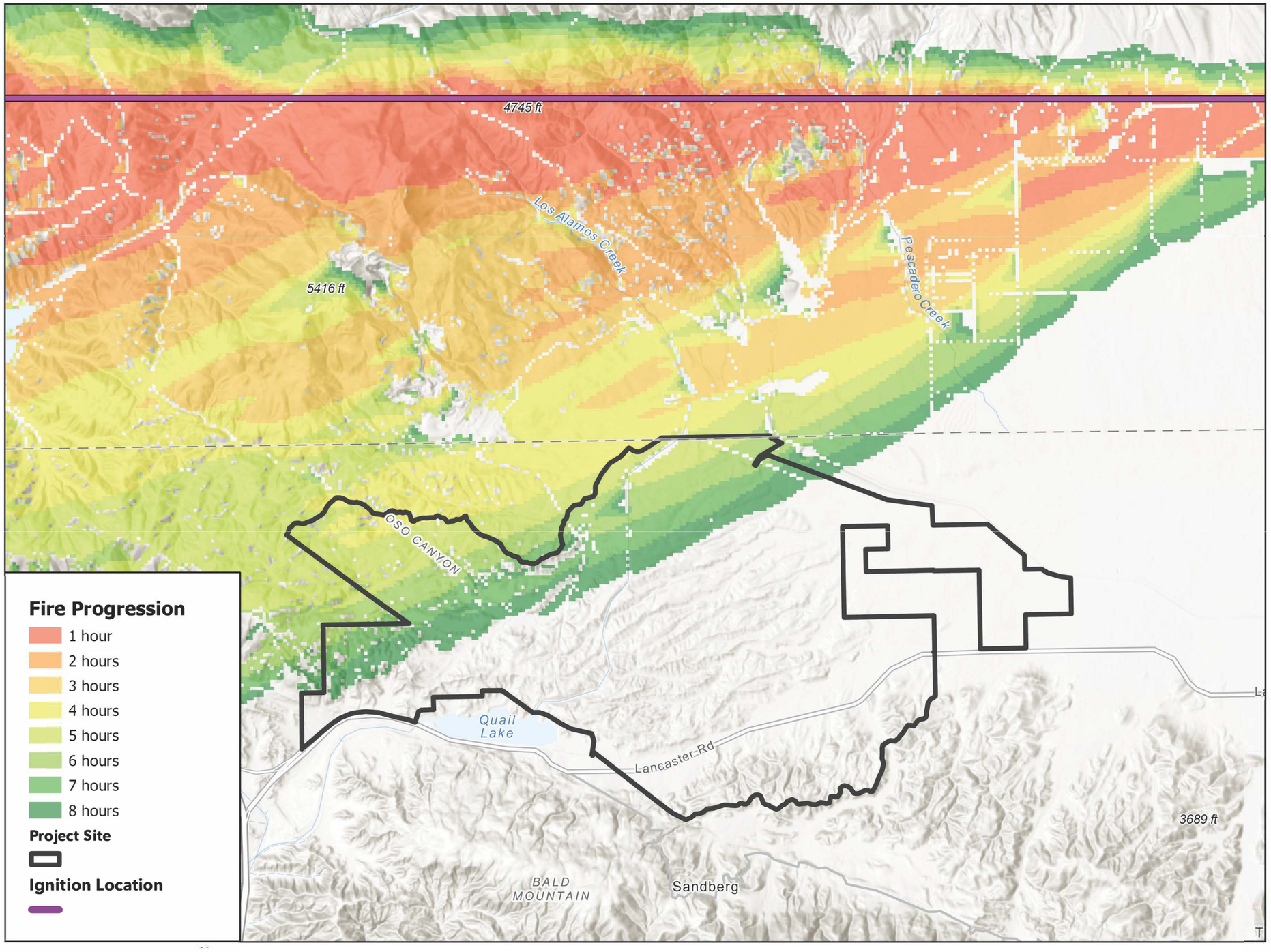

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Fire Progression – North Ignition (Santa Ana Weather)

Exhibit 3.2-21

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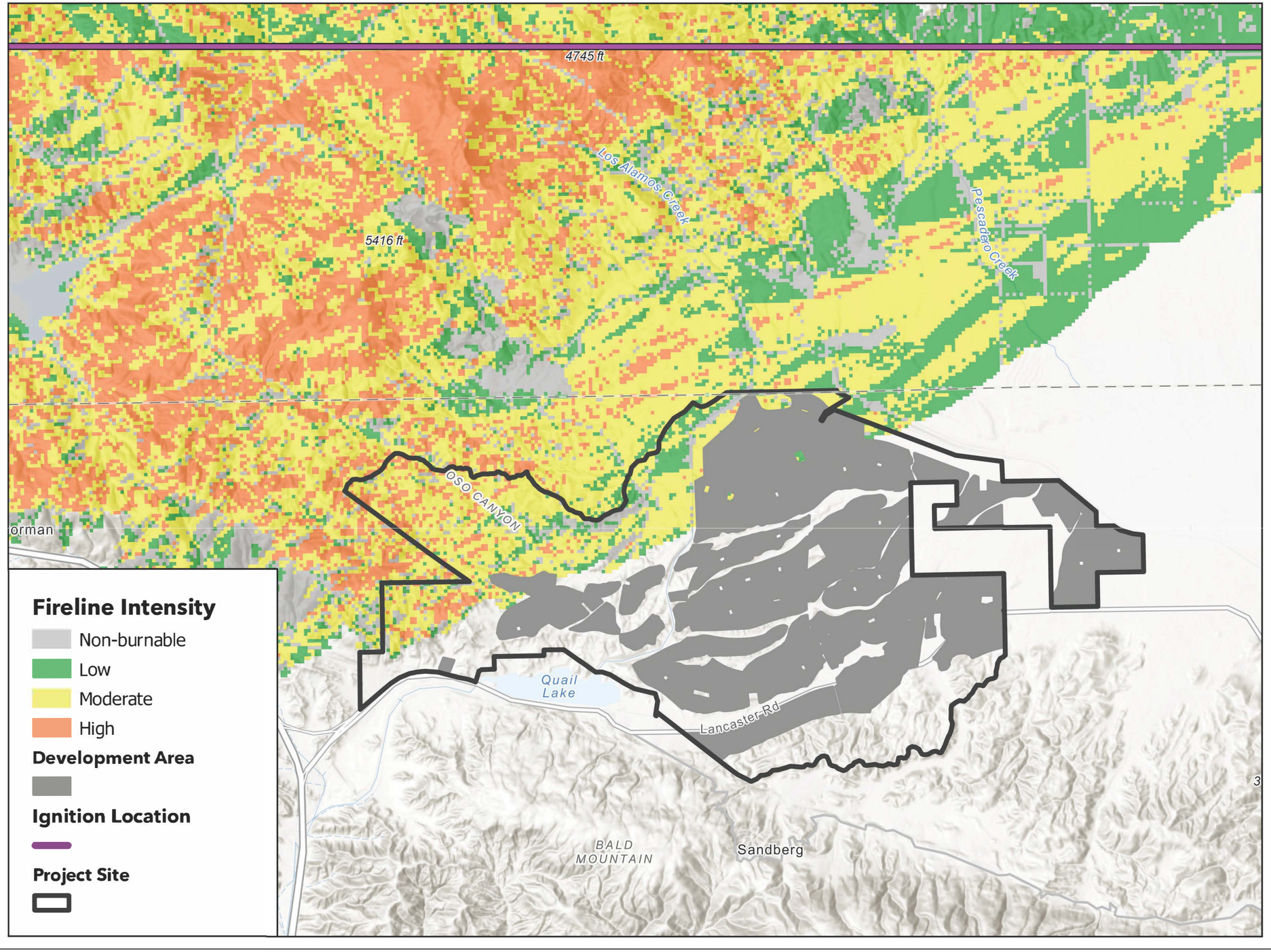

Source: Dudek 2024

Fireline Intensity – North Ignition (Santa Ana Weather)

Exhibit 3.2-22

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When considering evacuations during this scenario, SR-138 eastbound and westbound is not expected to be impacted by wildfire.

Scenario 3: Fire Approaching from the Southeast:

As provided in Exhibit 3.2-23, this scenario assumes a wildfire that ignites southeast of the Project site and spreads in a southwest direction through undeveloped areas to the south of the Project site. The wildfire is driven by strong Santa ana winds and moves at a rapid rate of spread. Assuming no fire suppression efforts, the wildfire is modeled to reach far southeastern development areas within 295 minutes (roughly 5 hours). The fire skirts the northern edge of the Project site and continues to travel southwest.

Similar to Scenario 2, fire intensity where the fire is modeled to reach the southern edge of the proposed development areas is considered low (Exhibit 3.2-24). Given the fire's southwest direction of spread which is not directly towards the Project site, fire behavior along the Project's southern edge would represent a flanking fire. Unlike head fires, which move in the direction of the wind and exhibit greater fire severity, flank fires move parallel to the wind direction and therefore burn at reduced severity. In addition to increased likelihood of successful suppression of a flank fire in the Project's southern edge, potential wildfire impacts in this area would be mitigated by perimeter parking areas, Fuel Modification Zones (FMZs), and fire-hardened commercial buildings.

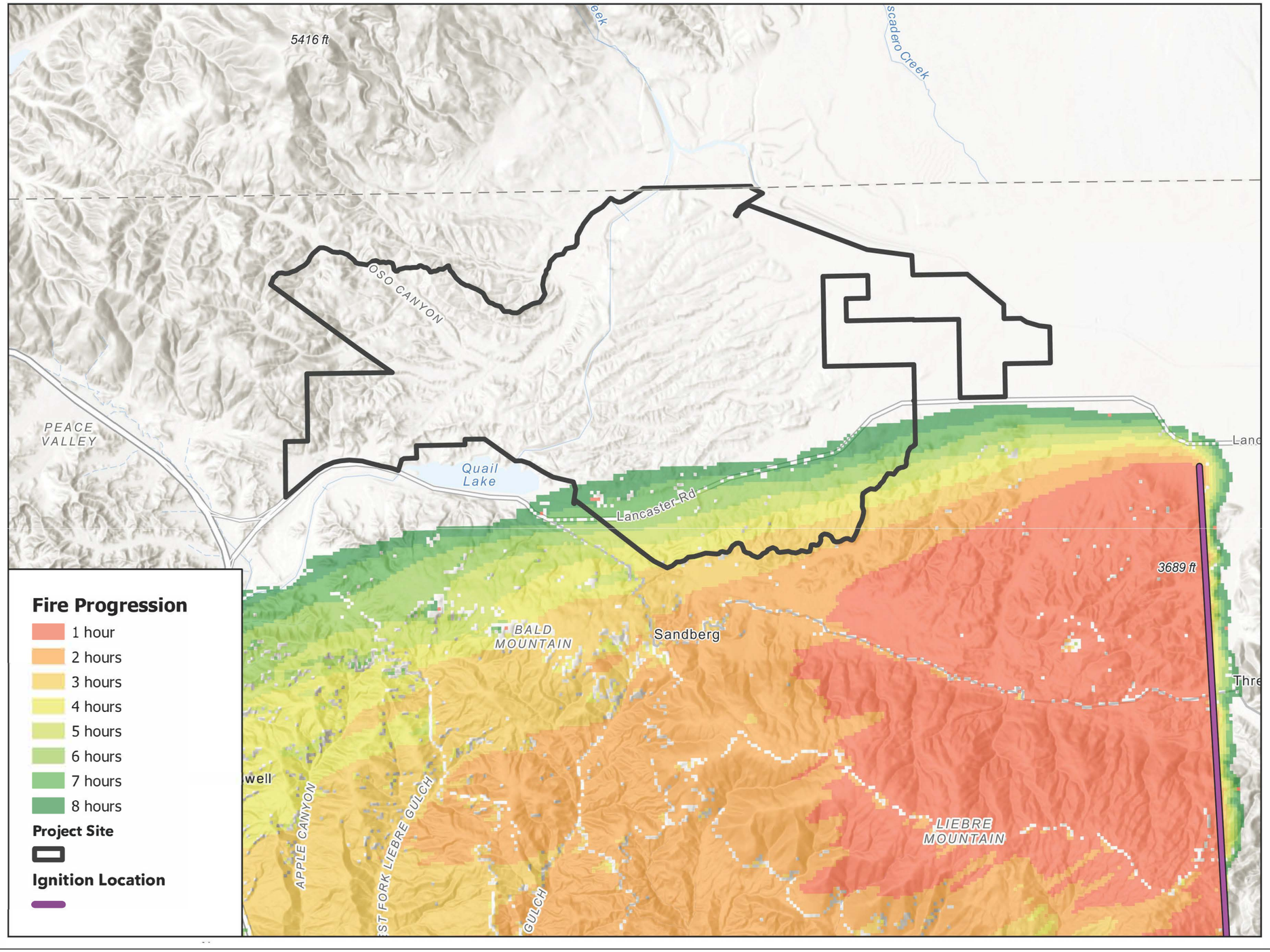
Effects of Fuel Modification Zones on Slowing Offsite Wildfire Spread

The impacts of perimeter FMZs on slowing the off-site spread of wildfires originating on site was also modeled. Fuel models in perimeter FMZ areas were edited to reflect vegetation conditions corresponding to the various FMZ standards. Off-site wildfire spread is modeled to slow substantially when accounting for the effects of perimeter FMZs during both average and extreme weather conditions. Graphical presentations of these results are provided in Exhibit 3.2-25, Offsite Fire Progression (50th Percentile Weather) and Exhibit 3.2-26, Offsite Fire Progression (97th Percentile Weather).

Wildfire Modeling Summary

Wildfire modeling results for predicted flame lengths, landscape burn probability, and integrated hazard conclude that the fire environment at the Centennial Project site is conducive to wildfire-safe development. Key findings include:

- Worst-case flame lengths near planned development areas were calculated at approximately 24 feet in grass-shrub vegetation types. In most areas adjacent to proposed development, flame lengths average 14 feet in the Project's grassland fuels. Perimeter FMZs will be 6-8 times the width of predicted worst-case flame lengths, providing wide separation between structures and natural fuels.
- Wildfire likelihood is low at the Project site from a regional perspective. Large wildfires are not likely to occur at the Project site but have higher likelihood within open spaces to the south, north, and northwest of the Project site. Wildfires are not



Source: Dudek 2024

Fire Progression – Southeast Ignition (Santa Ana Weather)

Exhibit 3.2-23

Centennial Supplemental Environmental Impact Report

N W E S

Map not to scale

PSOMAS

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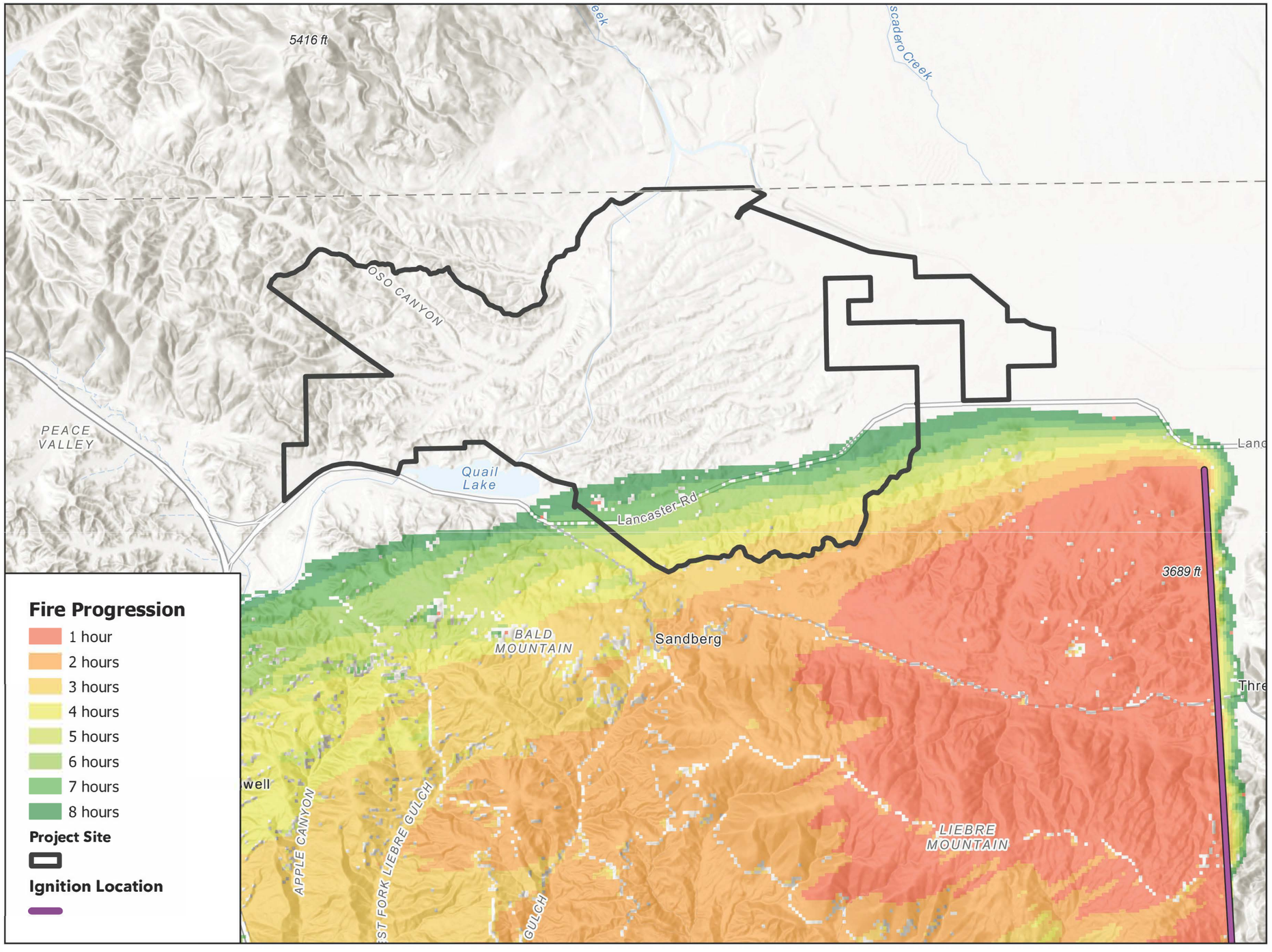

Source: Dudek 2024

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Fireline Intensity – Southeast Ignition (Santa Ana Weather)

Exhibit 3.2-24

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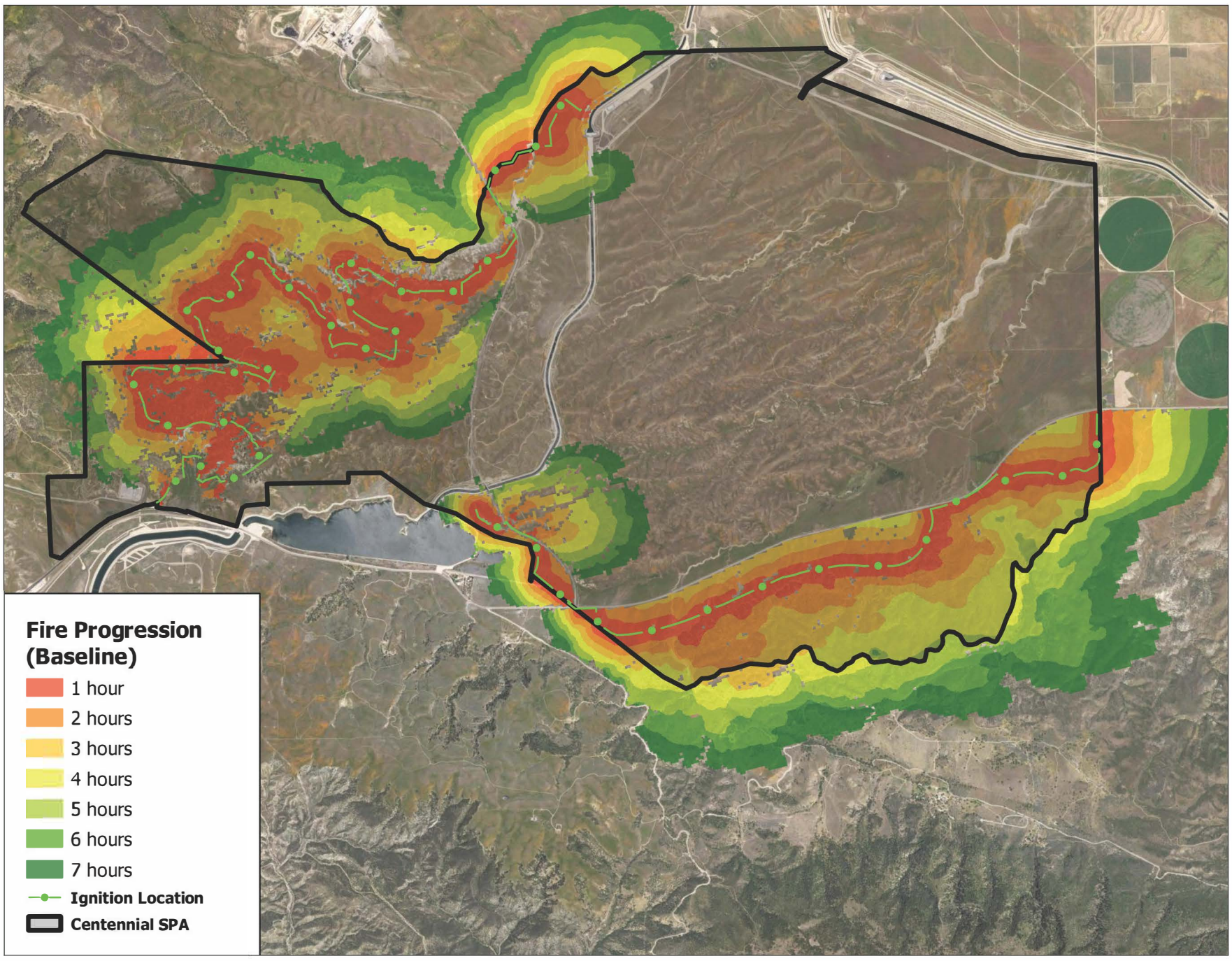

