PUBLIC REVIEW DRAFT

DIXON RANCH RESIDENTIAL PROJECT ENVIRONMENTAL IMPACT REPORT

STATE CLEARINGHOUSE NO. 2012062023

LSA

November 2014

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STATE CLEARINGHOUSE NO. 2012062023

Submitted to:

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I. INTRODUCTION

A. PURPOSE OF THE EIR

In compliance with the California Environmental Quality Act (CEQA), this report describes the environmental consequences of the Dixon Ranch Residential Project (project) proposed for an approximately 280.27 acre site in the unincorporated community of El Dorado Hills in western El Dorado County.

El Dorado County is the Lead Agency for environmental review of the proposed project. This Environmental Impact Report (EIR) will be used by the County decision-makers, responsible agencies, and the public in their review of the proposed project and associated approvals, including those described in Chapter III, Project Description. This EIR also examines alternatives to the proposed project and recommends mitigation measures to reduce or avoid potentially significant physical impacts.

B. PROPOSED PROJECT

The project site comprises four parcels which include APNs: 126-020-01, 126-020-02, 126-020-03, 126-020-04, and 126-150-23. The project site is south of Green Valley Road, near its intersection with Malcolm Dixon Road. The project is generally surrounded by residential uses. Existing or approved adjacent subdivisions include Green Springs Ranch to the east and southeast, Serrano to the southwest, and Highland View to the west.

The proposed project would subdivide approximately 280 acres, creating 605 residential lots. One existing vacant and dilapidated residence on the project site would be demolished. One 5-acre lot would be created, which would include the existing Dixon Residence; other than the creation of the 5-acre parcel, no changes to the Dixon Residence are proposed as part of the project. The proposed project would result in the creation of 605 residential parcels containing 604 new single-family detached residential units and the retention of the Dixon Residence. Approximately 160 of these units would be age restricted to older adults. The project includes approximately 84 acres (30 percent) of open space, including parks, trails, landscaped lots, and native open spaces. The project includes on-site and off-site infrastructure to serve the development. Construction of a clubhouse for the age restricted units is also proposed. The project would be divided into two phases that relate to resolution of issues associated with the County's Oak Woodland Management Plan.

Required project approvals would include: a General Plan Amendment (File No. A11-0006); Zone Change (File No. Z11-0008); Planned Development (File No. PD11-0006); Tentative Map (File No. TM11-1505); Development Agreement (File No. DA14-0001); annexation into the El Dorado Irrigation District; annexation into the El Dorado Hills Community Service District; and annexation into the El Dorado Hills County Water District (El Dorado Hills Fire Department).

C. EIR SCOPE

El Dorado County circulated a Notice of Preparation (NOP) for the proposed project, which notified responsible agencies and interested parties an EIR would be prepared for the project and indicated the environmental topics anticipated to be addressed in the EIR. The NOP was published on December 14, 2012, and was mailed to public agencies, organizations, and individuals likely to be interested in the potential impacts of the project. Comments on the NOP were received by the County and considered during preparation of this EIR.

As a result of an evaluation of the potential environmental impacts of the project, consultation with County staff, and review of comments received as part of the scoping process, the following environmental topics are addressed as separate sections in this EIR:

- Land Use and Planning Policy
- Population and Housing
- Transportation and Circulation
- Air Quality
- Greenhouse Gas Emissions
- Noise
- Biological Resources
- Cultural Resources
- Geology, Soils, and Seismicity
- Hydrology and Water Quality
- Hazards and Hazardous Materials
- Utilities
- Public Services
- Visual Resources

Please note that Agriculture, Forestry and Mineral Resources are discussed in Section IV.A, Land Use and Planning Policy, and Recreation is discussed in Section IV.M, Public Services.

D. REPORT ORGANIZATION

This Draft EIR is organized into the following chapters:

- *Chapter I – Introduction*: Discusses the overall Draft EIR purpose, provides a summary of the proposed project, describes the scope, and summarizes the organization of the Draft EIR.
- *Chapter II – Summary*: Provides a summary of the impacts that would result from implementation of the proposed project, describes mitigation measures recommended to reduce or avoid significant impacts, and describes the alternatives to the proposed project.