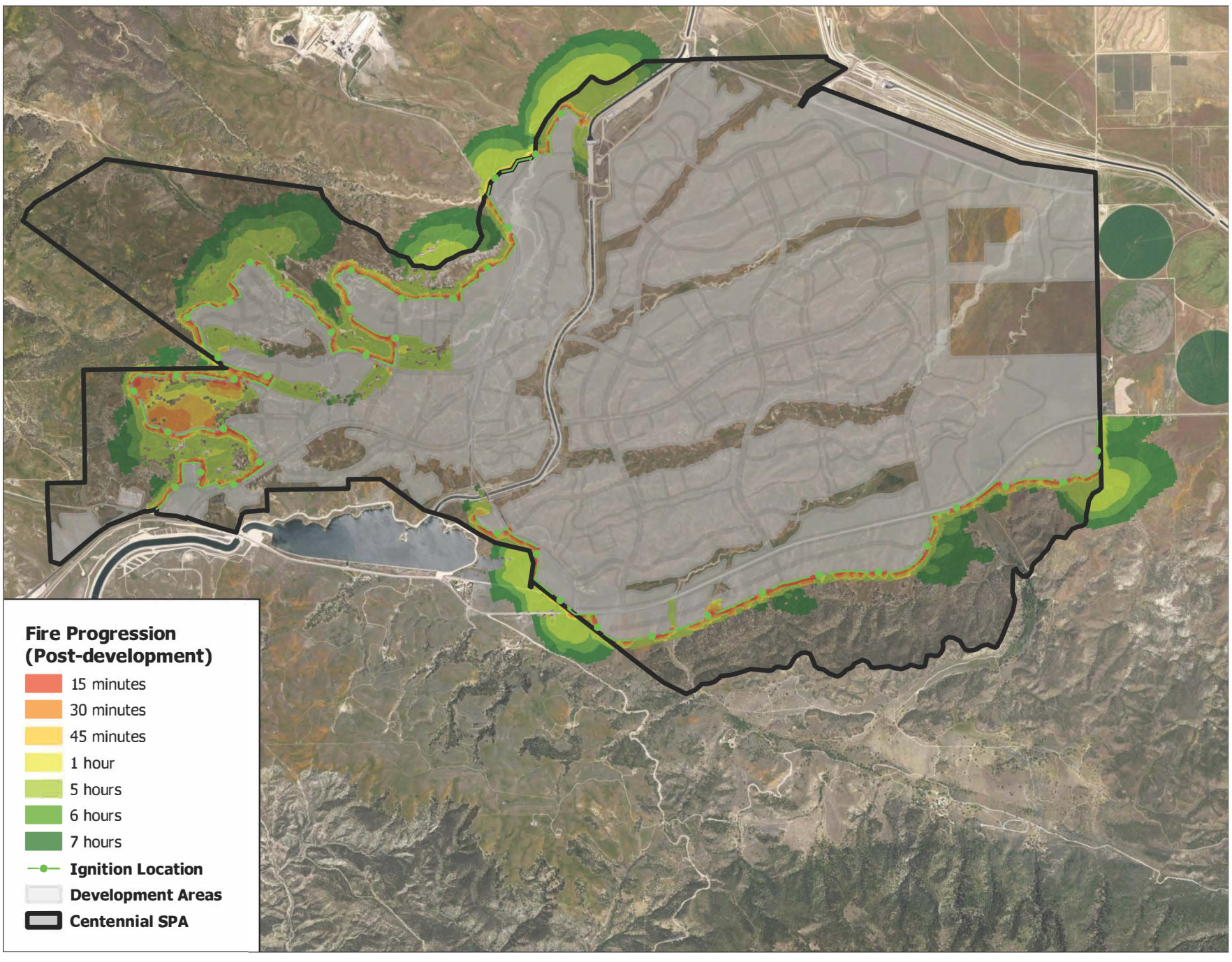

Source: Dudek 2024

Offsite Fire Progression (50th Percentile Weather)

Exhibit 3.2-25

Centennial Supplemental Environmental Impact Report

Map not to scale

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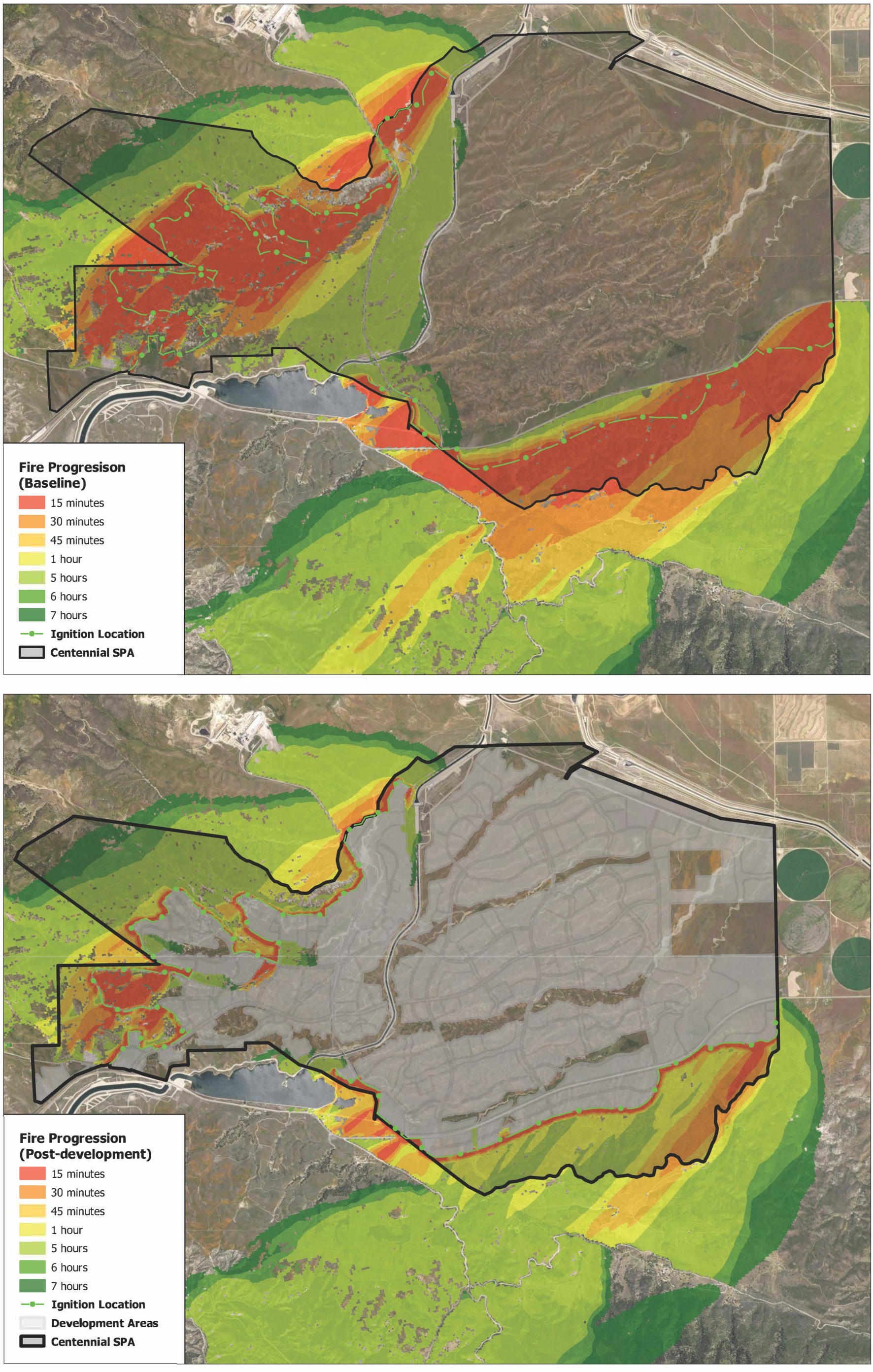

Source: Dudek 2024

Offsite Fire Progression (97th Percentile Weather)

Exhibit 3.2-26

Centennial Supplemental Environmental Impact Report

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Map not to scale

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likely to spread to the Project site from the east due to sparse fuels associated with agriculture and disturbed areas.

- Wildfire hazard is considered low at the Project site from a regional perspective. During Average and Santa Ana weather conditions, areas considered lowest and lower hazard comprise 68 and 81 percent of the Project site, respectively.
- If wildfires do occur in the Project's vicinity, they are more likely to spread from the north/northeast, northwest, or southeast.
- Perimeter Fuel Modification Zones are predicted to slow the ignition spread of wildfires to offsite areas in the rare event that they would ignite onsite (Bhandary and Muller 2009; Braziunas et al. 2021; Cochrane et al. 2012; Fox et al. 2018: Elia et al. 2019).

Off-Site Risk Analysis

An analysis of the Project's potential to cause fires that ignite on-site and subsequently spread off-site was conducted to inform the fire impact analysis prepared as a supplement to the 2019 EIR to analyze the environmental impacts of the Approved Project with Proposed Modifications (Project).

To date, there is no recognized scientific method for analyzing off-site ignition risk impacts of a proposed master-planned community such as the Centennial Specific Plan. There are various data available that can be used to evaluate some aspects of the potential for a population to result in ignitions, but understanding how specific and targeted design features and mitigation measures reduce potential ignition risk, if not prevent it altogether, have not been formalized. In many cases, the Project's features and measures also provide a public benefit beyond lessening the potential for increased on-site ignitions and off-site fire spread, as discussed herein. To that end, this analysis provides a comprehensive approach to evaluating the potential for an on-site ignition to cause an off-site ignition and spread-related impacts for a new master-planned community in a Fire Hazard Severity Zone (FHSZ). This assessment also applies this method to the Project to better understand the Project's potential fire-related impacts.

Project Vicinity and Land Uses

Existing land uses within 10 miles of the Project site were analyzed to identify off-site resources at risk from potential wildfires originating from ignitions that may occur on the Project site. The immediate vicinity of the Project site is generally bound by the Tehachapi Mountains to the north; the Antelope Valley is to the east; the northern edges of the Liebre and San Gabriel Mountains (Angeles National Forest) are approximately one mile to the south; privately owned vacant land is immediately adjacent to the site to the west; and the Los Padres National Forest is approximately seven miles to the west. The Project site is approximately 35 miles north of the City of Santa Clarita in Los Angeles County; approximately 50 miles south of the City of Bakersfield in Kern County via SR-99 and I-5; and approximately 36 and 43 miles west of the cities of Lancaster and Palmdale, respectively, in

Los Angeles County via SR-138. The community of Gorman in Los Angeles County is adjacent to the I-5 approximately four miles north of the I-5/SR-138 junction.

The majority of adjacent lands can be categorized as undeveloped or agricultural. Vast open spaces in the Project's vicinity include the Angeles National Forest, Bureau of Land Management lands, Tejon Ranch, Hungry Valley State Vehicular Recreation Area, Los Padres National Forest, and various private landowners. Proximal human development is generally limited to small enclaves along major roadways. Existing communities are rural large-lot residential and lower-density residential and are generally confined to the areas of Lebec, Gorman, Caswell, Sandberg, Three Points, and Neenach. According to the Microsoft Building Footprints database, 1,064 structures currently exist within 10 miles of the Project site, the majority of which are located to the east near Three Points and Neenach, in the opposite direction that wildfire under extreme conditions would spread. Structure locations and density in the Project's vicinity are presented graphically in Exhibit 3.2-27, Off-site Existing Structures. Other adjacent land uses include but are not limited to the following:

- California Department of Water Resources – the California Aqueduct and Quail Lake
- Pacific Gas and Electric, Southern California Gas Company, and Southern California Edison – major transmission facilities that traverse Tejon Ranch and are constantly monitored and upgraded
- Multiple telecommunications carriers – communications facilities and fiber optic easements traversing Tejon Ranch adjacent to or through future developments
- National Cement – major mining operations
- Agricultural and farming operations

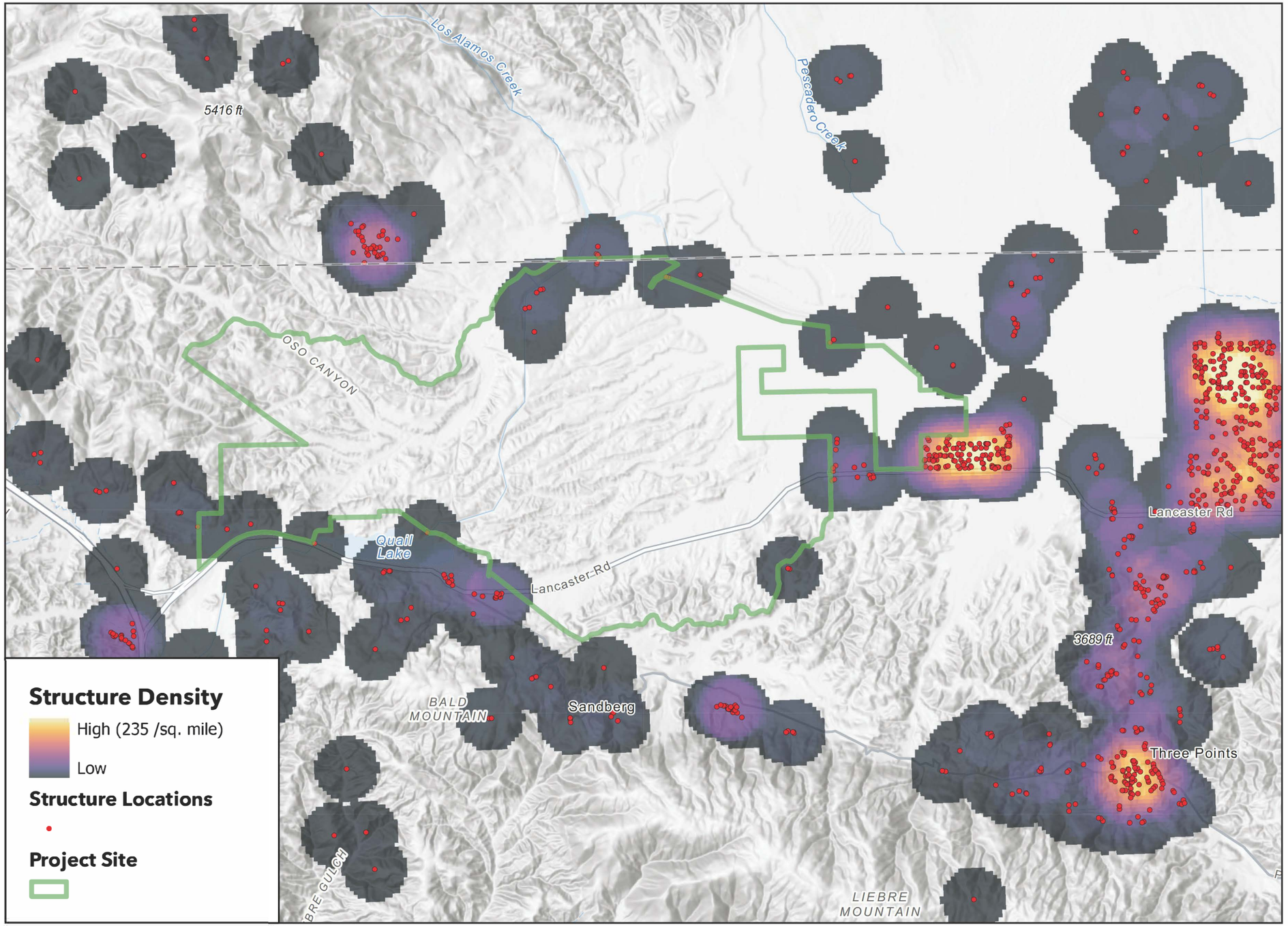
The Project's surroundings are a mix of agriculture, grassland-dominated open space, Quail Lake and aqueduct, rural large-lot residential, lower-density residential, school, I-5 freeway and SR-138, and various disturbed landscapes.

Risk Assessment Framework

The analysis utilized the following formula to quantify a development's potential to contribute to off-site wildfire ignition risk:

Fire Hazard + Ignition Risk – Mitigation = Risk

This methodology has precedence in previous studies (Dicus et al. 2014, Leyshon 2015, Leyshon et al. 2015). As here, the previous studies utilized California Fire Hazard Severity Zones (FHSZs) as the basis for fire hazard and explored mitigation actions to reduce the potential for structural loss (risk) in various communities of San Diego County that varied in housing density, age, and demographics. For purposes of this analysis, the term "mitigation" as used in the formula "Fire Hazard + Ignition Risk – Mitigation = Risk" refers to natural or project-provided fire reduction features that reduce overall ignition risk, whether those features are code-based, go above and beyond code requirements, are inherent to the project



Source: Dudek 2023

Offsite Existing Structures

Exhibit 3.2-27

Centennial Supplemental Environmental Impact Report

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Map not to scale

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design (e.g., proposed density), or are naturally occurring or otherwise present in the existing environment.

Hazard Analysis

Fire hazard was selected as the methodology starting point as it reflects the "default" existing condition of the landscape and site. To convey relative fire hazard across California, CAL FIRE categorizes all lands in which the State has primary fire protection responsibilities into one of three specific FHSZs: Moderate, High, or Very High. These categories are based upon the probability of a wildfire occurring (a product of historic fire occurrence) and the likely behavior of the fire following ignition (a product of the expected mature vegetation at the site, extreme fire weather, and slope steepness).

By design, the state does not consider any planned actions that reduce the potential fire hazard in a given area when designating a specific hazard rating. Instead, FHSZs are based on worst-case conditions, including extreme fire weather in mature (and untreated) vegetation. FHSZs are not designated with the intention to prohibit development but are instead meant to be used as a tool to illustrate the relative fire potential if no steps are taken to reduce the threat in a given area and to trigger the more restrictive construction requirements for buildings, roads, water, and other fire protection and safety features mandated by applicable regulations (CAL FIRE, 2019).

Ignition Risk Analysis

This off-site ignition risk analysis evaluates how development could impact potential fire ignitions. Even though ignition probability is inherently built into FHSZs via past fire history, changes to the landscape through development could change the probability of ignition via human activities.

While the proportion changes regionally across California, the vast majority of wildfires in California are started by human activities and are near developed areas (Syphard et al. 2007; Balch et al. 2017), or near human infrastructure (Syphard and Keeley 2016). Historically, the WUI expansion has been linked with increasing ignition probability (Faivre et al. 2014, Radeloff et al. 2018, Syphard et al. 2019), but wildfires in those studies occurred almost exclusively in older, existing communities that were not subject to modern regulatory requirements to lower fire risk. Since 2008, when the California Building Code was expanded to include Chapter 7A, Materials and Construction Methods for Exterior Wildfire Exposure, all new construction in WUI areas include the "hardening" features outlined in that new code section.

Ignition Risk Mitigation Analysis

Even with diligent efforts to prevent wildfire, not all ignitions can be averted. Thus, mitigation and preparatory efforts would reduce the risk of life/safety impacts to residents and loss of structures, both on- and off-site, even if fire suppression is precluded in a given area. If fighting wildfire is considered to be a battle to protect lives, buildings, and infrastructure, then preemptive fire reduction measures must be incorporated so as to shape

the proverbial battlefield to best enable success. Hence, the next step of the risk assessment methodology is to analyze the Project's proposed protection features and design elements and their effectiveness in reducing the risk.

Wildfire Off-Site Ignition Risk Assessment Matrix

This analysis includes a risk assessment matrix that can be utilized for development projects located in fire hazard severity zones, such as the Project, as part of the SEIR document to address the potential for off-site ignitions and impacts. However, the present focus of the methodology centers on the Approved Project with Proposed Modifications and the characteristics therein. Essentially, modeling or other tools are used to analyze ignition risk[1] and reveal the potential impacts that proposed development projects may have on adjacent lands or communities.

Risk Assessment Equation

The overall risk assessment is based on a model developed in 2015 (Leyshon) that starts with the hazard of a site based on the FHSZ rating and then subtracts the mitigation for the site to arrive at a risk score for the site.

Hazard - Mitigation = Risk

For purposes of determining the potential off-site risk for a development, the Leyshon equation was modified to add an Ignition Risk factor to represent the potential for on-site ignitions; the sum is reduced by the fire reduction measures a proposed project is providing. The result then represents the potential Off-site Risk.

Hazard + Ignition Risk – Mitigation = Off-site Risk

1. The first variable in the equation is Hazard. A given site's overall wildfire hazard may be analyzed using a variety of models and approaches. Given CAL FIRE's expertise with respect to FHSZ modeling, it is prudent to incorporate that model into this assessment of off-site ignition risk. Therefore, the FHSZ ratings are incorporated as the potential wildfire Hazard and simplified using the following ranking:

   Hazard: CAL FIRE FHSZ; Very High (3); High (2); Moderate (1)

2. The second variable in the equation is Ignition Risk. Ignition Risk is associated with a variety of site and project factors that either increase or decrease the potential for a vegetation ignition. The various factors are incorporated as the potential Ignition Risk and simplified using the following ranking:

   Ignition Risk: High risk factor (3); Moderate risk factor (2); Low risk factor (1)

3. The third variable in the equation is Mitigation, which, based on natural or project-provided fire reduction features, reduce overall ignition risk, whether the mitigation is code-based, goes above and beyond code requirements, is inherent to the project

design, or is naturally occurring or otherwise present in the existing environment. Examples include:

- Structural Mitigation Variables: hardening features, period of urban development, house size
- Non-structural Mitigation Variables: defensible space, housing density, distance from wildland vegetation
- Natural: bodies of water, non-burnable landscape

The measures are incorporated into the equation as Mitigation and simplified using the following ranking:

Mitigation: High reduction of ignition risk (3); Moderate reduction of ignition risk (2); Low reduction of ignition risk (1)

Off-site Ignition Risk Assessment Method

Wildfire Hazard Assessment

For purposes of this analysis, the CAL FIRE FHSZ classification system is used to represent the de facto hazard conditions of a project or area. The CAL FIRE hazard rating reflects the inherent natural physical conditions of the site that create a likelihood of fire ignition and expected fire behavior and burn probability for a potential wildfire that may be ignited within the Project vicinity. Listed below are the CAL FIRE FHSZs and their corresponding hazard ranking, which would be identified for the project being evaluated and entered into the assessment equation. Projects located in a FHSZ would be assigned a hazard rating as classified by CAL FIRE: Moderate, High or Very High.

Fire Hazard Severity Zone	Hazard Ranking
Moderate	1
High	2
Very High	3

The FHSZ classification is determined by referring to the CAL FIRE Office of the State Fire Marshal map designation. A lower ranking represents a lower level of risk.

Wildfire Ignition Risk Assessment

Table 3.2-15 summarizes the variables of a project's design and ranks them by category based on the Attorney General wildfire guidance document's assessment of features and characteristics that result in increased or decreased ignition risk. The ranking was determined by comparing the variables with each other, analyzing whether each element was more or less of a risk than other variables. A lower ranking represents a lower risk; a higher ranking represents a higher risk.

TABLE 3.2-15
IGNITION RISK: WILDFIRE IGNITION RISK ASSESSMENT FOR DEVELOPMENT PROJECTS[1]

Wildfire Ignition Risk Variables	Ignition Risk Impact Factor	Ranking
Wildfire Risk Variables Related to the Project's Design		
Variable A. Project Density		
Choose either A1 or A2, but not both; in addition, select A3 if applicable. For example, a remote, high-density project would be assigned a rank of 4 (A2 + A3).	A1. Low or intermediate density, intermix development: not concentrated, fragmented, isolated patches of development (more exposure to wildland vegetation)	2
	A2. High density interface development: concentrated (disrupts fire spread)	1
	A3. Remote or disconnected from existing development (difficult fire department access)	3
Variable B. Project Location in the Landscape		
Select all that apply.	B1. Aboveground power lines (power lines located in a wind corridor may become a source of ignition)	3
	B2. Structures sited in rugged terrain or on top of steep hills (may increase wildfire risk)	2
Variable C. Water Supply and Infrastructure		
Select all that apply.	C1. The Project's water supply and infrastructure are adequate for firefighting needs	0
	C2. There is a potential for loss of water pressure during a fire that may decrease available water supply	1
	C3. There is a potential for loss of power that may eliminate the water supply	2
	Sum of Ignition Risk Assessment Ranking*	**13**

[1] Based on California Attorney General Guidance.
Note: *Ignition Risk Assessment Ranking: High risk factor (ranking sum of 11 to 13 = 3); Moderate risk factor (ranking sum of 6 to 10 = 2); Low risk factor (ranking sum of 2 to 5 = 1); Not a risk factor (ranking sum of 0 to 1 = 0).

As provided above in Table 3.2-15, wildfire ignition risk is related to a project's design, location in the landscape, and water supply and infrastructure. Projects with the highest ignition risk would resemble wildland-urban intermix development with low or intermediate density development and high exposure to wildland vegetation. In addition, they would be remote and disconnected from existing developments resulting in difficult fire department access. A project's ignition risk would be further increased if aboveground power lines are present (particularly in a wind corridor), or if structures are sited in rugged terrain or at the top of steep slopes. Finally, wildfire ignition risk would be considered higher if a project's water supply is vulnerable to a loss of pressure or if power loss is possible that may eliminate water supply. Project's that align with these wildfire ignition risk factors would be assigned an ignition risk assessment ranking score of 13.

In contrast, projects with a lower ignition risk would resemble wildland-urban interface developments characterized by higher density, clustered buildings, and distinct boundaries separating development areas from wildland vegetation. Additionally, they would not include aboveground powerlines but instead would underground all new powerlines. Further, siting development areas in gentle terrain and near existing fuel breaks reduces ignition risks. Water supply that is adequate for firefighting needs and not susceptible to pressure and power losses also decreases a project's ignition risks. Project's that effectively mitigate wildfire ignition risks to the lowest level would be assigned an ignition risk assessment ranking score of 1.

Wildfire Ignition Risk Mitigation Assessment

Table 3.2-16 provides a description of additional mitigation measures that build upon the AG Guidance and are used to evaluate a project's potential for igniting fires that spread off-site into adjacent wildlands. A project specific assessment of these measures is provided later in Table 3.2-18 which considers the Project's implementation of these risk reduction measures.

TABLE 3.2-16
MITIGATION: WILDFIRE IGNITION RISK REDUCTION MEASURES

Wildfire Ignition Risk Reduction Measure[1]	Category	Ranking for On-site Ignition Risk[2]	Ranking for Off-site Ignition Risk[3]
Siting projects to maximize the role of low-flammability landscape features to buffer the development from fire spread	Project siting	2	2
Limiting development along steep slopes and amid rugged terrain (decreases exposure to rapid fire spread and increases accessibility for firefighting)	Project siting	2	1
Placement of development close to existing or planned ingress/egress and designated evacuation routes (for efficient evacuation while allowing emergency access and rapid-fire suppression)	Project siting	1	1
Placement of projects close to adequate emergency services	Project siting	3	2
Increasing housing density and consolidated design, relying on higher-density infill developments as much as possible	Housing density	3	2

TABLE 3.2-16
MITIGATION: WILDFIRE IGNITION RISK REDUCTION MEASURES

Wildfire Ignition Risk Reduction Measure[1]	Category	Ranking for On-site Ignition Risk[2]	Ranking for Off-site Ignition Risk[3]
Avoidance and minimization of low-density exurban development patterns or leapfrog-type developments	Housing density	3	0
Decreasing the extent and amount of "edge" or interface area that is adjacent to undeveloped wildlands	Housing density	3	2
Construction of additional points of ingress and egress and modification of evacuation routes	Ingress/egress	2	0
Undergrounding power lines	Infrastructure	3	3
Requiring fire-hardened communication to the Project site	Infrastructure	1	0
Parking limitations to ensure roads are not clogged with parked vehicles	Infrastructure	1	1
On-site water supply/storage to augment ordinary supplies	Infrastructure	2	2
Fire hardening structures and homes to requirements provided in Chapter 7A of California Building Code (CBC) and Section R237 of the California Residential Code (resistance to heat, flames, and embers)	Construction features	2	1
Creation of buffer zones and defensible space within and adjacent to the development	Vegetation management/FMZ / defensible space	3	2
Ensuring that vegetation will not touch structures or overhang roofs	Vegetation management/FMZ / defensible space	2	1
Structure legal obligations so that defensible space measures are retained over time	Vegetation management/FMZ / defensible space	1	0[2]

[2] Legal obligations would only apply to the project or its future residents and not to off-site lands or neighbors. Therefore, the obligations would only be able to directly address on-site risk factors. The risk of an on-site ignition spreading to off-site is always a possibility, but legal obligations would not have a significant impact in that regard.

TABLE 3.2-16
MITIGATION: WILDFIRE IGNITION RISK REDUCTION MEASURES

Wildfire Ignition Risk Reduction Measure[1]	Category	Ranking for On-site Ignition Risk[2]	Ranking for Off-site Ignition Risk[3]
Enhanced communication to the Project population about emergency evacuation plans and evacuation zones[3]	Training	1	0
Mitigation Ranking Sum*		**35**	**20**

Notes: FMZ = Fire Management Zone.
1 Potential mitigation measures and design alternatives that may reduce wildfire risk impacts (not exclusive).
2 Potentially impacting existing structures within the new development.
3 Potentially impacting existing structures proximal to the development.
* On-site Mitigation Ranking: High reduction of risk (ranking sum of 25 to 35 = 3); Moderate reduction of risk (ranking sum of 14 to 24 = 2); Low reduction of risk (ranking sum of 4 to 13 = 1); Not a risk factor (ranking sum of 0 to 3 = 0).
* Off-site Mitigation Ranking: High reduction of risk (ranking sum of 14 to 20 = 3); Moderate reduction of risk (ranking sum of 8 to 13 = 2); Low reduction of risk (ranking sum of 3 to 7 = 1); Not a risk factor (ranking sum of 0 to 2 = 0).

As detailed in Table 3.2-16 above, project design features and risk reduction measures concerning project siting, housing density, ingress and egress, infrastructure, construction features, vegetation management, and training affect both on-site and off-site ignition risks. On-site risks are associated with the structures within the Project, while off-site risks refer to the potential impact on nearby structures. When implemented, these measures can reduce on-site ignition risks, and in some cases, they may simultaneously decrease both on-site and off-site ignition risks through specific mitigation strategies. Projects that implement all risk reduction measures described in Table 3.2-16 will result in total ignition risk rankings of 35 and 20 for on-site and off-site ignition risks, respectively.

Application of the Wildfire Off-site Ignition Risk Assessment Matrix

Based on the variables and ranking parameters for each risk factor and AG Guidance risk reduction measure (See Table 3.2-17 below), an experienced professional fire protection planner evaluated the Centennial Project from an overall wildfire risk and mitigation

[3] While evacuation communication may not on its face seem to play a role in reducing ignition risk, the practice of regular communication keeps residents engaged in the preparedness process and more aware of wildfire hazards/risks and their role in prevention and response. See the points below from the U.S. Fire Administration.

- When residents are informed about potential wildfire threats early, they have time to prepare their homes, gather essential items, and make informed decisions about evacuation, reducing the likelihood of rushed actions that could lead to accidental ignition.
- Active communication with residents helps build awareness of fire risks, encourages proactive measures like defensible space creation, and fosters a sense of preparedness within the community.
- By regularly communicating evacuation procedures and the consequences of not evacuating promptly, residents are more likely to heed warnings and take necessary actions to protect themselves and their property.

perspective to assess the Project in terms of its potential to result in off-site ignitions that may threaten off-site habitats and communities (Dudek, 2025).

Based on the site-specific analysis and considering the various input factors for the fire environment, the Project's hazard, ignition risk and mitigation measures, the overall Project Wildfire Off-Site Ignition Risk Level is considered to result in a Moderate level, as shown below and in Appendix J (Dudek, 2025).

Hazard Ranking + Risk Factor Ranking – Mitigation Level Ranking= Off-site Risk

Step 1. Hazard Ranking: Very High Fire Hazard Area **= 3**

Fire Hazard Severity Zone	Hazard Ranking
Moderate	1
High	2
Very High	**3**

Step 2. Risk Factor Ranking: Moderate = **1**

TABLE 3.2-17
CENTENNIAL SPECIFIC IGNITION RISK: WILDFIRE IGNITION RISK ASSESSMENT FOR DEVELOPMENT PROJECTS[1]

Wildfire Ignition Risk Variables	Ignition Risk Impact Factor*	Ranking
Wildfire Risk Variables Related to the Project's Design		
Variable A. Project Density		
Choose either A1 or A2, but not both; select A3 if applicable.	A1. Low or intermediate density: not concentrated, fragmented, isolated clusters (more exposure to wildland vegetation)	2
	A2. High density: concentrated (disrupts fire spread)	**1**
	A3. Remote or disconnected from existing development (difficult fire department access)	3
Variable B. Project Location in the Landscape		
Select all that apply.	B1. Aboveground power lines (power lines located in a wind corridor may become a source of ignition)	3
	B2. Structures sited in rugged terrain or on top of steep hills (may increase wildfire risk)	2
Variable C. Water Supply and Infrastructure		
Select all that apply.	C1. The project's water supply and infrastructure are adequate for firefighting needs	0

TABLE 3.2-17
CENTENNIAL SPECIFIC IGNITION RISK: WILDFIRE IGNITION RISK ASSESSMENT FOR DEVELOPMENT PROJECTS[1]

Wildfire Ignition Risk Variables	Ignition Risk Impact Factor*	Ranking
Wildfire Risk Variables Related to the Project's Design		
Variable A. Project Density		
	C2. There is a potential for loss of water pressure during a fire that may decrease available water supply	**1**
	C3. There is a potential for loss of power that may eliminate the water supply	**2**
	Centennial Project Sum of Ignition Risk Assessment Ranking	**4**

[1] Based on California Attorney General Guidance.
Note: *Ignition Risk Assessment: High risk factor (3); Moderate risk factor (2); Low risk factor (1); Not a risk factor (0).

Sum of Ignition Risk Factors Ranking	Ranking for Matrix
Sum of 0 to 1: Not a risk factor	0
Sum of 2 to 5: Low risk factor	**1**
Sum of 6 to 10: Moderate risk factor	2
Sum of 11 to 14: High risk factor	3

Notes:
1 Select the applicable risk impact factors based on the project's density, location, and water supply variables.
2 Select the corresponding value on the table.
3 Sum the values.
4 Select the appropriate matrix ranking based on the sum of risk factors.
5 Enter the Wildfire Ignition Risk Assessment ranking on the Wildfire Ignition Risk Matrix.

Step 3. Mitigation Level Ranking: High = **3**

TABLE 3.2-18
CENTENNIAL SPECIFIC MITIGATION: WILDFIRE
IGNITION RISK REDUCTION MEASURES
(The Project will Implement all of the Measures Described in this Table)

Wildfire Ignition Risk Mitigation Measure[1]	Category	Ranking for On-site Ignition Risk	Ranking for Off-site Ignition Risk[2]
Siting projects to maximize the role of low-flammability landscape features to buffer the development from fire spread	Project siting	2	2
Limiting development along steep slopes and amid rugged terrain (decreases exposure to rapid fire spread and increases accessibility for firefighting)	Project siting	2	1
Placement of development close to existing or planned ingress/egress and designated evacuation routes (for efficient evacuation while allowing emergency access and rapid fire suppression)	Project siting	1	1
Placement of projects close to adequate emergency services	Project siting	3	2
Increasing housing density and consolidated design, relying on higher-density infill developments as much as possible	Housing density	3	2
Avoidance and minimization of low-density exurban development patterns or leapfrog-type developments	Housing density	3	0
Decreasing the extent and amount of "edge" or interface area that is adjacent to undeveloped wildlands	Housing density	3	2
Construction of additional points of ingress and egress and modification of evacuation routes	Ingress/egress	2	0
Undergrounding power lines	Infrastructure	3	3
Requiring fire-hardened communication to the project site	Infrastructure	1	0
Parking limitations to ensure roads are not clogged with parked vehicles	Infrastructure	1	1

TABLE 3.2-18
CENTENNIAL SPECIFIC MITIGATION: WILDFIRE IGNITION RISK REDUCTION MEASURES
(The Project will Implement all of the Measures Described in this Table)

Wildfire Ignition Risk Mitigation Measure[1]	Category	Ranking for On-site Ignition Risk	Ranking for Off-site Ignition Risk[2]
On-site water supply/storage to augment ordinary supplies	Infrastructure	2	2
Fire hardening structures and homes beyond what is required in applicable building codes (resistance to heat, flames, and embers)	Construction features	2	1
Creation of buffer zones and defensible space within and adjacent to the development	Vegetation management/FMZ / defensible space	3	2
Ensuring that vegetation will not touch structures or overhang roofs	Vegetation management/FMZ / defensible space	2	1
Structure legal obligations so that defensible space measures are retained over time	Vegetation management/FMZ / defensible space	1	1
Enhanced communication to the project population about emergency evacuation plans and evacuation zones[4]	Training	1	0
Mitigation Rating Sum		35	21

Notes : FMZ = Fire Management Zone.
1 Potential mitigation measures and design alternatives that may reduce wildfire risk impacts (not exclusive).
2 Potentially impacting existing structures in proximity to the new development.

Centennial Specific Sum of On-site Mitigation Measures	Ranking for Matrix
Sum of 0 to 3: No significant reduction of ignition risk	0
Sum of 4 to 13: Low reduction of ignition risk	1
Sum of 14 to 24: Moderate reduction of ignition risk	2
Sum of 25 to 35: High reduction of ignition risk	**3**

4 While evacuation communication may not on its face seem to play a role in reducing ignition risk, the practice of regular communication keeps residents engaged in the preparedness process and more aware of wildfire hazards/risks and their role in prevention and response. See the points below from the U.S. Fire Administration.

- When residents are informed about potential wildfire threats early, they have time to prepare their homes, gather essential items, and make informed decisions about evacuation, reducing the likelihood of rushed actions that could lead to accidental ignition.
- Active communication with residents helps build awareness of fire risks, encourages proactive measures like defensible space creation, and fosters a sense of preparedness within the community.
- By regularly communicating evacuation procedures and the consequences of not evacuating promptly, residents are more likely to heed warnings and take necessary actions to protect themselves and their property.

TABLE 3.2-18
CENTENNIAL SPECIFIC MITIGATION: WILDFIRE
IGNITION RISK REDUCTION MEASURES
(The Project will Implement all of the Measures Described in this Table)

Wildfire Ignition Risk Mitigation Measure[1]	Category	Ranking for On-site Ignition Risk	Ranking for Off-site Ignition Risk[2]
Centennial Specific Sum Of Off-Site Mitigation Measures		**Ranking for Matrix**	
Sum of 0 to 2: No significant reduction of ignition risk		0	
Sum of 3 to 7: Low reduction of ignition risk		1	
Sum of 8 to 13: Moderate reduction of ignition risk		2	
Sum of 14 to 20: High reduction of ignition risk		**3**	

Notes:
1 Select the applicable wildfire ignition risk mitigation measures based on the project's design (siting, density, ingress/egress, infrastructure, construction, and FMZ).
2 Select the corresponding ranking on the table for on-site or off-site ignition.
3 Sum the rankings.
4 Select the appropriate matrix ranking based on the risk factor ranking categories.
5 Enter the wildfire ignition risk mitigation measures ranking on the Wildfire Ignition Risk Matrix.

Enter the assigned ranking from each step into the risk assessment formula and sum.

3 (Hazard) + 1 (Ignition Risk) – 3 (Mitigation) = 1 (Off-site Ignition Risk)

Step 4. Wildfire Off-site Ignition Risk Level: 1 = Moderate

Once the matrix was used to identify the appropriate Hazard, Ignition Risk and Mitigation rankings for the Project, the rankings were entered as terms into the risk equation to determine the Off-site Ignition Risk ranking and the corresponding Off-site Ignition Risk Level.

Hazard + Ignition Risk – Mitigation = Off-site Ignition Risk

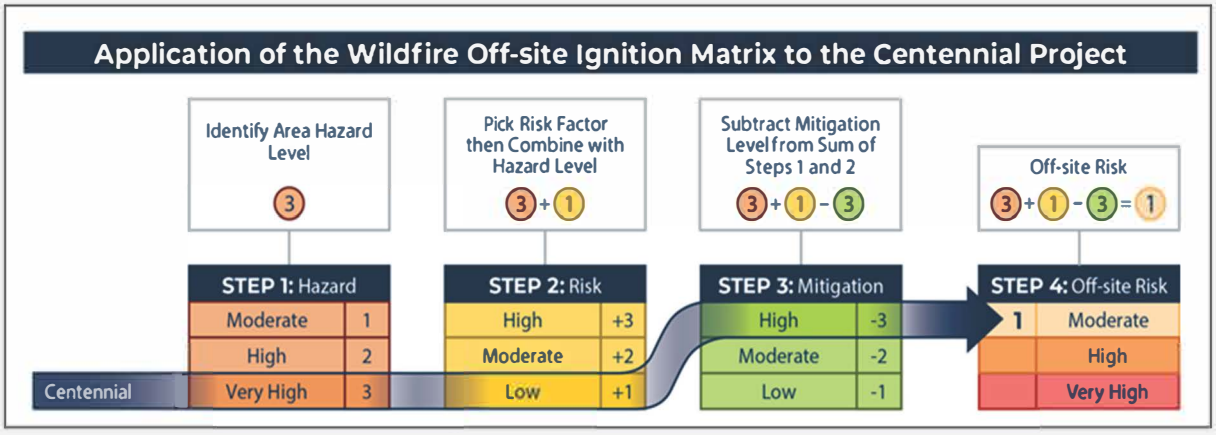
The risk results can be classified into the following categories:

TABLE 3.2-19
OFF-SITE IGNITION RISK LEVEL CATEGORIES

Ranking	Off-site Ignition Risk Level
WOIRL ≤ 1	Moderate
1 < WOIRL < 4	High
WOIRL ≥ 4	Very High
WOIRL = Wildfire	
Off-site Ignition Risk Ranking	**Wildfire Off-site Ignition Risk Level**
Ranking (1) ≤ 1	Moderate Risk
Moderate risk represents an acceptable level of risk based on the risk vs. mitigation evaluation. "Risk" is the potential damage a fire can do to the area under existing conditions, accounting for any modifications such as fuel reduction projects, defensible space, and ignition-resistant building construction (CAL FIRE 2023). "Hazard" is based on the physical conditions that create a likelihood and expected fire behavior over a 30- to 50-year period without considering mitigation measures such as home hardening, recent wildfire, or fuel reduction efforts (CAL FIRE 2023).	

Figure 8 provides a graphical representation of following the four steps to determine the Wildfire Off-site Ignition Risk Level.

FIGURE 8



Moderate risk represents an acceptable level of risk based on the risk vs. mitigation evaluation.

High risk represents a potential cause for concern and the possible need for additional mitigation measures to reduce to a Moderate level unless a specific site condition or overriding determination is justified and found acceptable to the local fire authority.

Very High risk would be unacceptable and subject to additional mitigations to reduce the potential ignition risks to Moderate (or High with overriding acceptance from the fire authority).

Based on the site-specific analysis and considering the various input factors for the fire environment, the Project's hazard, ignition risk and mitigation measures, the overall Project Wildfire Off-Site Ignition Risk Level is considered to result in a Moderate level, as shown below and within Appendix J (Dudek, 2025).

Hazard + Ignition Risk – Mitigation = Off-site Ignition Risk

Step 1. Hazard Ranking: High Fire Hazard Area = 2

Step 2. Risk Factor Ranking: Moderate = 2

Step 3. Mitigation Level Ranking: High = 3

Step 4. Wildfire Off-site Ignition Risk Level: 1 = Moderate

Moderate risk represents an acceptable level of risk based on the risk vs. mitigation evaluation. Note the description below from the USDA Forest Service[5] regarding moderate fire danger:

When the fire danger is "moderate" it means that fires can start from most accidental causes, but the number of fire starts is usually pretty low. If a fire does start in an open, dry grassland, it will burn and spread quickly on windy days. Most wood fires will spread slowly to moderately. Average fire intensity will be moderate except in heavy concentrations of fuel, which may burn hot. Fires are still not likely to become serious and are often easy to control.

Cal Fire[6] provides an explanation on the differences between the various fire hazard ratings:

Classification of a wildland zone as Moderate, High or Very High fire hazard is based on the average hazard across the area included in the zone, which have a minimum size of 200 acres. In wildlands, hazard is a function of modeled flame length under the worst conditions and annual burn probability. Both these factors generally increase with increasing hazard level, but there may be instances where one value is Very High and the other is low, pushing the overall hazard into a more intermediate ranking. On average, both modeled flame length and burn probability increase by roughly 40-60% between hazard classes. Classification outside of wildland areas is based on the fire hazard of the adjacent wildland and the probability of flames and embers threatening buildings.

As described above, this indicates that a moderate ranking would be significantly lower flame lengths and burn probabilities than high or very high, thus with the proposed mitigation measures for the project's building in these areas, an acceptable level of risk.

5 USDA Forest Service, National Fire Danger Rating System, https://www.fs.usda.gov/detail/inyo/home/?cid=stelprdb5173311

6 Cal Fire, Fire Hazard Severity Zones FAQs, https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/fire-hazard-severity-zones

Firebrand Hazard and On-Site and Off-Site Risk

To evaluate whether new development in the WUI may result in offsite wildfires due to airborne ember (firebrand) production from onsite structure fire, this section examines firebrand dynamics, including how they are produced, transported, and how they ignite vegetation. In addition, the potential for ember production caused by structure fires and subsequent offsite ignitions is discussed.

Firebrand Generation, Transport, and Ignitions

Airborne embers, commonly referred to as firebrands, are burning materials which become airborne and carried for some distance in an airstream (Babrauskas 2020). Firebrands can serve as ignition sources through a phenomenon defined as spotting. Spotting occurs when firebrands are lofted into the air and ignite small fires called spot fires ahead of the main fire front when landing on a receptive fuel bed. Wildfire spotting is multi-faceted and occurs at varying levels of severity. Main drivers of wildfire spotting include (NWCG, 2021):

- Firebrand Source, Size, and Amount
- Firebrand travel distance
- Probability of ignition where firebrands land

Firebrands pose significant risk to communities. In extreme cases, California chapparal has been found to cause ignitions up to four miles away from the main front of an ongoing wildfire. However, these risks can be mitigated through the implementation of fire-resistant construction methods, properly maintained landscaping, Fuel Modification Zones, and ignition resistant landscaping (NIST, 2022). While the majority of home losses in the WUI are due to firebrands (NIST, 2021), a review of structural loss data highlights that modern master-planned communities are extremely unlikely to be destroyed by wildfires (CBIA, 2022). Of all wildfires in California since 2017, less than 1% of structures lost were structures built after 2010 (CBIA, 2022). Structural hardening requirements mandated through Chapter 7A of the California Building Code and implementation of adequate defensible space at the community and parcel scale are designed to effectively mitigate structural ignition risks from firebrands.

The following section discusses wildfire hazards caused by firebrands. Factors influencing firebrand production, transport, and ignition are highlighted, emphasizing the importance of fire-resistant construction methods and defensible space.

Firebrand Transport

Firebrand transport is the most commonly studied component of firebrands. This is likely because the processes behind firebrand transport are the simplest to model. In addition, understanding maximum firebrand transport provides important information for firefighters and emergency managers during wildfires. Models predicting maximum firebrand transport or spotting distance account for factors such as fuel type, tree height and crown width, wind speed, spotting location (ex. Ridgetop, valley) (Albini 1979, Chase 1981,

Rothermel 1983, Albini 1983, Chase 1984). Before firebrands can travel downwind in the atmospheric air current, they first must be lofted into the air. Ember lofting leads to firebrands and is influenced by fire intensity, fuel loading, and terrain features (NWCG, 2021). Once airborne, firebrand transport distance is mainly driven by wind speed and firebrand size (Manzello and Suzuki, 2023).