- *Chapter III – Project Description*: Provides a description of the proposed project site, the project objectives, the proposed project; discretionary actions, and uses of this Draft EIR.
- *Chapter IV – Setting, Impacts, and Mitigation Measures*: Describes the following for each environmental technical topic: existing conditions (setting), potential environmental impacts and their level of significance, and mitigation measures recommended to mitigate identified impacts. Potential adverse impacts are identified by levels of significance, as follows: less-than-significant impact (LTS), significant impact (S), and significant and unavoidable impact (SU). The significance of each impact is categorized before and after implementation of any recommended mitigation measures(s).
- *Chapter V – Alternatives*: Provides an evaluation of alternatives to the proposed project.
- *Chapter VI – Other CEQA Considerations*: Provides an analysis of effects found not to be significant, growth-inducing impacts, unavoidable significant environmental impacts, significant irreversible changes, and cumulative impacts.
- *Chapter VII – Report Preparation*: Identifies preparers of the Draft EIR, references used, and the persons and organizations contacted.
- *Appendices*: The appendices contain the NOP scoping comments, technical calculations, and other documentation prepared in conjunction with this Draft EIR.

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II. SUMMARY

A. PROJECT UNDER REVIEW

This EIR has been prepared to evaluate the environmental consequences of approval and implementation of the Dixon Ranch Residential Project (proposed project). The proposed project would subdivide approximately 280 acres, creating 605 residential lots. One existing vacant and dilapidated residence on the project site would be demolished. One 5-acre lot would be created, which would include the existing Dixon Residence; other than the creation of the 5-acre parcel, no changes to the Dixon Residence are proposed as part of the project. The proposed project would result in the creation of 605 residential parcels containing 604 new single-family detached residential units and the retention of the Dixon Residence. Approximately 160 of these units would be age restricted to older adults. The project includes approximately 84 acres (30 percent) of open space, including parks, trails, landscaped lots, and native open spaces. The project includes on-site and off-site infrastructure to serve the development. Construction of a clubhouse for the age restricted units is also proposed. The project would be divided into two phases that relate to resolution of issues associated with the County's Oak Woodland Management Plan.

Required project approvals would include: a General Plan Amendment (File No. A11-0006); Zone Change (File No. Z11-0008); Planned Development (File No. PD11-0006); Tentative Map (File No. TM11-1505); Development Agreement (File No. DA14-0001); annexation into the El Dorado Irrigation District; annexation into the El Dorado Hills Community Service District; and annexation into the El Dorado Hills County Water District (El Dorado Hills Fire Department).

B. SUMMARY OF IMPACTS AND MITIGATION MEASURES

This summary provides an overview of the analysis contained in Chapter IV, Setting, Impacts and Mitigation Measures. CEQA requires a summary to include discussion of: 1) potential areas of controversy; 2) significant impacts; 3) recommended mitigation measures; 4) alternatives to the project; and 5) cumulative impacts.

1. Potential Areas of Controversy

Comments on the Notice of Preparation (NOP), and comments raised during the scoping period, included the following issue areas: fire hazards; traffic and circulation; population and housing; school services; asbestos; fire service; air quality; greenhouse gas emissions; wastewater service; geology; hydrology and well water; water service; biological resources; land use density; noise; and visual resources. The NOP, comments received in response to the NOP, and a summary of the comments received at the scoping session are included in Appendix A of this EIR.

2. Significant Impacts

Under CEQA, a significant impact on the environment is defined as "…a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic

significance." Impacts in the following areas would be significant without the implementation of mitigation measures, but would be reduced to a less-than-significant level if the mitigation measures recommended in this report are implemented:

- Biological Resources
- Cultural Resources
- Geology, Seismicity and Soils
- Hydrology and Water Quality
- Hazardous and Hazardous Materials
- Utilities

3. Significant and Unavoidable Impacts

Implementation of the proposed project would result in the following significant and unavoidable impacts:

- Traffic impacts to the following intersections would be considered significant and unavoidable until the identified mitigation measures are implemented:
    - Intersection #12, El Dorado Hills Boulevard/Francisco Drive [Existing (2013) Plus Proposed Project Scenario]
    - Intersection #2, Green Valley Road/El Dorado Hills Boulevard/Salmon Falls Road [Existing Plus Approved Projects (2018) Plus Project and Cumulative (2025) Plus Proposed Project Scenario]
- Implementation of the proposed project would add additional queue lengths to Intersection #2, Green Valley Road/El Dorado Hills Boulevard/Salmon Falls Road, which would be considered significant and unavoidable until the identified improvement is implemented.
- Construction of the proposed project would generate air pollutant emissions that could violate air quality standards.
- Operation of the proposed project would generate air pollutant emissions that would exceed the El Dorado AQMD criteria and could contribute substantially to a violation of air quality standards.
- Operation of the proposed project would result in a significant cumulative net increase in criteria pollutant emissions.
- Construction and operation of the proposed project – in combination with emissions from other past, present, and reasonably probable future projects – would result in GHG emissions that would have a significant physical adverse impact and would cumulatively contribute to global climate change.
- The proposed project would conflict with plans adopted for the purpose of reducing GHG emissions.
- Project construction activities could result in noise levels in excess of the County's noise performance standards for construction activities as measured at adjacent residential land uses.