Firebrand Generation

In extreme cases, fire spread by firebrands can become the dominant form of fire spread and overwhelm fire suppression efforts. In order for firebrands to pose a hazard, they must have had sufficient initial size to sustain enough heat during transport to ignite a receptive fuel bed (Babrauskas 2020). Firebrand size is influenced by an array of factors including fuel type, fire intensity, and wind speed (Adusumilli and Blunck, 2023, Suzuki and Manzello, 2022). However, the complex nature of firebrand production and spread remains relatively unstudied. Limited research exists regarding processes of firebrand generation and its relation to the source materials which produce firebrands (Manzello and Suzuki, 2023). The vast majority of available of firebrand research is focused on transport of firebrands, with little research focused on the burnout process of firebrands following generation and transport.

Unlike firebrand transport processes, which can be modeled, no computer models currently exist for predicting firebrand generation. Instead, research into the topic relies on experimental studies. In general, greater fire intensity is found to generate more firebrands (Thomas et al. 2021). Fuel load, or the total amount of combustible fuels, has been found to be related to the severity of firebrand production. The total number of burning firebrands has been observed to increase alongside an increase in the height of burning trees or shrubs (Adusumilli et al., 2021).

Firebrand Ignition

Several properties influence a firebrand's ignition potential upon landing. Firebrand characteristics such as mass and size, thermal degradation or burnout, and environmental conditions (i.e. weather) greatly influence the potential for new ignition caused by firebrands (Bearinger et al., 2020). For example, firebrands may burnout completely in the atmosphere, or, after landing, undergo glowing combustion and die out, smolder, or transition into flaming and grow into a larger fire (Manzello et al, 2021). While the relationship between firebrand characteristics and ignition potential is understudied, several factors are known to mitigate structure losses from firebrands in the WUI. It is known from general understanding of thermodynamics that the condition of the receptive fuels, both urban and natural, is a significant predictor of new ignitions from firebrands.

Ensuring code compliant defensible space surrounding structures has been found to mitigate structure losses from firebrands in the WUI. Defensible space is often created in the form of Fuel Modification Zones, which create buffers between natural vegetation and structures. In many jurisdictions, Fuel Modification Zones within 30 feet of structures are required to be irrigated, further limiting the potential for firebrand ignitions. New research has shown that vegetation, decorations, and additional flammable material attached to the

house are of the most important factors contributing to structure ignition from firebrands (IBHS, 2023). Research has shown that firebrands more easily collect around the edges of structures and can significantly contribute to structure ignitions if fuels are readily ignitable (IBHS, 2023). In response to these findings, CAL FIRE has created a new defensible space zone, Zone 0, which requires the first 5 feet from structures to be devoid of combustible materials.

The condition of building materials themselves greatly determines structure losses from firebrands (NIST, 2022). Studies suggest that building construction is as, if not more, important than defensible space in determining structure losses in the WUI (Syphard et al. 2017). As mentioned previously, firebrands are responsible for the majority of all structure losses in the WUI. Chapter 7A of the California Building Code has been developed through partnership with experimental research into structure losses. Incorporating the building construction and design requirements outlined in Chapter 7A (ex. Roof type and assembling, exterior decking, siding materials, etc.) have been proven to mitigate structure losses from firebrand ignitions (NIST, 2022).

Firebrand Production From Urban Fuels

The following sections discuss the potential for firebrand production from structure fires in modern master-planned communities, noting the effectiveness of building design features and fire safety measures in reducing the risk producing firebrands from onsite wildfires. Historical data on wildfires caused by structure fires are also presented, identifying common characteristics associated with wildfire incidents caused by structure fires.

Historical Wildfires Caused by Structure Fires

CAL FIRE maintains fire history data throughout the state and includes ignition causes when available (CAL FRAP, 2023). According to the historical fire record, wildfires caused by structure fires account for only <1% percent of all wildfires where the cause is known. Wildfires by cause in California is summarized below in Table 3.2-20.

TABLE 3.2-20
WILDFIRE OCCURRENCES IN CALIFORNIA BY CAUSE

Fire Cause	Frequency	Percent of All Causes
1 - Lightning	3483	22%
9 - Miscellaneous	3458	22%
2 - Equipment Use	1325	8%
7 - Arson	945	6%
5 - Debris	757	5%
10 - Vehicle	534	3%
11 - Powerline	444	3%
4 - Campfire	391	3%
3 - Smoking	337	2%
8 - Playing with fire	192	1%
18 - Escaped Prescribed Burn	103	1%
6 - Railroad	78	<1%
15 - Structure	**27**	**<1%**
19 - Illegal Alien Campfire	17	<1%
16 - Aircraft	15	<1%
13 - Non-Firefighter Training	11	<1%
12 - Firefighter Training	5	<1%

Source: CAL FIRE FRAP, 2024
Note: Does not include wildfires with Unknown cause

Through a detailed assessment of wildfires caused by structure fires, clear patterns and characteristics related to community design and the surrounding landscape are identified. These include:

- Wildland Urban Intermix stye development with substantial vegetation surrounding structures.
- Limited setback from wildland vegetation with structures located in close proximity to unmaintained natural vegetation.
- Adjacent wildland vegetation often resembles heavy fuels. Vegetation surrounding structures is rarely herbaceous.
- Surrounding terrain is often steep with structures located on steep slopes.
- Structures are often positioned atop slopes.
- Development can be described as rural, with structures located far from existing communities or fire stations.
- Structure age is considered old.

Appendix C of Appendix J provides a graphical depiction of historical wildfires caused by structure fires. These occurrences exemplify many or all of the characteristics identified above. It is important to note that the Project does not share these characteristics and instead features a clustered master plan design with code compliant design features that minimize the potential for onsite structure fires to result in offsite ignitions. The Project's development footprint does not include unmaintained vegetation near structures. Structures would be constructed in accordance with the latest building code requirements for fire safety and each structure would be equipped with automatic interior fire sprinklers. Development edges feature one, continuous interface between development and offsite grassland fuels buffered by annually maintained Fuel Modification Zones. Planned development pads are not located on steep terrain or on ridgelines. Further, the Project would include three onsite fire stations with an optional fourth as determined necessary by LACoFD to ensure rapid response to potential onsite structure fires. As designed, the Project does not include factors that increase the potential for offsite ignitions caused by onsite structure fires.

Potential for Firebrand Production from Structure Fires in Modern Master Planned Communities

It is possible for structure fires to produce firebrands when the structures are assembled with combustible materials (Manzello and Suzuki, 2023). However, firebrand production from structure fires is highly dependent on fire safety features, building construction, and structure fire intensity.

The installation of Interior Automatic Fire Sprinklers is understood as the single most effective tool for extinguishing structure fires in their early stages (NFPA, 2021). Structural fire suppression aims to extinguish fires early or contain the fire to its original point of origin without spreading to additional portions of the structure. In buildings equipped with automatic fire sprinklers, 95% of fires were confined to their room of origin, a 24% increase compared to buildings without automatic fire sprinklers. In addition, structure losses have been reduced by up to 68% when equipped with automatic fire sprinklers (NFPA, 2021). It can be concluded that firebrand production from structure fires is likely to occur when the structure and its exterior become engulfed in flames. When fires are confined to the interior of the structure, it is not likely that firebrands would escape its interior. Therefore, automatic fire sprinkler systems are an effective way to prevent firebrand production from structure fires.

As with vegetative fuels, characteristics of structure fuels influence ember production, transport, and offsite ignitions. Heydayati et al. (2020) found that a modern wall assembly utilizing fiber cement siding produced 28.6 percent less firebrands under high winds than a wall assembly utilizing cedar siding. Suzuki and Manzello (2016) found that firebrands produced by cedar siding had large projected areas and low mass that caused them to be easily lofted long distances under applied wind as compared to assemblies with only studs and sheathing. Roofing characteristics have been observed to substantially influence firebrand production from structure fires, specifically, avoiding wooden roofing assemblies. Wood-shake roof shingles are notorious for producing large firebrands that can travel extensive distances. The maximum spotting distance recorded from untreated wood shake

roofs was 8 miles (Wilson 1962). This figure stemmed from a large-scale conflagration known as the Bel Air Fire that created significant convective air currents capable of lofting firebrands far in advance of the flaming front. It can be concluded that constructing buildings with fire-resistant building materials reduces the potential for ember production from structure fires.

As described above, the potential for firebrand production from structure fires is influenced by fire safety building design features, building construction, and structure fire intensity. Modern master planned communities like the Centennial Project do not include design features that are likely to contribute to high intensity structure fires that may ignite offsite wildfires.

All Project structures would be equipped with interior automatic fire sprinklers which have proven to effectively keep fires from spreading beyond their point of origin (NFPA 2021). Therefore, if they do occur, structure fires are unlikely to reach high intensities that may result in active combustion of the entire structure and related firebrand production. In addition to interior fire sprinklers, fire response time plays a large role in preventing extreme losses during structure fires. Buffington and Ezekoye (2019) found that fire response times were strongly correlated with extreme damage to at least one story of a structure. The Project's planned onsite fire stations are designed to ensure quick fire response in the event of a structure fire occurring onsite. Quick fire fighter response at the Project is likely to reduce the severity of structure fires leading to a decrease in firebrand production.

As described, greater fire intensity is found to increase firebrand production. In an urban environment, fire intensity and fire suppression difficulty increase dramatically when multiple structures are burning simultaneously. This phenomenon is referred to as an urban conflagration when offsite wildfires encroach upon communities and destroy multiple structures in one event. Code compliant master planned communities such as the Project are designed to prevent the occurrence of urban conflagration as proven in multiple studies (FEMA, 2023). Code compliancy across structures, fire department access, and community design create a layered approach towards reducing the potential for conflagrations. Preventing conflagrations, started by either offsite or onsite fires, and confining structure fires to their structure of origin is influential towards decreasing the amount of firebrands produced from structure fires.

While design features of modern master planned communities are largely designed to prevent losses to structures from wildfires originating offsite, the same features can be concluded to prevent losses to offsite resources caused by structure fires originating onsite. In the scenario of a structure fire, ignitions to neighboring structures are effectively mitigated through code-compliant ignition-resistant building construction which significantly reduces structural ignition through features such as dual pane windows, non-combustible siding, and Class A non-combustible roofing, among others. In addition, ignition resistant landscaping achieved through maintained Fuel Modification Zones including the implementation of Zone 0 Ember Resistant Zone within the first 5 feet of structures further

reduces the potential for spot fires caused by structure fires to ignite adjacent structures and vegetation.

Risk of Post-fire Downslope Flooding or Landslides

As described in the 2019 EIR, portions of the Project site are subject to landslides, flooding, and mudflows. As described in Section 5.1 of the 2019 EIR, areas that were identified as having high potential for landslide in proximity to Oso Canyon would be completely avoided for development and would be designated as open space. As further described in Section 5.2 of the 2019 EIR, portions of the Project site are located within a 100-year flood zone, however, as required by MM-2-3, habitable structures would not be located within 100-year floodplain areas on site. Additionally, the Project would include on site basins near slopes in excess of 25% to capture mudflows that may result on site.

Slope failures, mudflows, and landslides are common in areas where steep hillsides and embankments are present, and such conditions would be exacerbated in a post-fire environment where the vegetative cover has been removed. Vegetation plays a vital role in maintaining existing drainage patterns and the stability of soils. Plant roots stabilize the soil, and leaves, stems, and branches intercept and slow water, allowing it to percolate into the soil more effectively. Removal of surface vegetation reduces the ability of the soil surface to absorb rainwater and can allow for increased runoff that may include large amounts of debris and mudflows. If hydrophobic conditions exist post-fire, the rate of surface water runoff is increased since water percolation into the soil is reduced (Moench and Fusaro 2012). The potential for surface runoff and debris flows, therefore, increases significantly for areas recently burned by large wildfires (Moench and Fusaro 2012). The most recent fire burning in the vicinity of the Project site (within 1 mile) occurred in May of 2007 (Gorman Fire), which burned west of the property and west of I-5. Since the occurrence of those fires, vegetation has rebounded and slopes have been restabilized.

While vegetation management activities associated with the Project would reduce fire risk at the site, vegetation removal because of vegetation management could result in changes to drainage patterns and slope stabilization. Caution must be used to avoid causing erosion, ground (including slope) instability, or water runoff due to vegetation removal, vegetation management, maintenance, landscaping, or irrigation. This would be accomplished through HOA landscape plan reviews, landscape contractor monitoring of irrigation components, adherence to fuel modification plan, and annual (or more often as required by County Fire) landscape and fuel modification zone inspection and maintenance conducted by the Project HOA.

The FMZs would also function to reduce fire behavior and intensity as determined by the fire behavior modeling detailed in the WSP. As described above, the Project would include several features and implement several fire hardening measures that would reduce fire risk at the site. As a result, if fire were to occur, it is unlikely it would result in extreme fire severity and post-fire slope instability due to the lack of available fuels and fire protection measures.

Analysis of Proposed Project Modifications and Effect on Wildfire Risk

As described in the Project Description, the proposed modifications to the Approved Project would result in some changes to the 2019 EIR Project including modifications to the internal circulation system and the addition of battery storage as a conditionally permitted use, and the addition of microgrid infrastructure as a permitted use.

Modifications to the circulation system, site access, road dimensions, road connectivity, and other standards related to fire apparatus access are consistent with all applicable roadway and a fire code standard. All interior roads must comply with all fire apparatus access road standards, including requirement that all interior roads with a fire hydrant be constructed to a minimum unobstructed road width of 26 feet, exclusive of shoulders, all roadways that provide parking must provide a minimum clear width of not less than 34 feet for parking on one side and 42 feet for parking on both sides. Modifications to the internal roadway system would not result in any changes to the impacts related to wildfire risk compared to the 2019 EIR.

Utility-scale battery storage is being added as a conditionally permitted use in commercial, business park, school, utility, IC, ad R/E land uses to support the energy demands of the Project. Ignition risks associated with Battery Energy Storage System (BESS) facilities include thermal runaway, transformer failure (sending sparks, hot materials out in any direction), electrical transmission line malfunction, malfunction of substation components, vehicle use (heated exhausts in contact with vegetation resulting in ignition), and hot works equipment (gas or electric powered hand tools that may result in sparks, flames, or excessive heat and may result in vegetation ignition). The risk of fires associated with the latest battery technology that meets UL 9540A testing requirements is low (NFPA 2016; UL 2018). The components of a battery energy storage system would be purchased from vendors whose equipment meets Underwriters Laboratories (UL) standards well as applicable fire codes, as required by the LACoFD. These standards include specific requirements for design, materials, labeling, and testing of components to deem a product safe. Relevant here for battery energy storage systems are UL 1973 for stationary batteries, UL 1642 for lithium batteries, UL 1741 for inverters/controllers/software, and UL 9540A test method for evaluating fire propagation in battery energy storage systems. The components of the battery energy storage system would meet each of these standards and any other applicable standards at the time of the application of the building permit. In particular, the battery units and containers would be required to undergo UL 9540A (Standard for Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems) testing. The full-scale fire testing of the batteries would be performed by an approved 3rd party per the latest UL9540A standard. Additionally, on-site battery storage facilities would be equipped with monitoring and control systems that would prevent and/or control battery cell malfunctions. Compliance with applicable regulatory standards ensures that the risk of fires that escape built-in containment and suppression features associated with the latest battery chemistry and technology that meets UL 9540A testing requirements is low.

Conclusion

As discussed above, the Project would be located in or near state responsibility areas or land classified as very high fire hazard severity, and it would introduce approximately 50,000 residents into these areas, which could exacerbate potentially significant wildfire impacts. However, the Project's proposed development would not be placed in an area characterized by high-risk topography and vegetation. Moreover, the Project would be developed as fire hardened, modern master planned community with a clustered, interface design and would comply with current state-of-the-art, ignition-resistant construction standards for all new residential, non-residential, and public facility buildings meeting Chapter 7A of the California Building Code, Title 26 of the County of Los Angeles Building Code, and County Fire requirements. These standards require, among many other measures, fire-resistant roofing to resist ignition from embers or building-to-building fires, vent covering and opening limitations to avoid ember intrusion, noncombustible or ignition-resistant exterior walls, ignition-resistant eaves, and porch ceilings, insulated windows and exterior doors, fire-resistant exterior decks and walkways, and ignition-resistant under-flooring and appendages. These standards have proven to substantially reduce the risk of buildings catching fire or spreading fires during a wildfire event. The Project would incorporate FMZs ranging 100-200 feet that modeling demonstrates would protect the Project site from offsite wildfires, limit the spread of onsite fires to offsite locations, and provide access to firefighters and fire-fighting equipment to suppress both onsite and offsite fires. Project buildings would be constructed of fire-retardant materials and indoor fire sprinkler systems thus reducing ember generation in the event of a structure fire that could threaten onsite and offsite resources. The Project would provide three, and up to four, fully equipped fire stations to ensure adequate fire service response times. The Project would have a sufficient water supply to serve fire suppression needs and would be constructed with code compliant fire hydrant systems with adequate water flows to fight fire. The Project's code compliant internal circulation system and parking restrictions would ensure that firefighting apparatus would have appropriate access to, in, and around the Project site as necessary to provide fire suppression services, and the Project would provide sufficient access points to ensure safe and timely ingress and egress to and from the Project site to serve the needs of both first responders and potential evacuees. Project CC&Rs and HOA enforcement authority, combined with regulatory oversight, would ensure that Project FMZs and fire-safe landscaping are properly and timely maintained over the life of the Project and would ensure the implementation of a communitywide fire-safe education program to ensure that Project occupants are fully informed of their fire-related maintenance obligations and how to respond to a fire emergency, should one occur. Project implementation of a project-specific CFPP and Fuel Modification Plan, compliance with annual fuel modification maintenance and inspection code requirements, and compliance with regulatory restrictions limiting development in floodplains and steep terrain and ridgelines would further ensure that Project would not cause significant risks related to downslope or downstream flood or landslides. To ensure ongoing maintenance of Project FMZs, adequate access to the site, and timely emergency response necessary to reduce this impact to less than significant level, the Approved Project with Proposed Modifications would implement mitigation measures **MM 3-7, MM 3-8, MM-3-9, MM 16-2, MM 16-3,** and **MM 16-4** from the 2019 EIR. With implementation of such mitigation measures the Approved Project Project with Proposed

Modifications would not constitute a dangerous fire hazard or otherwise expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires, including as a result of inadequate access, inadequate water and pressure to meet fire flow standards, downslope or downstream flooding or landslides, runoff, post-fire slope instability, or drainage change, and this impact would be **less than significant.**

To promote enforcement of the CC&Rs, the Settlement Agreement requires that the governing documents of the Master HOA vest the governing board of the Master HOA with authority to impose fines on any homeowner who violates any provision of the CC&R related to fire safety requirements. Moreover, the HOA governing documents must establish a schedule of reasonable monetary penalties to be assessed by the Master HOA against any homeowner that violates any provision of the CC&Rs related to fire safety requirements. In addition, the HOA governing documents must make the Master HOA responsible for the long-term funding and ongoing maintenance of private roads and fire protection systems, including fire sprinklers and private fire hydrants, fuel modification vegetation management in Project common areas, including but not limited to roadsides (including a minimum of 20 feet clearance on each side of roads within the Project development footprint adjacent to open space areas), open space and landscape areas, and fuel modification zones. In addition, the Settlement Agreement obligates the Master HOA to establish a reverse 9-1-1 system capable of contacting every listed telephone number in the community by computer at a rate of at least 250 calls per minute. To fund these obligations, the Settlement Agreement requires that the Master HOA be authorized to assess on each Project dwelling unit an ongoing, permanent fee, tax, or assessment in the total cumulative amount for the Project of no more than $500,000 per year, inflation adjusted, with a presumptive pro-rata allocation of $26 per dwelling unit, which revenues the Master HOA must disperse consistent with the Settlement Agreement's required FPP.

Per the required FPP, the Master HOA must also establish a Fire Protection Education Committee to promote education and tools that provide information to Project homeowners about the Project's overall fire safety requirements, as described in the FPP, and about each homeowner's individual obligations thereunder. In addition, the FPEC must promote education programs and tools that provide information to homeowners about wildland fire ecology, management, protection and fire prevention, and it must coordinate with LACoFD to identify opportunities for improvement in all areas of wildland fire communication, education, protection and prevention. The Settlement Agreement requires that the HOA's governing documents obligate the FPEC to prepare and implement a community-wide fire education program based on the National Fire Protection Association's (NFPA) Firewise Communities program and designed to establish the Project as a NFPA Firewise USA site and to fully educate Project homeowners of their responsibilities under the FPP.

The Settlement Agreement also requires the Project to establish a Good Neighbor Firewise Fund of an inflation-adjusted $500,000 annually, which provide grants to need-based applicants to be awarded by the CMG to aid communities with a population of less than 100,000 located within 15 miles of the boundaries of Tejon Ranch in order to reduce off-site fire risks and increase fire prevention, protection and response capabilities. The Settlement

Agreement authorizes the CMG to review applications for the fund and award grants to fund the following activities:

- Updating planning documents and zoning ordinances, including general plans, community plans, specific plans, local hazard mitigation plans, community wildfire protection plans, climate adaptation plans, and local coastal programs to protect against the impacts of wildfires;
- Developing and adopting a comprehensive retrofit strategy;
- Funding fire-hardening retrofits of residential units and other buildings;
- Reviewing and updating the local designation of lands within the jurisdiction as very high fire hazard severity zones;
- Implementing wildfire risk reduction standards, including development and adoption of any appropriate local ordinances, rules, or regulations;
- Establishing and initial funding of an enforcement program for fuel and vegetation management;
- Performing infrastructure planning, including for access roads, water supplies providing fire protection, or other public facilities necessary to support the wildfire risk reduction standards;
- Partnering with other local entities to implement wildfire risk reduction;
- Updating local planning processes to otherwise support wildfire risk reduction;
- Completing any environmental review associated with the listed activities;
- Covering the costs of temporary staffing or consulting needs associated with the listed activities;
- Implementing community-scale risk reduction programs to become Firewise USA sites;
- Implementing resiliency plans such as resiliency centers with stable electricity supplies (e.g., microgrid, solar, and battery equipment) available to residents during times of power shutdowns or other emergencies; and
- Other fire-related risk-reduction activities that may be approved by the CMG Board.

Together, the Project applicant's obligations under the Settlement Agreement will further reduce fire risks resulting from the Project.

Threshold 2.2-2 If located in or near state responsibility areas or lands classified as Very High Fire Hazard Severity Zones, due to slope, prevailing winds, and other factors, would the project exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

The eastern portion of the Project site is mapped in a moderate and high FHSZ in an SRA and the western portion of the site is mapped as a VHFHSZ in SRA. The Project would include the development of a large-scale community which would include residential units, commercial uses, institutional/Civic uses, schools, commercial recreation, parks, open space, streets, and utilities. As described in Section 5.9 of the 2019 EIR, the Project is anticipated to introduce approximately 57,150 people to the Project site. The Project would introduce this new population in an area that has been historically subject to wildfire. The increased number of people residing at the Project site and increased human activity on the Project site and surrounding area could increase the potential for accidental ignitions or exacerbate wildfire risks. Project construction activities associated with the Project would introduce potential ignition sources related to construction activities, construction equipment, and construction-related vehicle use. During operation, the Project would introduce new fuel sources to the Project site through the construction of new structures and associated landscaping. Additionally, the Project would introduce a new population to the Project site and homes in the WUI. As described further in Section 3.2.7, research has suggested that growth of the wildland-urban interface has resulted in more wildland fire ignitions (Radeloff et al. 2018). The introduction of people to an area that is subject to wildfire could result in a potentially significant impact related to exacerbating wildfire risk, and thereby exposing people to pollutant concentrations from wildfire or the uncontrolled spread of a wildfire. However, determining the direct correlation between ignition risk and the increasing population in the WUI is challenging. For instance, there is no standardized approach to predict how many new ignitions might occur by adding approximately 50,000 people to the WUI, given the dynamic nature of wildfire risks and ignition factors. However, as evident from many studies, wildfire risk to structures and the potential for human-caused ignitions are not consistent across all forms of WUI development.

For example, both wildfire risk and ignition risk have been found to be higher where homes are located near or intermingle with vegetation prone to wildfire, such as in the Wildland-Urban Interface (WUI) (Radeloff et al., 2018; Theobald et al., 2007; Stewart et al., 2007; Sirca et al., 2007). Research indicates that "[t]he WUI, where housing density is low to intermediate, is a significant factor in most ignition maps," supporting the conclusion that rural or large-parcel housing carries a higher ignition risk compared to master-planned communities with more urbanized landscapes (Syphard and Keeley, 2015). As development expands closer to wildfire-prone vegetation, the potential for both vegetative ignition and wildfire increases. This relationship holds true not only for wildfire risks to structures but also for the likelihood of ignitions spreading offsite. In contrast, the potential for human-caused ignitions in higher-density developments with clear boundaries between urban and wildland areas (the WUI) is inherently lower, as these areas typically feature minimal or no wildfire-prone vegetation between structures and roadways. Therefore, relying solely on the

number of new residents in the WUI to assess increased wildfire ignition risk overlooks critical factors, including WUI form (Intermix vs. Interface), defensible space, Fuel Modification Zone requirements (such as roadside fuel reduction), emergency response capabilities, homeowner education, HOA enforcement of wildfire safety measures, adjacent wildland vegetation conditions, undergrounding of power lines, and other wildfire mitigation strategies. Factors that can exacerbate fire risk and impact level of exposure include topography, climate, vegetation, ignition potential, location of a site within the landscape, proximity to firefighting services, and fire risk reduction measures. These factors are described in the following sections.

Topography

As discussed under Section 3.2.7 proposed development areas are primarily located on flat to gentle rolling slopes, with roughly 80% percent of development occurring on slopes less than 15%. From a regional perspective, the Project site is located in the western extent of the Antelope Valley. This region exhibits much flatter terrain compared to the Tehachapi and San Gabriel ranges to the north and south, respectively. Further, the Project's proposed development areas are not located near topographic features such as substantial ridgelines or narrow canyons that may exacerbate fire severity. The Project would result in grading within the developed portions of the site, further reducing the sloped areas on the Project site proposed for development and fire risks associated with sloped topography.

Climate

As discussed under Section 3.2.7 the region is influenced by both the arid continental climate to the east and the moister Mediterranean climate to the west; therefore, the region is described as having a hot-to-cold and semi-arid-to-sub-humid climate. The region is subject to Santa Ana winds, that occur near the end of fire season during late summer and early fall. The Project Site is occasionally subject to strong Santa Ana wind events, which are dry, warm winds that flow from the higher desert elevations in the east through the mountain passes and canyons which increase in velocity as they converge through the canyons. Wildfire risk increases during Santa Ana wind events.

Vegetation

As discussed under Section 3.2.7 vegetation on the Project site primarily consists of grassland (76% of vegetative cover), mixed oak woodland (12% of vegetative cover) as well as scrub vegetation types (8% of vegetative cover). While this fuel type can burn intensely under strong, dry wind patterns, it does not produce the high fire intensity and fast-spreading wildland fires found within chaparral fuel types, which cover less than 1% of the site. The remaining cover on site (less than 4%) consists of disturbed or un-vegetated areas (roads, aqueduct, etc.), riparian scrub, and riparian woodland habitats. Grassland fuel types spread fire more rapidly compared to other fuels on site. However, due to the grazing program described above, these grassland fuel loads have been reduced.

Upon Project implementation, the Project would convert readily ignitable fuels to buildings and maintained landscaped areas. The proposed structures as part of the Project would be built in accordance with the most state-of-the-art, ignition-resistant construction standards and building codes required by the County and the State, including Chapter 7A of the Los Angeles County Building Code (Title 26, Chapter 7A), which requires that the buildings are resistant to ignitions from direct flames, heat, and embers. The Project would maintain open space uses throughout the Project site, with large open space areas within the western and southern portions of the Project site. While large open space would be in proximity to developed areas on the Project site, the Project would incorporate a 100-foot-to-200-foot fuel modification zones (FMZs) around the entire Project perimeter, which would provide defensible space and reduce fire intensity if ignition were to occur. Landscaping within the FMZs or Project landscaping throughout the site would include drought-tolerant, fire resistive trees, shrubs, and groundcovers. The planting list and spacing would be reviewed and approved by LACoFD, included on submitted landscape plans. The plantings would be consistent with LACoFD's Fuel Modification Plant Selection Guidelines (LACoFD 2021) Additionally, the Project would also include additional other fuel modification and landscaping requirements such as roadway fuel modification zones, stormwater basin vegetation management, and the prohibition of certain highly flammable plants which would further reduce the risk of fire ignition and spread.

Battery Storage

As discussed under Section 3.2.7, ignition risks associated with BESS facilities include thermal runaway, transformer failure (sending sparks, hot materials out in any direction), electrical transmission line malfunction, malfunction of substation components, vehicle use (heated exhausts in contact with vegetation resulting in ignition), and hot works equipment (gas or electric powered hand tools that may result in sparks, flames, or excessive heat and may result in vegetation ignition). The risk of fires associated with the latest battery technology that meets UL 9540A testing requirements is low. Components of the battery energy storage system would be purchased from vendors whose equipment meets Underwriters Laboratories (UL) standards. These standards include specific requirements for design, materials, labeling, and testing of components to deem a product safe. Relevant here for battery energy storage systems are UL 1973 for stationary batteries, UL 1642 for lithium batteries, UL 1741 for inverters/controllers/software, and UL 9540A test method for evaluating fire propagation in battery energy storage systems. The components of the battery energy storage system would meet each of these standards and any other applicable standards at the time of the application of the building permit. In particular, the battery units and containers would be required to undergo UL 9540A (Standard for Test Method for Evaluating Thermal Runaway Fire Propagation in Battery Energy Storage Systems) testing. The full-scale fire testing of the batteries would be performed by an approved 3rd party per the latest UL9540A standard. Additionally, the Project would be equipped with monitoring and control systems that would prevent and/or control battery cell malfunctions.

Project Siting

Planning and siting of a development project within the landscape determine can impact fire risk. As discussed under Section 3.2.7, the Project site and the surrounding vicinity have been subject to wildfires, most of which have been within the direct vicinity of the Project site, and some fires have occurred within the Project boundaries. Factors that contribute to the limited wildfire history at the Project site is believed to be largely due to the site's terrain, managed fuels, barriers to wildland fire spread, quick wildfire detection and response, the removal of fine fuels by cattle grazing and a lower risk for human-caused ignitions than for more urbanized areas off-site. Further, due to the position of SR-138 and its use as a fire break, wildfires encroaching onto the Project site from the south are unlikely to enter the interior of the site.

Proximity to Fire Stations and Fire Fighting Access

The County's General Plan includes a response time goal consistent with National Fire Protection Association (NFPA) standards (NFPA Standard 1720, 2020 edition). It should be noted that there are no national standards for response times to vegetation fires, but a 5-minute response and a 1.5-mile service radius is used in the County for typical urban response. According to these response standards, the current Fire Station distribution does not include a station that could respond according to the minimal proposed standards. However, as required by the 2019 EIR the Project Applicant/Developer shall provide land, convey title, and shall construct and equip, to the specifications and requirements of the LACFD, for up to four new Fire Stations to the LACoFD. The approved final plans and specifications for the Project shall identify locations of the fire stations. The LACoFD shall have final approval over the fire station site locations. The timing for the construction of the on-site fire stations shall be established by the LACFD dependent upon the phasing of development, with the first on-site fire station operational no later than the time the 1,000th dwelling unit is built on site (Mitigation Measure MM 16-3). Additionally, as required by the 2019 EIR, at buildout, the Los Angeles County Fire Department (LACoFD) fire stations shall be located such that response times to the Project site shall be 5 minutes or less for fire service responses and 8 minutes or less for the advanced life support (paramedic) unit responses within the Project site (Mitigation Measure MM 16-1). Appendix J of the 2019 EIR provides approximate locations of existing and proposed fire stations. Further, also required by the 2019 EIR, the Developer must pay developer fees in accordance with the LACoFD Developer Fee Program until such time as the Developer has conveyed an approved, operational fire station to LACFD, unless otherwise agreed to by the Developer and LACoFD in accordance with the LACoFD Developer Fee Program's land-in-lieu of fees provisions (Mitigation Measure MM 16-2).

Common measures for projected slower emergency response for residential structural fires includes the inclusion of additional firefighting resources closer to the assets and/or the use of interior fire sprinklers. Fire Stations in close proximity to assets result in reduced travel distance and correspondingly reduced response time. Conversely, interior sprinklers minimize the need for additional Fire Stations by extinguishing interior fire or extending the time for "flashover" of structure fires. This corresponds directly to enabling more time for

firefighting resources to arrive on site and begin attack. The Project is committed to providing a safe environment for residents and visitors of the proposed community. Therefore, the Project is consistent with County standards for emergency response and interior sprinklers.

As described above, the Project is located adjacent to regional transportation networks (ex. Interstate-5 and SR-138) and would provide five points of access to SR-138. With implementation of MM-16-2 (LACoFD Developer Fee Program), MM-16-3 (new fire stations), MM-16-4 (Law Enforcement Facilities Mitigation Fee) from the 2019 EIR, the Project would have adequate emergency services to serve the site. These fire stations would be located throughout the Project site with fast response to all planned structures in the case that an ignition occurs onsite.

Factors that reduce risk

The Project would introduce a new population and activities to a VHFHSZ and high FHSZ, and an area that is susceptible to wildfire, which could result in potentially significant impacts related to exacerbating wildfire risk and exposing Project occupants to wildfire or wildfire pollutants. However, as discussed under Impact Threshold 2.2-2 the Project would include several fire hardening design features and would implement several mitigation measures to reduce fire risk at the site. The Project would reduce fire risks during construction through the implementation of a project-specific CFPP, Fuel Modification Plan, and annual fuel modification maintenance and inspection.

As discussed under Threshold 2.2-1, master-planned communities built to modern ignition resistant standards provide passive fire protection that is highly successful at minimizing damage and loss of structures. The State Fire Marshal's statistics demonstrate that homes built to California Building Code standards adopted in Chapter 7A effectively reduce fire risks to homes built in the WUI and fire hazard severity zones. Remarkably, when those homes are built as part of a properly planned and mitigated master-planned community, like Centennial, the risk of significant structural loss is extremely low. Despite the headlines in recent years about the loss of homes to California wildfires, it has gone substantially unreported that no master-planned community built after the adoption of California Building Code Chapter 7A has suffered extensive structural losses as evidenced in the OSFM Property Loss Data.

Pollutants

Pollutant concentrations or exposure from a wildfire event near the Project site could occur if the wildfire is not suppressed soon after it starts. Smoke released during a wildfire event can have a detrimental effect on air quality and lead to health risks from smoke inhalation. Risks associated with pollutants at the Project site would be similar to or less than that experienced across southern California. As described above, the Project would include several features to reduce overall fire risk in the area and would not exacerbate wildfire risks and exposure to smoke inhalation. Accordingly, the Project would not worsen the

detrimental effect on air quality and health risks from smoke inhalation to users of the site or within the surrounding community.

As described above, the Project would result in a population increase at the Project site that have the potential to be exposed to pollutant concentrations from a wildfire event. In areas where the public might be experiencing wildfire smoke, the U.S. Environmental Protection Agency recommends that public health and air quality agencies provide advice on strategies to limit exposure, which include staying indoors, limiting physical activity, reducing indoor air pollution sources, effectively using air conditioners and air filters or cleaners, creating cleaner air shelters, and using respiratory protection appropriately. The most common advisory during a smoke episode is to stay indoors, where people can better control their environment. Whether at home or in a public space, indoor environments that have filtered air and climate control can provide relief from smoke and heat (EPA 2019).

Conclusion

As discussed above, the Project would be located in or near state responsibility areas or land classified as very high fire hazard severity, and it would introduce approximately 50,000 residents into these areas, which could exacerbate potentially significant wildfire impacts that could potentially expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire, a potentially significant impact. However, the Project's proposed development would not be placed in an area characterized by high-risk topography and vegetation. Moreover, the Project would be developed as fire hardened, modern master planned community with a clustered, interface design and would comply with current state-of-the-art, ignition-resistant construction standards for all new residential, non-residential, and public facility buildings meeting Chapter 7A of the California Building Code, Title 26 of the County of Los Angeles Building Code, and County Fire requirements. These standards require, among many other measures, fire-resistant roofing to resist ignition from embers or building-to-building fires, vent covering and opening limitations to avoid ember intrusion, noncombustible or ignition-resistant exterior walls, ignition-resistant eaves, and porch ceilings, insulated windows and exterior doors, fire-resistant exterior decks and walkways, and ignition-resistant under-flooring and appendages. These standards have proven to substantially reduce the risk of buildings catching fire or spreading fires during a wildfire event. The Project would incorporate FMZs ranging 100-200 feet that modeling demonstrates would protect the Project site from offsite wildfires, limit the spread of onsite fires to offsite locations, and provide access to firefighters and fire-fighting equipment to suppress both onsite and offsite fires. Project buildings would be constructed of fire-retardant materials and indoor fire sprinkler systems thus reducing ember generation in the event of a structure fire that could threaten onsite and offsite resources. The Project would provide three, and up to four, fully equipped fire stations to ensure adequate fire service response times. The Project would have a sufficient water supply to serve fire suppression needs and would be constructed with code compliant fire hydrant systems with adequate water flows to fight fire. The Project's code compliant internal circulation system and parking restrictions would ensure that firefighting apparatus would have appropriate access to, in, and around the Project site as necessary to provide fire suppression services, and the Project would provide sufficient access points to ensure safe

and timely ingress and egress to and from the Project site to serve the needs of both first responders and potential evacuees. Project CC&Rs and HOA enforcement authority, combined with regulatory oversight, would ensure that Project FMZs and fire-safe landscaping are properly and timely maintained over the life of the Project and would ensure the implementation of a communitywide fire-safe education program to ensure that Project occupants are fully informed of their fire-related maintenance obligations and how to respond to a fire emergency, should one occur. Project implementation of a project-specific CFPP and Fuel Modification Plan, compliance with annual fuel modification maintenance and inspection code requirements, compliance with UL 9540A BESS testing requirements, and compliance with regulatory restrictions limiting development in floodplains and steep terrain and ridgelines would further ensure that Project would not cause significant fire risks related to downslope or downstream flood or landslides. To ensure ongoing maintenance of Project FMZs, adequate access to the site, and timely emergency response necessary to reduce this impact to less than significant level, the Approved Project with Proposed Modifications would implement mitigation measures **MM 3-7, MM 3-8, MM-3-9, MM 16-2, MM 16-3,** and **MM 16-4** from the 2019 EIR. Additionally, in the case of a wildfire, Project occupants would be advised on strategies to limit exposure by their local health and air quality officials to reduce exposure to pollutants. With continued implementation of **MM 3-7, MM 3-8, MM-3-9, MM 16-2, MM 16-3,** and **MM 16-4** from the 2019 EIR impacts related to exacerbating wildfire risk and exposure of Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire would be **less than significant.**

Threshold 2.2-3 ***If located in or near state responsibility areas or lands classified as Very High Fire Hazard Severity Zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?***

Construction

During construction of the Project, short-term off-site infrastructure improvements (e.g., water, sewer and widening of SR-138) would result in temporary lane closures along the segment of SR-138 approximate to the Project site, which would impact access to I-5. Also, as the Project is a Specific Plan that will be developed in phases over many years, temporary lane closures of internal Project roadways used for evacuation may also occur due to development during each phase of the Project. If an evacuation of the Project site were to occur during the installation of the proposed on- or off-site improvements, use of SR-138 and internal Project roadways could be limited for evacuation of existing and Project populations, resulting in a potentially significant impact.

As required by the 2019 EIR, the Approved Project will prepare and implement a traffic management plan, as detailed in Mitigation Measure (MM)-10-5 in Section 5.10, Traffic, Access and Circulation, which requires the minimization of obstructions in traffic lanes, maintenance of emergency access throughout construction activities through methods such as the use of flag persons to minimize obstructions along SR-138, signage, scheduling of vehicle movements to ensure traffic flow, and limiting schedule of deliveries and truck traffic, among other requirements. During the construction of widening the SR-138, a minimum of

2 lanes would remain open. Temporary detours may be needed at several locations along the corridor where the proposed facility intersects the existing to avoid full closure of the highway. Construction staging would require that one lane of traffic in each direction is open to the public at all times; the anticipated construction staging would allow construction of new lanes adjacent to the existing lanes (either north or south of the existing roadway), allowing traffic to continue to use the existing lanes and then allow traffic to use the new lanes during construction of the remaining lanes over the existing roadway. With incorporation of MM-10-5 from Section 5.10 of the 2019 EIR, short-term construction-related impacts related to impairment of an emergency response or evacuation plan would be less than significant.

Operation

Long-term operation of the Project would introduce a permanent residential population to the Project site that could require evacuation in a wildfire emergency. The additional traffic generated by the Project's occupants in an emergency evacuation could contribute to congestion on the existing roadway system, which has the potential to substantially impair an adopted emergency response plans or emergency evacuation plans. The following discussion addresses this potential impact and consists of (1) a description of applicable evacuation plans and routes, (2) a summary of results from detailed evacuation modeling of the Project and nearby areas.

Evacuation Plans and Evacuation Routes

The County identifies wildland fires as a high-priority hazard (County of Los Angeles 2019a). The Project site is within the service area of LACoFD, which would provide emergency operation response to the Project site. More specifically, as discussed in Section 3.2.3, Environmental Setting and detailed further in Appendix H, the Project is subject to the Los Angeles County Operation Area Emergency Response Plan (OA ERP). Currently, the County does not have a Countywide evacuation plan; rather, evacuation procedures are outlined in the OA ERP. The County's Office of Emergency Management is responsible for maintaining the County/Operational Area Emergency Operations Center (EOC) in a state of operational readiness and would coordinate a centralized emergency operation for the OA in the event of an emergency/disaster in the unincorporated County or a multijurisdictional event. The County sheriff serves as the Director of Emergency Operations and would facilitate the EOC's emergency response, including evacuation. The County sheriff would also be responsible for law enforcement response during an emergency event. In an emergency, the EOC gathers, analyzes, and distributes information using the Standardized Emergency Management System (SEMS) to all responding agencies within the OA to support emergency response and coordinate mutual aid and evacuation. Additionally, the EOC provides resources during a disaster, such as public information, evacuation orders/routes, recovery programs, and mitigation to reduce future disasters.

As stated in the Los Angeles County General Plan Safety Element, evacuation routes are determined by emergency responders who decide at the time of the emergency the routes that should be used for evacuation after assessing the conditions and location of the

emergency to avoid endangering the lives of others or causing personal injury or death. Evaluating a route for safety and viability is situational, context-specific, and subject to change. Figure 12.9 of the County's Safety Element identifies roads that are public, paved, and through-ways, which may be used for evacuation if they are viable routes during an actual emergency. These evacuation routes are not all inclusive and may not be the most suitable routes since actual emergency events necessitate day-of-event conditions and risks assessments (County of Los Angeles 2022b). In the area of the Project site, SR-138 is designated as a potential evacuation route. If an evacuation warning or order is issued, the "Alert LA County" mass notification system would notify those who live and work in the County of the necessary information during emergency events via text, call, or email, such as disaster notifications and evacuation orders (County of Los Angeles 2018).

Evacuation routes for the Project would utilize the existing and internal Project roadways, which would connect evacuating vehicles to major transportation corridors, including SR-138 (east–west), I-5 (north–south), and SR-14 (north–south).

As the Project is a Specific Plan that will be developed in multiple phases over multiple years, all of the Project's roadways will be developed to support the Project's population, as well as provide additional evacuation alternatives for existing communities, which will provide additional evacuation routes and a hardened and fire-safe community in which to seek temporary refuge that is significantly closer than Lancaster or other urbanized areas. The Project would establish regional access to the Project site via five connections to SR–138, which intersects the southern portion of the Project. I–5 is approximately 1.2 miles west of the Project and is accessed via SR-138. Additionally, the County Fire Code requirements describe the applicable County access standards (i.e., roadway widths, all-weather surface requirements, length of streets, turning requirements, grade restrictions, maintenance requirements, and parking restrictions), which would be implemented by the Project as part of code compliance.

During a wildfire emergency, circumstances may arise in which LACoFD or law enforcement determines that sheltering in place would be safer than evacuating, in which the Project would provide temporary refuge area for firefighters, occupants, and nearby residents to shelter. Temporary refuge areas are pre-planned areas (planned shortly after firefighters arrive on scene) where firefighters may take refuge and temporary shelter for short-term thermal relief, without using a fire shelter in the event that escape routes to an established safety zone are compromised. For the Project, temporary refuge areas would likely include navigating to the interior roadways of neighborhoods where fuel modification zones provide defensible space and maintained landscapes are provided, along with ignition-resistant structures built to California Fire and Building Code standards that offer numerous opportunities for temporary refuge. Temporary refuge areas would not replace the principles of Ready! Set! Go!, the County's public awareness and preparedness program targeted to individuals living and/or working in WUI areas, but rather would provide an additional option to aid in the safe evacuation of the Project site.

Evacuation Analysis

This evacuation analysis was performed for the Project to determine how long it would take for occupants of the Project and the surrounding communities to evacuate under most likely scenarios to nearby urban areas/freeway access in case of a fire emergency. Current evacuation practice typically targets the scope of the evacuation only to the area in immediate danger and placing a larger area on standby for evacuation. This practice allows for better evacuation operations, reduces gridlock, and reserves sufficient travel way for emergency vehicles. It is assumed that first responders or law enforcement would direct traffic at all major intersections during the evacuation process.