4. Alternatives to the Project

The following alternatives were evaluated within the EIR:

- The CEQA-required **No Project alternative**. This alternative assumes that the project site would be developed under the existing General Plan and Zoning designations.
- The **Small Lot Clustered Development alternative**. This alternative assumes that the project would include 605 lots, but that the lots would be smaller to allow for more preservation of open space (with the exception of the Dixon Residence lot).
- The **Reduced Build alternative**. This alternative assumes that the project site would include 192 units under a Medium Density General Plan Amendment.
- The **Non-Gated Development Alternative variant**. The non-gated development project variant assumes that the project site would be developed as currently proposed, except that the proposed EVA on Lima Way would be an open public roadway with travel lanes in each direction.

5. Cumulative Impacts

Implementation of the proposed project would result in the following cumulative impacts:

- Intersection #2, Green Valley Road/El Dorado Hills Boulevard/Salmon Falls Road, would operate at LOS F during the AM and PM peak hours without the project, and the project contributes more than 10 peak-hour trips to the intersection during both peak hours under the Cumulative (2025) Plus Proposed Project scenario. This impact is considered significant and unavoidable until the identified improvement is constructed.
- Operation of the proposed project would result in a significant cumulative net increase in criteria pollutant emissions.
- Construction and operation of the proposed project would result in GHG emissions that would have a significant physical adverse impact and would cumulatively contribute to global climate change.

C. SUMMARY TABLE

Information in Table II-1, Summary of Impacts and Mitigation Measures, has been organized to correspond with environmental issues discussed in Chapter IV. The table is arranged in four columns: (1) impacts; (2) level of significance prior to mitigation; (3) mitigation measures; and (4) level of significance after mitigation. Levels of significance are categorized as follows:

SU = Significant and Unavoidable
S = Significant
LTS = Less Than Significant

For a complete description of potential impacts and recommended mitigation measures, please refer to the specific topical discussions in Chapter IV.

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
A. LAND USE AND PLANNING POLICY			
There are no significant impacts to land use and planning policy.			
B. POPULATION AND HOUSING			
There are no significant impacts to population and housing.			
C. TRANSPORTATION AND CIRCULATION			
TRANS-1: Intersection #2, Green Valley Road/El Dorado Hills Boulevard/Salmon Falls Road, would operate at LOS F during the AM peak hour with the proposed project under the Existing (2013) Plus Proposed Project scenario. This is a significant impact.	S	TRANS-1: The project applicant shall be responsible for modifying lane configuration on the southbound approach to result in one left-turn lane, one through lane, and one right-turn lane. These improvements are subject to review and approval by the Community Development Agency, Transportation Division.	LTS
TRANS-2: Intersection #12, El Dorado Hills Boulevard/Francisco Drive, would operate at LOS F during the AM and PM peak hours without the project, and the project contributes more than 10 peak hour trips to the intersection during both peak hours under the Existing (2013) Plus Proposed Project scenario. This is a significant impact.	S	TRANS-2: The project applicant shall pay TIM fees for the project consistent with the County's CIP program. Improvements to this intersection include the addition of an eastbound channelized right-turn lane on Francisco Drive and southbound receiving lane on El Dorado Hills Boulevard as identified in the County's CIP Project #71358 (Francisco Drive Right Turn Pocket). Completion is scheduled within the County's 10-year CIP.	SU [until the improvements are constructed] LTS [after the improvements are constructed]
TRANS-3: Intersection #2, Green Valley Road/El Dorado Hills Boulevard/Salmon Falls Road operates at LOS F during the AM peak hour without the project, and the project contributes more than 10 peak hour trips to the intersection during the AM peak hour and results in LOS F during the PM peak hour under the Existing Plus Approved Projects (2018) Plus Proposed Project scenario. This is a significant impact.	S	TRANS-3: In addition to Mitigation Measure TRANS-1, the project applicant shall pay TIM fees for the project consistent with the County's CIP program. Additional improvements to this intersection include changing the northbound and southbound signal phasing from split-phased to concurrent protected left turns. This work is included in the County's CIP Project #73151 (Green Valley Road Traffic Signal Interconnect), and completion is scheduled within the County's 10-year CIP.	SU [until the improvements are constructed] LTS [after the improvements are constructed]