During the evacuation process, which can proceed aided by the roadside fuel modification zones and unexposed corridors, wildfire spread and encroachment may be slowed by fire-fighting efforts that would likely include fixed wing and helicopter fire-fighting assets. Hand crews would also be deployed toward containment. None of the evacuation scenarios assumed counter-flow lanes, as these lanes are reserved for first responders, law enforcement, and fire fighters in case of unforeseen circumstances. Given that the Project is a Specific Plan and that structures (residential and commercial) within the Project site would need to adhere to the latest Building Code, it is unlikely that all of the Project would need to evacuate simultaneously during a wildfire scenario. Therefore, this analysis considers the "most likely" worst-case evacuation scenarios, which were established based on an evaluation of the Project's fire environment (Dudek 2025) and the proposed ignition resistant construction for Project structures. Evaluating the "most-likely" worst-case scenario is also an approach supported under the AG Guidance (October 2022) and the Court of Appeal of the State of California's decision in the *Sierra Watch v County of Placer, et al.*, *SCV0038777*, which concluded that evacuation time alone does not require a jurisdiction to find a project's potential impacts as significant. The Court's decision relied on the fire chief evaluation of the fire environment and expert opinion that a mass evacuation of the area as a result of a wildfire would be a "very, very, very unlikely event". Therefore, this analysis assumes only a partial evacuation of the Project site, under a hypothetical evacuation scenario on a Saturday afternoon when it is anticipated that all residents within the Project and neighboring evacuation areas would be home, businesses park within the Project site would be in operation, and all evacuating populations would be evacuating simultaneously. In an actual evacuation scenario, the Unified Command, which includes representatives from different agencies (such as fire departments, law enforcement, public health, and emergency management), would likely order an evacuation of areas that are more at risk, and the central area of the Project may act as an evacuation location, resulting in fewer evacuating vehicles.

Phased Evacuation Approach

The purpose of a phased evacuation is to reduce congestion and transportation demand on designated evacuation routes by controlling access to evacuation routes in stages and sections. This strategy can also be used to prioritize the evacuation of certain communities that are in proximity to immediate danger. A phased evacuation effort would need to be enforced by law enforcement agencies and coordinated with the EOC and affected jurisdictions.

In an actual "real-life" wildfire event, a phased evacuation would be implemented where orders are given to evacuate based on vulnerability, location, and/or other factors, which reduces or prevents traffic surges on major roadways and improves traffic flow. The phased evacuation strategy also prioritizes the evacuation of occupants in proximity to the immediate danger, giving emergency managers the ability to monitor the fire situation and decide in real time based on changing conditions whether to order additional evacuations as needed, or not.

Dept of Homeland Security (2019) provides supporting data for why jurisdictions have moved to the surgical, phased evacuation approach that leverages the power of situation awareness to support decision making. According to their Planning Considerations: Evacuation and Shelter in Place document, they indicate that delineated zones provide benefits to the agencies and community members. Evacuation and shelter-in-place zones promote phased, zone-based evacuation targeted to the most vulnerable areas, which allows jurisdictions to prioritize evacuation orders to the most vulnerable zones first and limit the need to evacuate large areas not under the threat. Zones help:

- Jurisdictions to understand transportation network throughput and capacity, critical transportation and resource needs, estimated evacuation clearance times, and shelter demand.
- Planners to develop planning factors and assumptions to inform goals and objectives.
- Community members to understand protective actions to take during an emergency.
- Shelters to limit traffic congestion and select locations suitable for the evacuated population.

The amount of time needed to evacuate the Project would vary by the type of incident, the number of evacuation routes utilized, the amount of mobilization time, actual areas at risk, and other factors. It has also been established herein that the targeted approach would minimize the size of the area being evacuated and use a phased approach, which may further reduce the evacuation time estimates.

In an actual evacuation scenario, it is most likely that Los Angeles County Sheriff Department in coordination with LACoFD and the County Office of Emergency Management would implement a phased evacuation where orders are given to evacuate based on vulnerability, location, and/or other factors, which enables the subsequent traffic surges on major roadways to be smoothed over a longer timeframe, thus improving traffic flow. A phased strategy can also be used to prioritize the evacuation of certain communities that are in proximity to immediate danger.

LA County Evacuation Practices

Based on the review of the EOP, the County All-Hazards Mitigation Plan (2020), recent wildfire evacuation efforts, and other relevant information, the current evacuation practices are led by the local incident commander or the incident command post (ICP). These practices involve collaboration between fire departments and various law enforcement agencies. Depending on the nature of the emergency, multiple departments may work together during the evacuation process. The responsibilities of these departments are detailed in the County OA EOP and summarized below:

Fire Department Responsibilities

- Establish command of the Incident
- Conduct a situation assessment and evaluate the need for evacuations
- Establish an Incident Command Post (ICP) with sufficient room for representatives from other assisting agencies and announce its location
- Request Agency Representative from Law Enforcement to respond to the ICP.

Law Enforcement Responsibilities

- Assign supervisor of the rank of Sergeant or above to the Incident Command Post and request a Deputy to locate with Operations Section Chief
- Maintain ingress and egress routes for emergency vehicles
- Establish perimeter control, keeping unauthorized vehicles and pedestrians out of the involved area. Conduct evaluations, if required, at the direction of the Incident Commander
- Establish anti-looting security patrols, when safe to do so, for evacuated areas within the perimeter
- Maintain a Unit log

Joint Fire and Law Enforcement Responsibilities

- Evaluate and determine whether Law Enforcement role will be as an Agency Representative or Unified Incident Commander, depending on the scope of the Incident
- Assign a Law Enforcement supervisor to work closely with the Operations Section Chief or Incident Commander, whomever is determining the areas to be evacuated
- Assess and validate the need for an Evacuation Warning, Evacuation Order, and/or Shelter in Place — Determine the location, potential size, and direction of Incident travel or spread

- Unified Commanders determine potential for Incident spread and request the appropriate resources to complete the evacuation and mitigate the Incident concurrently

Methodical and strategic evacuation orders ensure that resources are deployed where needed and support a manageable traffic flow out of the area under threat. This approach is demonstrated through several recent wildfires where evacuation orders were issued to target populations, several examples of recent evacuations are provided below:

Border Fire 32, San Diego County

During the Border Fire 32 in August 2022[7] for example, on August 31st, the San Diego County Sheriff's Department shut down SR-94 at 2:57 p.m. before issuing an evacuation order at 3:28 p.m[8]. Such road closures are typically implemented to ensure that evacuating traffic has priority and to maintain clear pathways for law enforcement, first responders, and firefighting equipment.

Lilac Fire December 2017, San Diego County[9][3]

Early in the fire, Sheriff's deputies and firefighters focused on evacuating and rescuing residents in immediate danger. County and local agencies implemented a phased evacuation of potentially affected areas with 14 separate evacuation campaigns (notifications sent to affected areas) – sequencing of evacuation areas occurring between 12/7/2017 at 1:52 pm to 12/7/2017 10:17 pm. The Oceanside Police Department utilized 3 separate notification campaigns as the fire moved toward and into their jurisdiction between 5:49 pm and 9:19 pm 12/7/2017.

The Sheriff's Department deployed a platoon of 50 deputies, including four sergeants and a lieutenant, 24 hours a day for the first several days of the incident. Sheriff's deputies prepare for wildfires with mandatory annual training, which includes fire behavior, evacuations, and emergency operations

Thomas Fire 2017, Ventura County

During the Thomas Fire, a targeted evacuation order was issued only to areas in immediate danger. Law enforcement first targeted communities in the Carpinteria area with specific emphasis that the evacuation order is only for the identified communities in order to reduce the number of evacuees on roadways being utilized for evacuation. Evacuation orders continued to change throughout the duration of the fire, focused only on the highest risk populations. This approach has been confirmed by numerous fire and law enforcement agencies at project meetings, public hearings, and interviews with Dudek personnel.

The Department of Homeland Security (2019) provides supporting data for why jurisdictions have moved to the targeted evacuation approach that leverages the power of

7 https://x.com/SDSheriff/status/1565096377494818817
8 https://x.com/SDSheriff/status/1565104232688074752
9 Lilac Fire After Action Report. County of San Diego 107 pp.

situational awareness to support decision making. According to their Planning Considerations: Evacuation and Shelter in Place document, they indicate that delineated zones provide benefits to the agencies and community members. Evacuation and shelter-in-place zones promote phased, zone-based evacuation targeted to the most vulnerable areas, which allows jurisdictions to prioritize evacuation orders to the most vulnerable zones first and limit the need to evacuate large areas not under the threat. Zones help:

- Jurisdictions to understand transportation network throughput and capacity, critical transportation and resource needs, estimated evacuation clearance times, and shelter demand.
- Planners to develop planning factors and assumptions to inform goals and objectives.
- Community members to understand protective actions to take during an emergency.
- Shelters to limit traffic congestion and select locations suitable for the evacuated population.

Additionally, targeted evacuation order/warning aims to ensure proper traffic flow and reduce stress at evacuation sites, some people may still choose to evacuate even if they are not facing an immediate threat. These individuals are known as shadow evacuees, and they increase the demand on the roadway network. The number of shadow evacuees varies from incident to incident, depending on their proximity to the actual fire, though it can be assumed that approximately 30% of evacuees fall into this category.

While the amount of time needed to evacuate the Project would vary by the type of incident, the number of evacuation routes utilized, the amount of mobilization time taken by occupants, actual areas at risk, and other factors, the targeted approach would minimize the size of the area being evacuated and use a phased approach, which would likely reduce evacuation time below the above evacuation time estimates. Accordingly, roadway capacity would remain adequate to undertake safe and effective evacuations with development of the Project and would not expose people or structures to a significant risk of loss, injury or death.

Evacuation Modeling Methodology, Assumptions, and Scenarios

An evacuation model analysis was performed by Chen Ryan Associates (CRA) and Dudek for the Centennial Project to determine how long it would take for occupants of the Project and the surrounding communities to evacuate to nearby urban areas and/or freeways in case of a fire emergency. This analysis was performed in accordance with the requirements of the EOP for the calculation of evacuation times. The following provides a summary of the methodology, assumptions and scenarios considered in the evacuation time analysis presented herein.

An evacuation model analysis was performed by Chen Ryan Associates (CRA) and Dudek for the Centennial Project to determine how long it would take for occupants of the Project and the surrounding communities to evacuate to nearby urban areas and/or freeways in case of a fire emergency. This analysis was performed in accordance with the requirements of the EOP for the calculation of evacuation times.

Current evacuation practice typically targets the scope of the evacuation only to the area in immediate danger and placing a larger area on standby for evacuation. This practice allows for better evacuation operations, reduces gridlock, and reserves sufficient travel way for emergency vehicles. The Project evacuation model utilizes a worst- case simultaneous evacuation of all existing uses/occupants within the modeled area. However, the likelihood of each of these populations being evacuated at the same time is low. In an actual evacuation scenario, the IC would prioritize evacuation of land uses located closest to the area with immediate risk, depending on the location of the fire, which may result in reduced evacuation timeframes compared to this modeling. Phased Evacuation, by targeting the area in immediate danger allows for better evacuation operations, reduces gridlock, and reserves sufficient travel way for emergency vehicles. Under this approach, first responders or law enforcement personnel will direct traffic at all major intersections during the evacuation process.

A total of fifteen evacuation scenarios were analyzed, which are shown in Table 3.2-21 below and graphically represented in Figures 1–15 of Attachment C in Appendix H.

Evacuation Time

Fire evacuation orders, like most evacuation events, can be issued any time, day or night, depending on a wildfire's location and movement, making it unpredictable when an evacuation order might occur. Considering that the Project is a Specific Plan, a conservative analysis assumes the evacuation order would be issued during a weekend noontime period when residents are home and commercial centers are operational. It is assumed that schools are not in session, and that supporting land uses such as parks and recreation areas are primarily utilized by the Project's residents, therefore not generating additional vehicles. These assumptions provided for an extremely conservative analysis but, in a real evacuation, it is unlikely that all land uses would be at full capacity. These conservative assumptions are, however, consistent with best practices to understand expected worst-case evacuation scenario timelines.

Primary Evacuation Routes and Capacity

It is assumed that traffic evacuating from both the Project and nearby communities/land uses would use the closest available evacuation routes for leaving the area. Evacuation routes were selected based upon review of the Project site, available evacuation routes, and the quickest way to leave the at-risk areas. The number of evacuation roadways accessible to each village depends on the development phase of the specific plan. Attachment C outlines the evacuation roadways by development phases, while Attachment C of Appendix H displays available backbone roadways (note that internal roadway locations are not known at the time of this analysis but will provide numerous connections to the modeled backbone roads).

No contraflow lanes[10] were assumed, and access for first responders and law enforcement would be via inbound roadways. Two-way travel was assumed, with evacuating vehicles traveling outbound to the designated Safe Zone. It is assumed that first responders, law enforcement or other coordinating agency personnel will direct traffic at identified intersections and on/off ramps during the evacuation process, as detailed in the County of Los Angeles Operational Area Emergency Operation Plan. Should evacuation managers determine whether contraflow is preferred or necessary, evacuation capacity would increase while evacuation times would decrease.

The Centennial Specific Plan Traffic Study conducted by Stantec in May 2017 and the Centennial Specific Plan Supplemental Traffic Study, both collectively referred to as 2017 Traffic Studies, assumed that the Project would improve SR-138 to a four-lane expressway from I-5 to 240th Street West and to a limited access conventional four-lane highway from 240th Street West to 190th Street West, with right-of-way reserved for a six-lane expressway between Gorman Post Road and 300th Street West, or comparable improvements consistent with the Northwest 138 Corridor. However, to be conservative, it is assumed that SR-138 would remain as a two-lane highway for all analysis scenarios.

Control of Downstream Intersections

As part of evacuations operations, as demonstrated in Border Fire 32, first responders or law enforcement will direct traffic at all major downstream intersections out of the area during the evacuation process. As possible, intersection traffic may be managed at appropriately equipped signals to assist in the movement of traffic from areas of higher potential exposure to areas of lower exposure.

Wildfire Progression Modeling Scenarios

A total of fifteen evacuation scenarios were analyzed, which are shown in Table 3.2-21 below, were determined through fire progression model results for three fire spread scenarios and varying levels of Project buildout as described in Section 3.2.7 and provided below. Wildfires encroaching the site from the south were not modeled as wind patterns are not conducive to wildfire spread towards the Project site from these directions. While Santa Ana winds do blow from the east, wildfire spread towards the Project from fires burning directly from the east was also not modeled due to substantial agricultural areas and sparse fuel loads present in the Antelope Valley which prevent wildfire ignition and spread (See Fire History Exhibit 3.2-5). In addition, the burn probability modeling results as presented in

[10] Contraflow or lane reversal involves directing traffic to use lanes coming from the source of a hazard to move people away from the hazard. Such a strategy can be used to eliminate bottlenecks in communities with road geometries that prevent efficient evacuations or to facilitate traffic flow out of a major urban area. Among the considerations in planning emergency contraflow are whether sufficient traffic control officers are available, potential negative impact on responding fire apparatus, access management, merging, exiting, safety concerns, and labor requirements. Contraflow configurations must be carefully planned based on on-site factors and should not be implemented in an ad-hoc fashion. Dudek July 2014. "Wildland Fire Evacuation Procedures Analysis" for City of Santa Barbara, California, page 65.

Exhibits 3.2-14 and 3.2-15 suggest a low likelihood of fire occurrence and spread within the region to the east of the Project site.

Scenario 1 – Fire Approaching from the Northwest

During this scenario, wildfire spreads in a southeast/eastern direction after igniting along Interstate-5. Wildfire spread is slow due to lighter wind speeds during these weather conditions. The wildfire is not predicted to reach the Project site within the 8-hour simulation period. While a shelter in place approach at the Project site is likely during this scenario, evacuation via SR-138 east is not likely to be impacted by wildfire and would likely be utilized as the Project evacuation route.

If a fire were to encroach on the Project site from the west or northwest, a phased evacuation approach would likely evacuate the Project's western villages first, followed by interior Villages.

Scenario 2 – Fire Approaching from the Northeast

During this scenario, wildfire spreads in a southwest direction through undeveloped areas to the north of the Project site. The wildfire is driven by strong Santa Ana winds and moves at a rapid rate of spread. Assuming no fire suppression efforts, the wildfire is modeled to reach development areas in the northern extreme of the Project site within 245 minutes (roughly 4 hours). The fire skirts the northern edge of the Project site and continues to travel southwest.

While the fire is modeled to reach the Project site (assuming no fire suppression efforts), the predicted fire behavior near planned development areas is modeled to be generally of low to moderate intensity. Fireline intensity is lower in these areas to due light fuels and moderate terrain which are not conducive to extreme fire behavior (See Exhibit 3.2-22). Perimeter FMZs bordering development areas would act to further reduce Fireline intensity near development areas.

When considering evacuations during this scenario, SR-138 eastbound and westbound are not expected to be impacted by wildfire. If a fire were to encroach on the Project site from the north or northeast, a phased evacuation approach would likely evacuate the Project's northern villages first, followed by interior villages.

Scenario 3: Fire Approaching from the Southeast

During this scenario, wildfire spreads in a southwest direction through undeveloped areas to the south of the Project site. The wildfire is driven by strong Santa Ana winds and moves at a rapid rate of spread. Assuming no fire suppression efforts, the wildfire is modeled to reach development areas within 295 minutes (roughly 5 hours). The fire skirts the northern edge of the Project site and continues to travel southwest.

Similar to in Scenario 2, fire intensity where the fire is modeled to reach the southern edge of the proposed development areas is considered low. Given the fire's southwest direction

of spread, fire behavior along the Project's southern edge would represent a flanking fire. Unlike head fires, which move in the direction of the wind and exhibit greater fire severity, flank fires move parallel to the wind direction and therefore burn at reduced severity. In addition to increased likelihood of successful suppression of a flank fire in the Project's southern edge, potential wildfire impacts in this area would be mitigated by perimeter parking areas, Fuel Modification Zones (FMZs), and fire-hardened commercial buildings.

If a fire were to encroach on the Project site from the west or northwest, a phased evacuation approach would likely evacuate the Project's southern villages first, followed by interior villages.

Study Scenarios

As previously discussed, fire evacuation is not a one size fit all approach, and even though mass evacuation provides a conservative analysis, current evacuation practice indicates that this approach is not desirable due to the potential of creating high level of congestion and prevent those in at risk area from evacuating safety. Thus, the analysis presented in this report follow current fire evacuation approaches, which assume that ICP staff and law enforcement would issue targeted evacuation warnings and orders to areas that are at risk instead of a full evacuation of the specific plan.

As the Project would be constructed over multiple years, the development phases were grouped together to analyze the different potential evacuation scenarios that may occur as the project is developed over time. The phases are grouped together in set of every two phases, resulting in five different land use scenarios.

Based on a review of historical fire conditions and fire modeling conducted by Dudek, landscapes around the Project site could potentially support wildfire that, in the most likely scenarios, would approach the Project site from the south/southeast, north/northeast, or west/northwest, depending on the fire's point of origination. Therefore, for each land use scenario, an analysis was conducted for each potential direction of fire approach, resulting in 15 different scenarios. These scenarios are summarized in Table 3.2-21 below.

Safe Zone

Based on Dudek's review of the area's fire history, fires have halted along developed areas adjacent to wildland fuels and have not historically progressed into the more densely urbanized, irrigated, and hardscaped areas. Specifically, none of the historical fires encroached beyond the periphery areas within the wildland urban interface area of the Los Angeles County. Recent fires such as the Max Fire (2024), Post Fire (2024), Jerry Fire (2019), Merwin Fire (2015), and Lago Fire (2011) were all stopped at or prior to reaching the urbanized area or I-5. Thus, it is assumed that during the earlier phases of the specific plan, evacuees are considered "safe" once their vehicles reach an area outside the evacuation order zone. For scenarios 1 through 3, which would occur early in the project's buildout process, evacuees are considered "safe" when their vehicles arrive at either the I-5/SR-138 interchange to the west, or the community of Neenach to the east. In the later scenarios, which would occur later in the project's buildout process, it is assumed that some evacuees

will be directed to other villages or developed areas (e.g., Institutional & Civic) within the project site that are not at risk of fire and/or to offsite locations, In such later scenarios, evacuees are considered "safe" once they arrive at the respective receiving villages or at the onsite or offsite evacuation point otherwise indicated in Table 3.2-21.

Evacuating Vehicles

The projected number of vehicles evacuating from or within the study area is based on a combination of various data sources: Parcel Quest's parcel map data for land use, vehicle ownership averages from the US Census Bureau, aerial imagery from Nearmap, and relevant environmental documents. Breakdown of the calculations for evacuating vehicles is as follows:

***Existing Residential*:** This is obtained by multiplying the total number of households (from Parcel Quest parcel map data) with the average vehicle ownership, which stands at 2.07 vehicles per household as per the US Census Bureau.

For this analysis, it is assumed that during the earlier phases of the Project, existing land use to the east of the Project site will evacuate in the same direction as the Project's traffic. Once the Project is developed, the Project site can serve as an evacuation zone for existing land uses that need to evacuate westward toward the Project site. Therefore, the evacuation times for existing land uses are only included in scenarios where the Project's traffic would potentially share the same evacuation roadway as the existing land uses.

Proposed Project: This is calculated by multiplying the quantities of land use by the following sources:

Residential Land Use: Total number of dwelling units x average vehicle ownership.

Nonresidential Land Uses: Total square footage x parking rate derived from the Institute of Transportation Engineer (ITE) Parking Generation Manual.

Land use quantities were obtained from Stantec and Appendix E of the Centennial Specific Plan Traffic Study (November 2017).

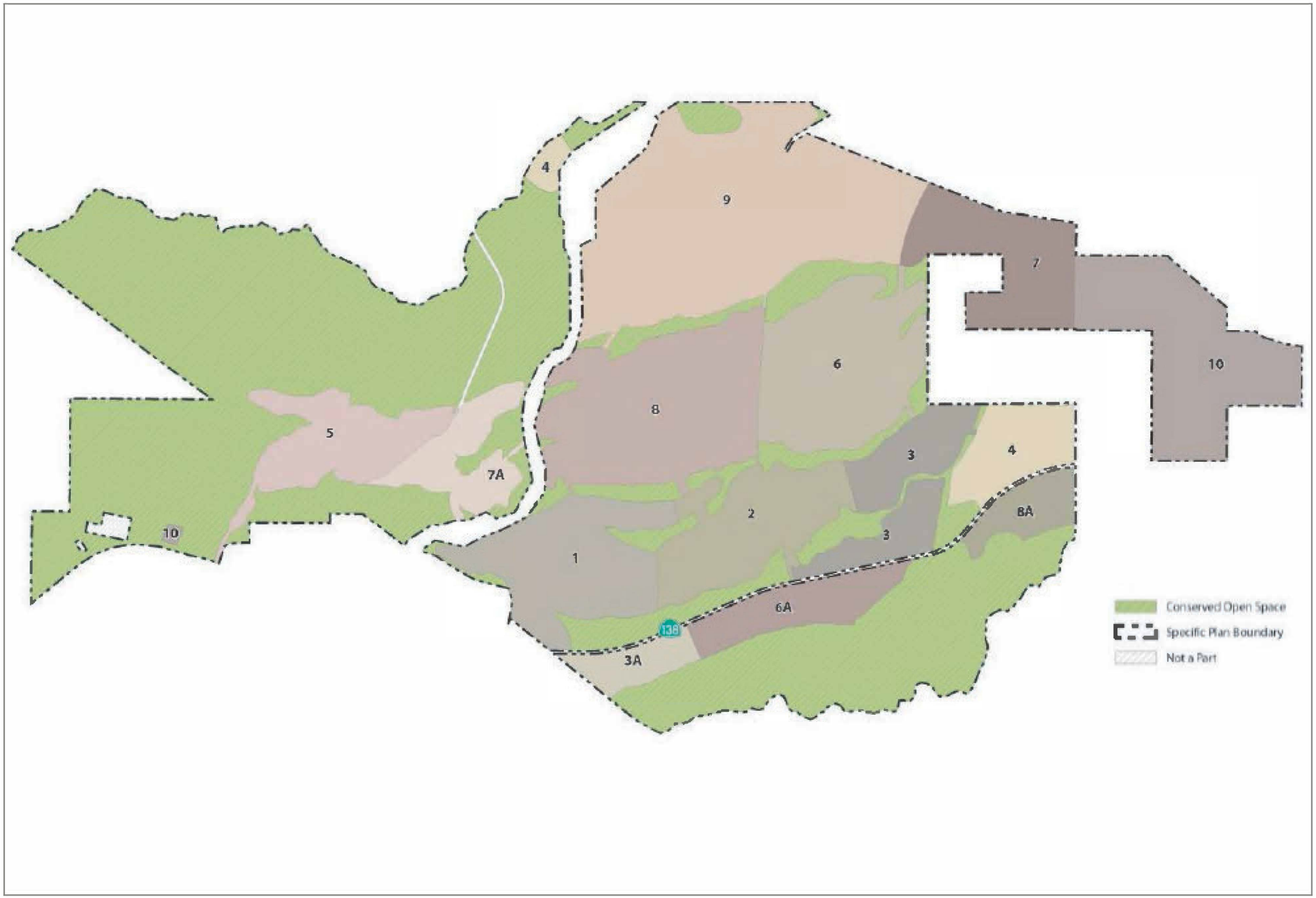
Shadow Evacuees: These are individuals who choose to evacuate out of an abundance of caution, even without an official evacuation order. The "Review of California Wildfire Evacuations from 2017 to 2019" report found that approximately 30% of evacuees fall into this category.

For a reasonable analysis, these scenarios assumed that two percent (2%)[11] of the evacuating vehicles are heavy vehicles (trucks with trailers). Two percent is the nationally acceptable ratio of heavy vehicles to all vehicles.

[11] https://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_599.pdf (p.5).

Average vehicle ownership, residential units, and evacuating vehicles calculations are provided in Appendix H. Table 3.2-21 displays the number of vehicles evacuating under each scenario. Exhibit 3.2-28 demonstrates phasing of the Project and Exhibit 3.2-29 shows the proposed villages.

Under emergency evacuation conditions and consistent with the OEP and practices employed during prior emergency evacuation events in the County, traffic signals would revert to special timing plans and/or traffic personnel will be deployed at key intersections to help regulate traffic flow for primary evacuation approaches.



Source: Dudek 2024

Conceptual Project Phasing Plan

Exhibit 3.2-28

Centennial Supplemental Environmental Impact Report

N W E S

Map not to scale

PSOMAS

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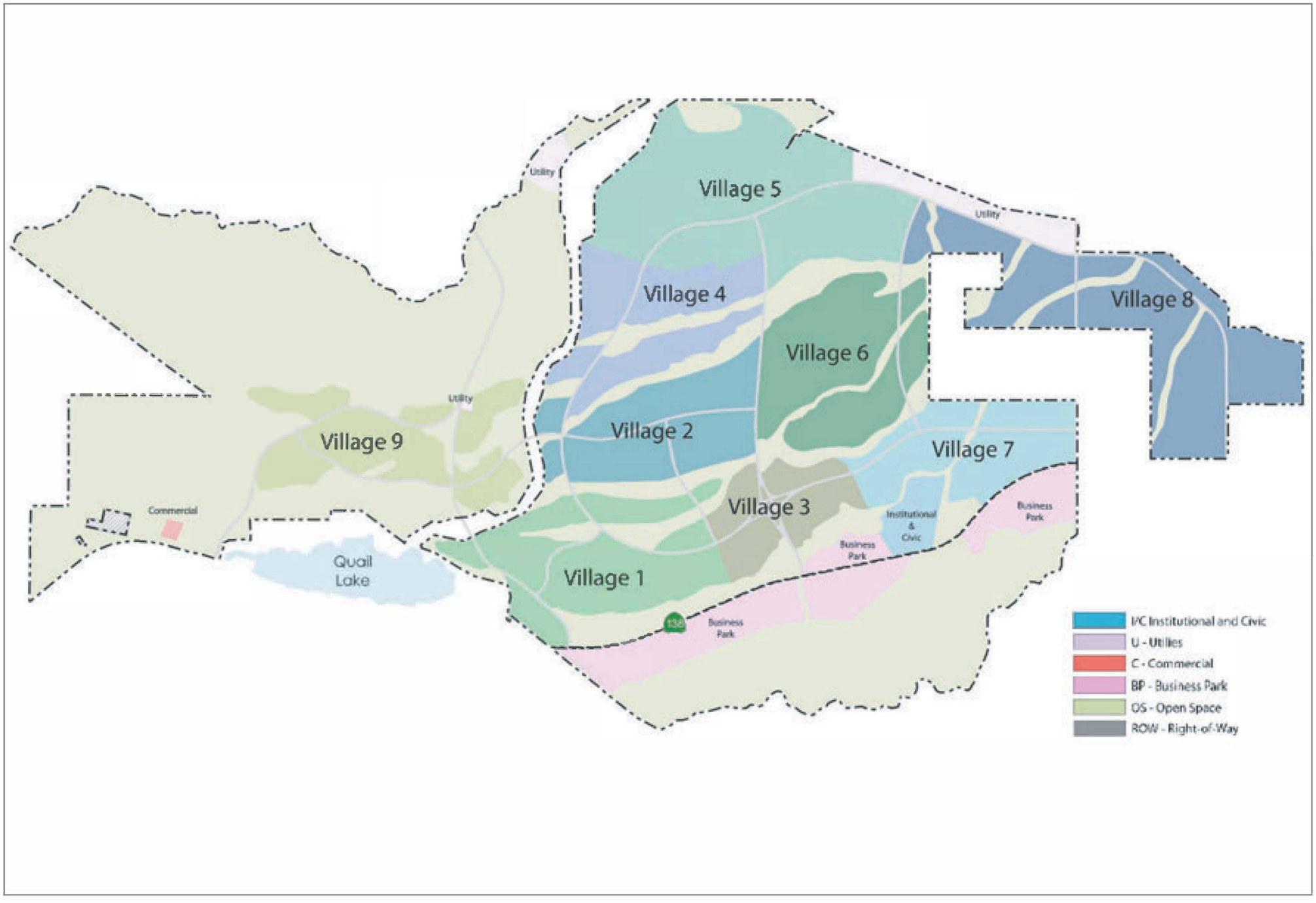

Source: Dudek 2024

Proposed Villages

Exhibit 3.2-29

Centennial Supplemental Environmental Impact Report

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TABLE 3.2-21
STUDY SCENARIOS AND EVACUATING VEHICLES CALCULATION

Scenario	Phases	Build Land Use	Fire Approach Direction	Evacuation Direction/Routes	Area Under Evacuation	Evacuating Vehicles
1	Phase 1-2	Village 1 & Village 3	South/Southeast	75% via SR-138 westbound toward I-5	Village 1	3,783
				25% via internal road toward I-5	Village 3	3,878
					Existing	200
2	Phase 1-2	Village 1 & Village 3	North/Northeast	25% via SR-138 westbound toward I-5	Village 1	3,783
				25% via internal road toward I-5	Village 3	3,878
				25% via internal road toward Lancaster	Existing	200
				25% via SR-138 eastbound toward Lancaster		
3	Phase 1-2	Village 1 & Village 3	West/Northwest	75% via SR-138 eastbound toward Lancaster	Village 1	3,783
				25% via internal road toward Lancaster	Village 3	3,878
					Existing	200
4	Phase 1-4	Village 1, Village 3, Village 7, Business Park West, Institutional & Civic	South/Southeast	50% via SR-138 westbound toward I-5	50% of Village 7	1,490
				50% via internal roadway toward Village 1	Business Park West	1,875
					Institutional & Civic	2,958
5	Phase 1-4	Village 1, Village 3, Village 7, Business Park West, Institutional & Civic	North/Northeast	25% via SR-138 westbound toward I-5	50% of Village 3	2,085
				50% via internal roadway toward Village 1	Village 7	2,979
				25% via SR-138 eastbound toward Lancaster	Existing	200

TABLE 3.2-21
STUDY SCENARIOS AND EVACUATING VEHICLES CALCULATION

Scenario	Phases	Build Land Use	Fire Approach Direction	Evacuation Direction/Routes	Area Under Evacuation	Evacuating Vehicles
6	Phase 1-4	Village 1, Village 3, Village 7, Business Park West, Institutional & Civic	West/Northwest	50% via internal roadway toward Village 7 and the Institutional/Civic land use	Village 1	3,783
				50% via SR-138 eastbound toward Lancaster	30% of Village 3	1,251
					Business Park West	1,875
					Existing	200
7	Phase 1-6	Village 1, Village 3, Village 6, Village 7, Village 9 West, Business Park West, Business Park Central, Institutional & Civic	South/Southeast	25% via SR-138 westbound toward I-5	50% of Village 7	1,490
				25% via internal roadway toward Village 1	Business Park West	1,875
				25% via internal roadway toward Village 3	Business Park Central	1,250
				25% via internal roadway toward Village 6	Institutional & Civic	2,958
8	Phase 1-6	Village 1, Village 3, Village 6, Village 7, Village 9 West, Business Park West, Business Park Central, Institutional & Civic	North/Northeast	25% via SR-138 westbound toward I-5	Village 6	3,488
				50% via internal roadway toward Village 1 and Village 3	Village 7	2,979
				25% via SR-138 eastbound toward Lancaster		

TABLE 3.2-21
STUDY SCENARIOS AND EVACUATING VEHICLES CALCULATION

Scenario	Phases	Build Land Use	Fire Approach Direction	Evacuation Direction/Routes	Area Under Evacuation	Evacuating Vehicles
9	Phase 1-6	Village 1, Village 3, Village 6, Village 7, Village 9 West, Business Park West, Business Park Central, Institutional & Civic	West/Northwest	50% via internal roadway toward Village 7 and the Institutional & Civic	Village 1	3,783
				50% via SR-138 eastbound toward Lancaster	Village 9 West	2,218
					Existing	200
10	Phase 1-8	Village 1, 3, 7 E & West, Village 9 West, Village 6, Village 9 East, Village 8 West, Village 2, Village 4 South	South/Southeast	25% via SR-138 westbound toward I-5	50% of Village 7	1,490
				25% via internal roadway toward Village 1	Business Park West	1,875
				25% via internal roadway toward Village 3	Business Park Central	1,250
				25% via internal roadway toward Village 6	Business Park East	1,186
					30% of the Institutional & Civic	887
11	Phase 1-8	Village 1, Village 2, Village 3, Village 6, Village 7, Village 9, Village 8 West, Village	North/Northeast	25% via internal roadway toward Village 1	30% of Village 2	738
				25% via internal roadway toward Village 3	Village 4 South	2,269
				25% via internal roadway toward Village 7	50% of Village 6	1,744
				25% via internal roadway toward Institutional & Civic	Village 8 West	1,922

TABLE 3.2-21
STUDY SCENARIOS AND EVACUATING VEHICLES CALCULATION

Scenario	Phases	Build Land Use	Fire Approach Direction	Evacuation Direction/Routes	Area Under Evacuation	Evacuating Vehicles
		4 South, Business Park West, Business Park Central, Business Park East, Institutional & Civic			30% of Village 9	979
12	Phase 1-8	Village 1, Village 2, Village 3, Village 6, Village 7, Village 9, Village 8 West, Village 4 South, Business Park West, Business Park Central, Business Park East, Institutional & Civic	West/Northwest	25% via internal roadway toward Village 3	30% of Village 1	1,135
				25% via internal roadway toward Village 7	30% of Village 2	738
				25% via internal roadway toward Business Park	Village 4 South	2,269
				25% via internal roadway toward Institutional & Civic	Village 9	3,264
13	Phase 1-10	Buildout	South/Southeast	25% via SR-138 westbound toward I-5	Business Park West	1,875
				25% via internal roadway toward Village 1	Business Park Central	1,250
				25% via internal roadway toward Village 3	Business Park East	1,186

TABLE 3.2-21
STUDY SCENARIOS AND EVACUATING VEHICLES CALCULATION

Scenario	Phases	Build Land Use	Fire Approach Direction	Evacuation Direction/Routes	Area Under Evacuation	Evacuating Vehicles
				25% via internal roadway toward Village 6/Village 5	30% of the Institutional & Civic	887
					50% of Village 7	1,490
					Village 8 East	3,678
14	Phase 1-10	Buildout	North/Northeast	25% via internal roadway toward Village 1/Village 2	30% of Village 4	1,284
				25% via internal roadway toward Village 3	Village 5	10,333
				25% via internal roadway toward Village 7/Institutional & Civic	30% of Village 6	1,046
				25% via SR-138 Westbound toward Business Park	Village 8 West	1,922
					Village 8 East	3,678
15	Phase 1-10	Buildout	West/Northwest	25% via internal roadway toward Village 3	30% of Village 2	738
				25% via internal roadway toward Village 7	50% of Village 4	2,140
				25% via internal roadway toward Business Park	50% of Village 5	5,167
				25% via internal roadway toward Institutional & Civic	Village 9	3,264

Sources: CR Associates 2024, US Census Bureau 2023, Google Maps 2023

Potential for Project Evacuation Impact

In coordination with Los Angeles County Department of Regional Planning (LACDRP), the Project would provide five public roadway connections to SR-138 to allow residents multiple access points to Regional Circulation. This would include changing the National Cement Plant Road from being a private road with emergency access only to a public road that would meet LA Public Works and LACoFD's road and safety standards. In addition, the use of 2 lane collectors that would service sub-division housing neighborhoods within the villages would limit the numbers of homes located on a dead-end street with no secondary access. The circulation and design of roadways for these neighborhoods should encourage looped design with multiple connections to main collectors, allowing the flow of traffic to be optimal and provide multiple points of access for emergency vehicles.

Adding facilities such as a Battery Energy Storage System as a conditionally permitted use and/or microgrid infrastructure would not cause new significant evacuation-related impacts. These facilities could be built in the designated industrial area south of SR-138. Also, these facilities would be built to industry standards, such as the California Fire and Building Code. These requirements may include a protection fire wall, etc.

Evacuation Time

Based on the analysis methodology described in the previous section, Table 3.2-22 summarizes the evacuation time for each analysis scenario. The evacuation time does not depict the evacuation time for each individual person within an evacuation area, but rather the total amount of time needed to evacuate all populations modeled from an area. Populations located in closer proximity to the IC designated safe zone will safely evacuate sooner than the total calculated evacuation time identified in Table 3.2-21. Detailed evacuation travel time analysis information is provided in Attachment B of Appendix C. Table 3.2-22 below summarizes the modeled evacuation time for each scenario:

TABLE 3.2-22
EVACUATION TIME SUMMARY

Scenario	Phases	Build Land Use	Fire Approach Direction	Evacuation Direction/Routes	Area Under Evacuation	Evacuating Vehicles	Evacuating Time (Hours: Minutes)
1	Phase 1-2	Village 1 & Village 3	South/Southeast	75% via SR-138 westbound toward I-5	Village 1	3,783	2:04
				25% via internal road toward I-5	Village 3	3,878	3:37
					Existing	200	0:42
2	Phase 1-2	Village 1 & Village 3	North/Northeast	25% via SR-138 westbound toward I-5	Village 1	3,783	1:33
				25% via internal road toward I-5	Village 3	3,878	1:34
				25% via internal road toward Lancaster	Existing	200	0:17
				25% via SR-138 eastbound toward Lancaster			
3	Phase 1-2	Village 1 & Village 3	West/Northwest	75% via SR-138 eastbound toward Lancaster	Village 1	3,783	2:03
				25% via internal road toward Lancaster	Village 3	3,878	1:36
					Existing	200	0:17
4	Phase 1-4	Village 1, Village 3, Village 7, Business Park West, Institutional & Civic	South/Southeast	50% via SR-138 westbound toward I-5	50% of Village 7	1,490	1:00
				50% via internal roadway toward Village 1	Business Park West	1,875	1:54
					Institutional & Civic	2,958	1:46

TABLE 3.2-22
EVACUATION TIME SUMMARY

Scenario	Phases	Build Land Use	Fire Approach Direction	Evacuation Direction/Routes	Area Under Evacuation	Evacuating Vehicles	Evacuating Time (Hours: Minutes)
5	Phase 1-4	Village 1, Village 3, Village 7, Business Park West, Institutional & Civic	North/Northeast	25% via SR-138 westbound toward I-5	50% of Village 3	2,085	1:07
				50% via internal roadway toward Village 1	Village 7	2,979	1:23
				25% via SR-138 eastbound toward Lancaster	Existing	200	0:17
6	Phase 1-4	Village 1, Village 3, Village 7, Business Park West, Institutional & Civic	West/Northwest	50% via internal roadway toward Village 7 and the Institutional/Civic land use	Village 1	3,783	2:26
				50% via SR-138 eastbound toward Lancaster	30% of Village 3	1,251	0:41
					Business Park West	1,875	2:21
					Existing	200	0:17
7	Phase 1-6	Village 1, Village 3, Village 6, Village 7, Village 9 West, Business Park West, Business Park Central, Institutional & Civic	South/Southeast	25% via SR-138 westbound toward I-5	50% of Village 7	1,490	0:39
				25% via internal roadway toward Village 1	Business Park West	1,875	0:50
				25% via internal roadway toward Village 3	Business Park Central	1,250	1:07
				25% via internal roadway toward Village 6	Institutional & Civic	2,958	1:20

TABLE 3.2-22
EVACUATION TIME SUMMARY

Scenario	Phases	Build Land Use	Fire Approach Direction	Evacuation Direction/Routes	Area Under Evacuation	Evacuating Vehicles	Evacuating Time (Hours: Minutes)
8	Phase 1-6	Village 1, Village 3, Village 6, Village 7, Village 9 West, Business Park West, Business Park Central, Institutional & Civic	North/Northeast	25% via SR-138 westbound toward I-5	Village 6	3,488	3:27
				50% via internal roadway toward Village 1 and Village 3	Village 7	2,979	1:49
				25% via SR-138 eastbound toward Lancaster			
9	Phase 1-6	Village 1, Village 3, Village 6, Village 7, Village 9 West, Business Park West, Business Park Central, Institutional & Civic	West/Northwest	50% via internal roadway toward Village 7 and the Institutional & Civic	Village 1	3,783	1:22
				50% via SR-138 eastbound toward Lancaster	Village 9 West	2,218	1:11
					Existing	200	0:17
10	Phase 1-8	Village 1, 3, 7 E & West, Village 9 West, Village 6, Village 9 East, Village 8 West, Village 2, Village 4 South	South/Southeast	25% via SR-138 westbound toward I-5	50% of Village 7	1,490	1:21
				25% via internal roadway toward Village 1	Business Park West	1,875	1:07
				25% via internal roadway toward Village 3	Business Park Central	1,250	0:47
				25% via internal roadway toward Village 6	Business Park East	1,186	1:19
					30% of the Institutional & Civic	887	0:26

TABLE 3.2-22
EVACUATION TIME SUMMARY

Scenario	Phases	Build Land Use	Fire Approach Direction	Evacuation Direction/Routes	Area Under Evacuation	Evacuating Vehicles	Evacuating Time (Hours: Minutes)
11	Phase 1-8	Village 1, Village 2, Village 3, Village 6, Village 7, Village 9, Village 8 West, Village 4 South, Business Park West, Business Park Central, Business Park East, Institutional & Civic	North/Northeast	25% via internal roadway toward Village 1	30% of Village 2	738	0:53
				25% via internal roadway toward Village 3	Village 4 South	2,269	0:53
				25% via internal roadway toward Village 7	50% of Village 6	1,744	0:53
				25% via internal roadway toward Institutional & Civic	Village 8 West	1,922	1:02
					30% of Village 9	979	0:49
12	Phase 1-8	Village 1, Village 2, Village 3, Village 6, Village 7, Village 9, Village 8 West, Village 4 South, Business Park West, Business Park Central, Business Park East, Institutional & Civic	West/Northwest	25% via internal roadway toward Village 3	30% of Village 1	1,135	0:52
				25% via internal roadway toward Village 7	30% of Village 2	738	0:57
				25% via internal roadway toward Business Park	Village 4 South	2,269	0:48
				25% via internal roadway toward Institutional & Civic	Village 9	3,264	2:58

TABLE 3.2-22
EVACUATION TIME SUMMARY

Scenario	Phases	Build Land Use	Fire Approach Direction	Evacuation Direction/Routes	Area Under Evacuation	Evacuating Vehicles	Evacuating Time (Hours: Minutes)
13	Phase 1-10	Buildout	South/Southeast	25% via SR-138 westbound toward I-5	Business Park West	1,875	1:07
				25% via internal roadway toward Village 1	Business Park Central	1,250	0:55
				25% via internal roadway toward Village 3	Business Park East	1,186	1:32
				25% via internal roadway toward Village 6/Village 5	30% of the Institutional & Civic	887	0:26
					50% of Village 7	1,490	1:32
					Village 8 East	3,678	2:20
14	Phase 1-10	Buildout	North/Northeast	25% via internal roadway toward Village 1/Village 2	30% of Village 4	1,284	0:51
				25% via internal roadway toward Village 3	Village 5	10,333	6:41
				25% via internal roadway toward Village 7/Institutional & Civic	30% of Village 6	1,046	0:34
				25% via SR-138 Westbound toward Business Park	Village 8 West	1,922	4:32
					Village 8 East	3,678	3:06

TABLE 3.2-22
EVACUATION TIME SUMMARY

Scenario	Phases	Build Land Use	Fire Approach Direction	Evacuation Direction/Routes	Area Under Evacuation	Evacuating Vehicles	Evacuating Time (Hours: Minutes)
15	Phase 1-10	Buildout	West/Northwest	25% via internal roadway toward Village 3	30% of Village 2	738	1:11
				25% via internal roadway toward Village 7	50% of Village 4	2,140	1:08
				25% via internal roadway toward Business Park	50% of Village 5	5,167	2:37
				25% via internal roadway toward Institutional & Civic	Village 9	3,264	1:53

Shelter in Place

Given the Project's location and size, a shelter-in-place option on the Project site would be available to the responding emergency managers (e.g., incident commander, Los Angeles County Sheriff). This alternative would include the option for all or a portion of the onsite population to shelter in place within the Project Site. This would provide emergency managers with a safer alternative to risking a late evacuation. This information will be provided to law enforcement and fire agencies for use in pre-planning scenarios to better inform in the field decisions made pursuant to adopted Emergency Response Plans required by MM 3-8 from the 2019 EIR. Emergency personnel who issue an evacuation order may consider these time estimates in determining when and where to issue evacuation orders. In a real evacuation scenario, emergency managers may use alternative actions/options to further expedite evacuation. Such actions may include providing additional lead time in issuing evacuation orders, prioritizing area at higher risks, providing alternative signal control at downstream intersections, utilizing additional off-site routes or directing traffic to roadways with additional capacity, implementing contra-flow lanes, issuing "shelter-in-place" orders when determined to be safer than evacuation, or considering the possibility of a delayed evacuation where parts of the population could be directed to remain on-site until the fire burns through the fuels around the evacuation route. As concluded in the evacuation analysis included as Appendix C, a safe evacuation of the Project and surrounding community is possible in all modeled scenarios.

Impacts

As discussed above, the Project would include a phased development which would result in changing of roadways and temporary construction impacts, some of which may require the closure of lanes or entire roadways. While a safe evacuation is possible from the Project site, given the phasing of the Project which would result in changes to the Project site over time, an emergency evacuation could be impaired if there was not updated information available to emergency responders and Project occupants during an evacuation. This could result in confusion for evacuees and emergency personnel on which routes are available for evacuation. If this were to occur, the Project could result in potentially significant impacts related to evacuation of the site.