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
TRANS-4: Intersection #4, Green Valley Road/Loch Way operates at LOS F during the PM peak hour with the project under the Existing Plus Approved Projects (2018) Plus Proposed Project scenario. This is a significant impact.	S	TRANS-4: The project applicant shall be responsible for the addition of a two-way left-turn lane along Green Valley Road in the immediate vicinity of the intersection with Loch Way. This improvement would provide a left-turn lane for westbound traffic on Green Valley Road to turn left onto Loch Way and would allow for vehicles making a northbound left-turn movement from Loch Way onto Green Valley Road to clear eastbound traffic and wait for a gap in westbound traffic to merge onto westbound Green Valley Road.	LTS
TRANS-5: Intersection #2, Green Valley Road/El Dorado Hills Boulevard/Salmon Falls Road, operates at LOS F during the AM and PM peak hours without the project, and the project contributes more than 10 peak hour trips to the intersection during both peak hours under the Cumulative (2025) Plus Proposed Project scenario. This is a significant impact.	S	TRANS-5: In addition to implementation of Mitigation Measures TRANS-1 and TRANS-3, the project applicant shall pay TIM fees towards the installation of an additional through lane in each direction along Green Valley Road if this improvement is included in the 10-year County CIP. Payment of TIM fees is considered to be the project's proportionate fair share towards mitigation of this impact. If the additional through lanes are not included in the 10-year CIP prior to this impact being triggered (issuance of the first building permit), the applicant shall construct the improvements and may be eligible for reimbursement of costs in excess of the project's fair share, subject to a reimbursement agreement with the County.	SU [until the improvements are constructed] LTS [after the improvements are constructed]
TRANS-6: Intersection #4, Green Valley Road/Loch Way, would operate at LOS F during the PM peak hour with the project under the Cumulative (2025) Plus Proposed Project scenario. This is a significant impact.	S	TRANS-6: Implement Mitigation Measure TRANS-4.	LTS

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
TRANS-7: Intersection #7, Green Valley Road/Deer Valley Road, operates at LOS E during the PM peak hour without the project, and the project contributes more than 10 peak hour trips to the intersection during the PM peak hour under the Cumulative (2025) Plus Proposed Project scenario. This is a potentially significant impact.	S	TRANS-7: In order to ensure proper timing for the installation of the traffic signal control, the applicant shall be responsible to perform traffic signal warrants and LOS analysis at this intersection with each final map in accordance with the Manual on Uniform Traffic Control Devices (version in effect at the time of application). If traffic signal warrants are met, or LOS E reached at the intersection at the time of application for final map (including the lots proposed by that final map), the applicant shall construct the improvements prior to issuance of the first certificate of occupancy for any lot within that final map. If traffic signal warrants are not met or LOS E is not reached upon application for the last final map within the project, the project applicant shall pay its TIM fees toward the installation of a traffic signal control at this intersection. Payment of TIM fees is considered to be the project's proportionate fair share towards mitigation of this impact. If the traffic signal control at this intersection is constructed by the County or others prior to triggering of mitigation by the project, payment of TIM fees is considered to be the projects proportionate fair share towards mitigation of this impact. Traffic signal controls constructed by the project applicant may be eligible for reimbursement of costs in excess of the project's fair share, subject to a reimbursement agreement with the County.	LTS