To address impacts related to the potential impediment of an evacuation, the Project would implement Mitigation Measures MM-3-7 and MM 3-8 from the 2019 EIR. MM-3-7 would include the preparation and updating of an Emergency Response plan which will reflect the changes proposed for each tentative map, which will be provided to all Project occupants and made available for emergency managers to see updated conditions. MM-3-8 from the 2019 EIR would include a Traffic Control Plan which shall identify traffic-control measures implemented to maintain traffic flow in all directions. Together, these measures would ensure that in the case of an evacuation during construction, there would be routes available in all directions. Moreover, the Project's approved Development Agreement obligates the Project applicant to require the Project's Master HOA to implement the Emergency Response Plan, which must include shelter-in-place and evacuation plans, as well ensure the provision of first aid and emergency electric power supplies. The Development Agreement further

obligates the Project applicant to provide Project occupants educational information about the health and safety benefits of emergency preparation to respond to natural disasters, which information must be provided at the initial point of property sale, and annually thereafter though the community's required intranet service.

Conclusion

As discussed above, detailed evacuation modeling has been prepared for the Project to determine whether the Project would adversely affect evacuations in the Project site and surrounding area. While the Project may increase evacuation times relative to existing conditions, the modeling results demonstrate that evacuation timeframes for Project residents and existing residents of nearby communities would fall within established guidelines for evacuation timeframes. Nevertheless, as described above, communication of changes to the Project site as the Project is built out to Emergency Managers and project occupants during an evacuation is required in order to reduce and/or avoid problems with an effective evacuation and reducing potential impediments to successful evacuations. To address impacts related to the potential impediment of an evacuation, the Project would implement Mitigation Measures **MM 3-7** and **MM 3-8** from the 2019 EIR.

In summary, the Project would occur within the OA ERP and is adjacent to SR-138 and proximate to the I-5, both of which are identified as evacuation routes within the Antelope Valley Planning Area. As discussed above, the County does not have a Countywide evacuation plan. However, the Wildfire Evacuation Technical Report (Appendix C) demonstrates that the Project would not impair the County's OA ERP and would not permanently impact identified evacuation routes. Implementation of **MM 3-7,** and **MM 3-8** would ensure that changes to the Project over time would be communicated to emergency manager and occupants during an evacuation. The Project's implementation of **MM 3-7** and **MM 3-8** would ensure that the Project would be consistent with applicable General Plan policies related to access and evacuations. Therefore, with compliance with regulations and implementation of **MM 3-7** and **MM 3-8** from the 2019 EIR**,** the short and long-term operations of the Project would not substantially impair evacuation or interfere with the established emergency operation plans, and impacts would be **less than significant.**

Threshold 2.2-4 ***If located in or near state responsibility areas or lands classified as Very High Fire Hazard Severity Zones, would the project require installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities), including new or physically altered government facilities to maintain acceptable service standards and response times, that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment.***

Section 5.3, Hazards and Fire Safety of the 2019 EIR analyzed the ongoing maintenance of the Approved Project associated with the Approved Project's fuel modification plan, which would include the maintenance fuel modification zones. This threshold as provided as an example in CEQA Appendix G was not a CEQA Appendix G threshold example at the time,

therefore maintenance activities associated with the implementation of Approved Project were not addressed as part of the wildfire analysis, however, the infrastructure associated with the Approved Project is similar to what is proposed as part of the Approved Project with Proposed Modifications. As concluded in the 2019 EIR, impacts related to fire safety and wildfire associated with the Approved Project would be less than significant with mitigation.

As described above, a portion of the Project site is located in a VHFHSZ, and the remainder of the site is located in high and moderate FHSZ. The Project would include the development of a large-scale community which would include new roads, utilities, fuel modification zones, and provision of at least three, and up to four, fully equipped onsite fire stations. Construction and maintenance of proposed roads, utility lines, fuel modification zones, and fire stations could potentially increase fire risk from the use of heavy machinery and the potential for sparks during welding activities or other hot work. The Approved Project with Proposed Modifications would include the construction and maintenance of roads as part of the development. As required under the Los Angeles County Fire Code, fire engine apparatus roads would be maintained with a minimum 20-foot-wide roadway that is clear to the sky, and all flammable vegetation or other combustible growth would be removed for a minimum of 20 feet on each side of the roadway (Title 32 Section 325.10). Additionally, roads would include roadside fuel modification (minimum of 20 feet), be adjacent to FMZs, and ignition resistant structures. Utilities that would be installed and maintained as part of the Project would include water, wastewater, stormwater drainage, electric power, natural gas, and telecommunications services and would connect to existing utilities. The Project's power lines would be undergrounded. The environmental impacts of constructing the Approved Project's new roads, fuel modifications, and fire stations were analyzed in the 2019 EIR and are not expected to change should the County approve the Proposed Modifications.

Impacts related to exacerbating wildfire risks during the installation and maintenance of roads and utilities would be potentially significant, as construction activities within a FHSZ and adjacent open pace and unmaintained fuel beds has the potential to result in accidental ignitions. However, all utility installation and maintenance related construction activities would be required to adhere to the regulations for fire prevention and implementation of the CFPP, which is a requirement of the County fire code.

The Project also includes the installation and maintenance of fuel modification zones in accordance with an approved Fuel Modification Plan as required by the County fire code. The fuel modification zones would result in the introduction of equipment to areas with existing fuels that have the potential to ignite during installation and maintenance activities during fuel modification activities. Increased fire risk would be temporary and would be reduced after the fuel modification zones are completed. The 2019 EIR also included **MM 3-9** would be implemented as part of the Approved Project with Proposed Modifications and requires that CC&Rs or disclosure statements prepared by the Project Applicant/Developer shall be submitted to the County to confirm that new property owners would be informed of their responsibility for maintenance of fuels on their property. Further, these fuel modification zones would decrease overall fire risk to the Project site and surrounding areas. Moreover, all maintenance activities would be conducted according to regulatory requirements and

occur adjacent to the Project's fuel modification zones which would be installed prior to the start of construction and maintained throughout the life of the Project.

In the absence of fire-safe Project design, regulatory compliance and mitigation, it is possible that installation or maintenance of infrastructure (such as roads, fuel breaks, utilities, facilities to maintain acceptable levels of service standards and response times) could significantly exacerbate fire risks. However, as described above, the Project's proposed development would not be placed in an area characterized by high-risk topography and vegetation. Moreover, the Project would be developed as fire hardened, modern master planned community with a clustered, interface design and would comply with current state-of-the-art, ignition-resistant construction standards for all new residential, non-residential, and public facility buildings meeting Chapter 7A of the California Building Code, Title 26 of the County of Los Angeles Building Code, and County Fire requirements. These standards require, among many other measures, fire-resistant roofing to resist ignition from embers or building-to-building fires, vent covering and opening limitations to avoid ember intrusion, noncombustible or ignition-resistant exterior walls, ignition-resistant eaves, and porch ceilings, insulated windows and exterior doors, fire-resistant exterior decks and walkways, and ignition-resistant under-flooring and appendages. These standards have proven to substantially reduce the risk of buildings catching fire or spreading fires during a wildfire event. The Project would incorporate FMZs ranging 100-200 feet that modeling demonstrates would protect the Project site from offsite wildfires, limit the spread of onsite fires to offsite locations, and provide access to firefighters and fire-fighting equipment to suppress both onsite and offsite fires. Project buildings would be constructed of fire-retardant materials and indoor fire sprinkler systems thus reducing ember generation in the event of a structure fire that could threaten onsite and offsite resources. The Project would provide three, and up to four, fully equipped fire stations to ensure adequate fire service response times. The Project would have a sufficient water supply to serve fire suppression needs and would be constructed with code compliant fire hydrant systems with adequate water flows to fight fire. The Project's code compliant internal circulation system and parking restrictions would ensure that firefighting apparatus would have appropriate access to, in, and around the Project site as necessary to provide fire suppression services, and the Project would provide sufficient access points to ensure safe and timely ingress and egress to and from the Project site to serve the needs of both first responders and potential evacuees. Project CC&Rs and HOA enforcement authority, combined with regulatory oversight, would ensure that Project FMZs and fire-safe landscaping are properly and timely maintained over the life of the Project and would ensure the implementation of a communitywide fire-safe education program to ensure that Project occupants are fully informed of their fire-related maintenance obligations and how to respond to a fire emergency, should one occur. Project implementation of a project-specific CFPP and Fuel Modification Plan, compliance with annual fuel modification maintenance and inspection code requirements, compliance with UL 9540A BESS testing requirements, and compliance with regulatory restrictions limiting development in floodplains and steep terrain and ridgelines would further ensure that Project would not cause significant fire risks related to installation of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities), including new facilities to maintain acceptable levels of service and response times. Moreover, to ensure ongoing maintenance of Project FMZs,

adequate access to the site, and timely emergency response necessary to reduce this impact to less than significant level, the Approved Project with Proposed Modifications would implement mitigation measures **MM 3-7, MM 3-8, MM-3-9, MM 16-2, MM 16-3,** and **MM 16-4** from the 2019 EIR. Therefore, this impact would be **less than significant**

3.2.7 CUMULATIVE IMPACT ANALYSIS

The following cumulative analysis relies on the same approach as the cumulative analysis for the 2019 EIR. As described in Section 7.2 of the 2019 EIR, the cumulative analysis for the Project includes both the list and projection approach. The cumulative list uses the cumulative projects identified in the 2019 EIR which includes similar master developments that would occur over many years. Further, the analysis includes the regional projections developed by the Southern California Association of Governments and Kern Council of Governments (Kern COG). As discussed in Chapter 7.0 of the 2019 EIR, the Project would be within the growth projections for North Los Angeles County and Kern County. Cumulative projects identified in the 2019 EIR include master planned residential, commercial, and industrial developments as well as improvements to SR-138. These projects were reevaluated, and it was determined that one project had been removed, with no new projects added.

Impact Threshold Exposure of People to Significant Risks Related to Wildland Fires, Runoff, Post-Fire Instability, or Drainage Changes

Cumulative impacts related to slope instability or landslides could only occur if cumulative projects were connected to a single area that is vulnerable to landslides where the activities of the projects together might combine to exacerbate the hazard (e.g., multiple projects cutting into the toe of a landslide) and there was an increase in fire risk that would potentially result in post-fire instability. The Burrows property and the Northwest 138 Corridor Improvement Project share a boundary with the Project. The Burrows property does not contain steep slopes that would be susceptible to landslides or slope instability. Similar to the Approved Project with Proposed Modifications, cumulative projects could include the removal of vegetation that could lead to slope instability, however, all cumulative development would be required to comply with the CBC, which includes slope stability requirements, as well as subject to their respective geotechnical report and recommendations.

The Approved Project's potential for cumulative impacts related to slope instability and landslides were analyzed in the 2019 EIR and were determined to have no cumulative impact. The proposed modifications to the Approved Project would include the introduction of BESS as a conditionally permitted use, and microgrid as a permitted use. As discussed above, these modifications would not result in increased fire risk or alter the geotechnical conditions onsite. Given that the proposed modifications would not increase risks of post-fire impacts such as flooding or landslides on site and the Project would reduce fire risk at the site through implementation of a project-specific CFPP, Fuel Modification Plan, annual fuel modification maintenance and inspection, cumulative impacts of the Approved Project with Proposed Modifications related to exposure of people to significant risks related to

runoff, post-fire instability, or drainage changes would not be significant. Although not required to ensure that this impact is not cumulatively considerable, the Climate Resolve Settlement requires the Project to establish a Good Neighbor Firewise Fund of an inflation-adjusted $500,000 annually, which provide grants to need-based applicants to be awarded by the CMG to aid communities with a population of less than 100,000 within 15 miles of the boundaries of Tejon Ranch in order to reduce off-site fire risks, increase fire prevention, protection and response measures and avoid impacts of fires for the Project's residents and neighboring communities. CMG would review applications for the fund and award grants for actions such as but not limited to, updating planning documents, developing a comprehensive retrofit strategy, implementing wildfire risk reduction standards, funding fuel and vegetation management, and performing infrastructure planning, which grants are expected to reduce cumulative fire risks in the vicinity of the Project site. CMG would provide review for compliance monitoring purposes any time Centennial files a tract map to include new or modified State or County fire prevention, protection and response requirements.

The grants shall be in support of the following actions:

- Updating planning documents and zoning ordinances, including general plans, community plans, specific plans, local hazard mitigation plans, community wildfire protection plans, climate adaptation plans, and local coastal programs to protect against the impacts of wildfires;
- Developing and adopting a comprehensive retrofit strategy;
- Funding fire-hardening retrofits of residential units and other buildings;
- Reviewing and updating the local designation of lands within the jurisdiction as very high fire hazard severity zones;
- Implementing wildfire risk reduction standards, including development and adoption of any appropriate local ordinances, rules, or regulations;
- Establishing and initial funding of an enforcement program for fuel and vegetation management;
- Performing infrastructure planning, including for access roads, water supplies providing fire protection, or other public facilities necessary to support the wildfire risk reduction standards;
- Partnering with other local entities to implement wildfire risk reduction;
- Updating local planning processes to otherwise support wildfire risk reduction;
- Completing any environmental review associated with the listed activities;
- Covering the costs of temporary staffing or consulting needs associated with the listed activities;
- Implementing community-scale risk reduction programs to become Firewise USA sites;

- Implementing resiliency plans such as resiliency centers with stable electricity supplies (e.g., microgrid, solar, and battery equipment) available to residents during times of power shutdowns or other emergencies; and

Other fire-related risk-reduction activities that may be approved by the CMG Board.

Impact Threshold - Pollutant Concentration

As described above, the Project Site is in a moderate, high, and very high FHSZ in an area that is susceptible to wildfire. The Project, combined with other projects in the region, would increase the population in the region, which may increase the potential for exposure to pollutant concentrations to occupants in the area. More specifically, the Burrows Property, Tejon Mountain Village, and the Grapevine Project all propose residential developments that would directly result in an increase in population. All cumulative projects have the potential to indirectly induce population growth through the establishment of employment opportunities and increased access in the case of the 138-improvement project. Additionally, the increased population has the potential to increase potential ignition sources to the area and wildfire risk. However, individual projects located within Los Angeles and Kern Counties are required to comply with applicable County fire and building codes, which include fire prevention and protection features that reduce the likelihood of ignition and spread of fire. These codes also protect projects from wildfires that may occur in the area through the implementation of brush management and fuel management zones, ensuring adequate water supply, preparation of fire protection plans, and other measures. As described above, proposed modifications to the Approved Project would include the introduction of a BESS. As previously discussed, the introduction of a BESS would not substantially increase fire risk at the site, and the Project's implementation of project-specific CFPP, Fuel Modification Plan, and annual fuel modification maintenance and inspection would reduce risk at the site. The Proposed Modifications would not result in an increase in fire risk at the site. The Approved Project's cumulative impacts related to fire risk was analyzed in the 2019 EIR. The 2019 EIR determined that with the inclusion of the fuel modification plan and compliance with code requirement the Approved Project would result in less than significant impacts related to fire safety.

Similar to the Project, cumulative projects in the area would be advised to follow public health and air quality agencies strategies to limit exposure to pollutant concentrations during a wildfire, which include staying indoors, limiting physical activity, reducing indoor air pollution sources, effectively using air conditioners and air filters or cleaners, creating cleaner air shelters, and using respiratory protection appropriately to reduce exposure to pollutants. Thus, cumulative impacts related to exposure of Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire would not be significant.

Impact Threshold - Emergency Response

The Project and cumulative projects could result in an increase in vehicles evacuating the area in the case of a wildfire. As described above, project modifications to the Approved Project would include the introduction of a BESS. As previously discussed, the introduction of a BESS would not substantially increase fire risk at the site. Moreover, the Project's implementation of a project-specific CFPP, Fuel Modification Plan, and annual fuel modification maintenance and inspection would reduce risk at the site. The Approved Project with Proposed Modifications would not result in an increase in fire risk or an increase in population at the Project site that could result in increased demand on public services or increased the likelihood of evacuation. Due to the phasing of the Project, there will be changes to the site over a long period of time before the Project is completely bult out, which may result in impediments to an evacuation. With incorporation of previously-adopted Mitigation Measures MM-3-7 and MM 3-8, the short and long-term operations of the Approved Project would not substantially impair evacuation or interfere with the established emergency operation plans, and impacts would be less than significant.

Similar to the Project, cumulative projects would result in additional vehicles evacuating during construction and operation. Cumulative projects have the potential to either directly or indirectly induce population growth. More specifically, the Burrows Property, Tejon Mountain Village, and the Grapevine Project all propose residential developments that would directly result in an increase in population. All cumulative projects have the potential to indirectly induce population growth through the establishment of employment opportunities and increased access in the case of the 138-improvement project. While the projects would result in an increased population to the area, resulting in additional people evacuating the area in case of a wildfire evacuation scenario, the only project that would potentially share the evacuation routes to get to I-5 with the Project would be the Burrows Property project. Any additional time resulting from an increase of vehicles on the road does not necessarily generate a greater safety risk, because evacuation orders from emergency personnel will take into full account the additional time needed should an increase in vehicles on the road occur, preventing further safety risk. Risk to nearby development, including the Project or existing communities, is assessed on a regular basis in a wildfire event. Further, the Incident Commander would direct a focused evacuation of zones situated near the WUI, which are at higher risk. Cumulative growth within the County Fire's service area has the potential to increase the demand for fire protection and emergency medical services which could impact evacuation and emergency response in the area. The Approved Project's cumulative impacts on fire and law enforcement services were analyzed in the 2019 EIR. The 2019 EIR determined that despite the Approved Project increasing demand for fire and law enforcement services, the Approved Project would include fire and law facilities to mitigate for the Approved Project. The proposed modifications to the Approved Project would not affect that conclusion.

Similar to the Project, other cumulative projects would contribute to public service facilities and or fees as applicable through the LACoFD Developer Fee Program and address any potential impediments to evacuation during project phasing. Therefore, cumulative impacts related to the conflict of an emergency response or evacuation plan would not be significant.

Impact Threshold -Infrastructure

Introduction of infrastructure can have potential to increase cumulative fire risk from the increased ignition potential from construction and maintenance activities of associated infrastructure, or by placing infrastructure in an area with highly flammable fuel loads. The Approved Project's cumulative impacts related to fire risk was analyzed in the 2019 EIR. The 2019 EIR determined that with the inclusion of the fuel modification plan and compliance with code requirement the Approved Project would result in less than significant impacts related to fire safety. As described above, project modifications to the Approved Project would include the introduction of a BESS. As previously discussed, the introduction of a BESS would not substantially increase fire risk at the site. Moreover, the Project's implementation of a project-specific CFPP, Fuel Modification Plan, and annual fuel modification maintenance and inspection would reduce risk at the site. Project utilities would be undergrounded, substantially reducing ignition risks in the area associated with construction, maintenance, or location of infrastructure. Similar to the Project, all cumulative projects would require the installation and maintenance of new utility infrastructure, some of which would include the undergrounding of utilities, substantially reducing ignition risks in the area. Cumulative projects would be required to comply with the Los Angeles and Kern County's vegetation clearance requirements, as outlined in the County Municipal Codes. Project and all other future development projects in the service area would be subject to discretionary review by County Fire Departments and would be required to comply with the County Fire Codes and other relevant County Code requirements and other applicable local codes and regulations related to fire safety, building construction, access, fire flow, and fuel modification. Thus, cumulative impacts related to the installation and maintenance of associated infrastructure would not be significant.

3.2.8 MITIGATION MEASURES

2019 Mitigation Measures

The following MMs from the 2019 EIR would be implemented to reduce the wildfire impacts of the Approved Project with Proposed Modifications:

MM 3-7 The Project Applicant/Developer shall prepare an Emergency Response Plan for the Project, which shall be updated as needed for each Tentative Map and shall be submitted to the County for review and approval. The Project Applicant/Developer shall be responsible for distributing the current Emergency Response Plan to each purchaser or tenant of each property within Centennial and shall distribute the Plan to all landowners through the Transportation Management Agency.

MM 3-8 The Project Applicant/Developer shall prepare a Traffic Control Plan in accordance with the California Manual on Uniform Traffic Control Devices. The Traffic Control Plan shall be reviewed and approved by the California Department of Transportation (Caltrans), and all construction activities in the public right-of-way shall comply with the approved Traffic Control Plan to the

satisfaction of Caltrans. Documentation of Caltrans approval shall be provided to the County for any Tentative Map involving construction within SR-138 right of way.

MM 3-9 The Project Applicant/Developer shall prepare a Fuel Modification Plan demonstrating compliance with the County Fire Code Title 32 and shall provide all new residents and business owners with recorded Covenants, Conditions, and Restrictions (CC&Rs) or disclosure statements that identify the responsibilities for maintaining the fuel modification zone(s) on their property, as defined in the approved Fuel Modification Plan. The CC&Rs or disclosure statements prepared by the Project Applicant/Developer shall be submitted to the County to confirm that new property owners would be informed of their responsibilities for maintaining the fuel modification zone(s) on their property.

MM 16-2 The Project Applicant/Developer shall pay developer fees in effect at the time of construction permit approval, in accordance with the LACoFD Developer Fee Program until such time the Project Applicant/Developer has conveyed an approved, operational fire station to the LACoFD. As an alternative to fee payment, the Developer Fee Program allows the LACoFD and the Project Applicant/Developer to agree on a program whereby the Project Applicant/Developer would provide land and would construct and equip the fire stations required for the Project in exchange for a credit towards the Project's fee payments.

MM 16-3 The Project Applicant/Developer shall provide land, convey title, and construct and equip, to the specifications and requirements of the LACoFD, for up to four new Fire Stations to the LACoFD. The approved final plans and specifications for the Project shall identify locations of the fire stations. The LACoFD shall have final approval over the fire station site locations. The timing for the construction of the on-site fire stations shall be established by the LACoFD dependent upon the phasing of development, with the first on-site fire station operational no later than the time the 1,000th dwelling unit is built on site

MM 16-4 The Project Applicant/Developer shall pay Law Enforcement Facilities Mitigation Fee (LEFMF) to the LASD pursuant to the requirements established in County Ordinance No. 2008-0033. The amount of fees to be paid would be determined based on the established fee in Section 22.74.030 of the County Code. The Project incorporates a temporary "store front" sub-station, followed by construction of a permanent LASD Station included on the Project site, in lieu of a portion of the LEFMF, as allowed under Section 22.74.090 (Consideration in Lieu of Fee) of the County Code. Costs associated with the construction of the temporary "store front" sub-station and permanent LASD Station would be credited against the LEFMF. Prior to completion of the permanent LASD Station, the "store front" sub-station may be located on site

in Village 1 on the north side of the SR-138. This temporary sub-station shall be properly outfitted in accordance with applicable occupancy requirements of the LASD for such "store front" facilities and shall be operational prior to the approval of the first certificate of occupancy for the first phase of Project development. The Centennial Land Use Plan identifies a conceptual location for one LASD Station in the Business Park area on the Project site north of the SR-138. The permanent LASD Station shall be constructed immediately following completion of the first phase of development. The LASD shall have final approval over the temporary sub-station and permanent LASD Station site locations.

3.2.9 REFERENCES

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