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
TRANS-8: Intersection #24, Silva Valley Parkway/ Appian Way, operates at LOS F during the PM peak hour without the project, and the project contributes more than 10 peak hour trips to the intersection during the PM peak hour and results in LOS F during the AM peak hour under the Cumulative (2025) Plus Proposed Project scenario. This is a significant impact.	S	TRANS-8: In order to ensure proper timing for the installation of the traffic signal control, the applicant shall be responsible to perform traffic signal warrants and LOS analysis at this intersection with each final map in accordance with the Manual on Uniform Traffic Control Devices (version in effect at the time of application). If traffic signal warrants are met, or LOS F reached at the intersection at the time of application for final map (including the lots proposed by that final map), the applicant shall construct the improvements prior to issuance of the first certificate of occupancy for any lot within that final map. If traffic signal warrants are not met or LOS F is not reached upon application for the last final map within the project, the project shall pay its TIM fees toward the installation of a traffic signal control at this intersection. Payment of TIM fees is considered to be the project's proportionate fair share towards mitigation of this impact. If the traffic signal control at this intersection is constructed by the County or others prior to triggering of mitigation by the project, payment of TIM fees is considered to be the projects proportionate fair share towards mitigation of this impact. Traffic signal controls constructed by the project may be eligible for reimbursement of costs in excess of the project's fair share, subject to a reimbursement agreement with the County.	LTS

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
TRANS-9: Implementation of the proposed project would add additional queue lengths to various intersections. This would result in a significant impact.	S	TRANS-9: The applicant shall construct intersection improvements as described below: • **Intersection #2, Green Valley Road/El Dorado Hills Boulevard/Salmon Falls Road** o **WBL:** If this improvement is not constructed with TRANS-5 prior to issuance of the project's first building permit, the westbound left-turn pocket at this intersection from Green Valley Road to El Dorado Hills Boulevard shall be extended to 250 feet (from 105 feet) to accommodate future traffic projections. This extension would require widening Green Valley Road between El Dorado Hills Boulevard and Silva Valley Parkway. The documented queuing currently is utilizing the entire storage space between intersections, but is not exceeding it. This queuing would exceed the storage capacity with future traffic, as well as with the addition of the proposed project. To the extent the cost of this improvement exceeds the project's proportionate fair share, the applicant may be eligible for reimbursement.	SU [until the improvement is constructed] LTS [after construction of the improve-ment is completed]
		o **WBT/R:** If this improvement is not constructed with TRANS-5 prior to issuance of the project's first building permit, to accommodate the westbound through queue, an additional westbound through lane shall be provided on Green Valley Road between El Dorado Hills Boulevard and Silva Valley Parkway that is long enough to accommodate the anticipated queuing and other operational considerations. To the extent the cost of this improvement exceeds the project's proportionate fair share, the applicant may be eligible for reimbursement.	SU [until the improvement is constructed] LTS [after construction of the improve-ment is completed]

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
TRANS-9 *Continued*		o **NBT/R:** The northbound through queue extends beyond the next intersection to the south, Timberline Ridge Drive. To prevent blocking of traffic entering and exiting Timberline Ridge Drive, "Keep Clear" markings shall be added to northbound El Dorado Hills Boulevard lanes in front of the Timberline Ridge Drive intersection. There is approximately 960 feet beyond Timberline Ridge Drive until the next intersection to the south that would accommodate the queue.	LTS
		• **Intersection #12, El Dorado Hills Boulevard/Francisco Drive** o **SBT:** The southbound through queue extends beyond the next intersection to the north, Telegraph Hill Road. To prevent blocking of traffic entering and exiting Telegraph Hill Road, "Keep Clear" markings shall be added to southbound El Dorado Hills Boulevard lanes in front of the Telegraph Hill Road intersection. There is approximately 440 feet beyond Telegraph Hill Road until the next intersection to the north that would accommodate the queue.	LTS
D. AIR QUALITY			
AIR-1: Construction activities could result in increased airborne asbestos.	S	AIR-1: The project applicant shall comply with El Dorado County AQMD Rule 223-2 Fugitive Dust – Asbestos Hazard Mitigation. The project sponsor shall prepare an Asbestos Dust Mitigation Plan Application, including an outline of the areas of disturbance that are located in the area designated "more likely to contain asbestos or fault line", which shall be submitted to and approved by the El Dorado County AQMD prior to the start of project construction.	LTS

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
AIR-2: Construction of the proposed project would generate air pollutant emissions that could violate air quality standards.	S	AIR-2: Consistent with guidance from the El Dorado County AQMD, the following actions shall be required in relevant construction contracts and specifications for the project: • Conduct watering as necessary for visible emissions not to exceed more than 25 feet beyond the active cut areas or beyond the property line in any direction (Rule 223-2.4.A). • For all disturbed surface areas (except completed grading areas), apply dust suppression in a sufficient quantity and frequency to maintain a stabilized surface; any areas which cannot be stabilized, as evidenced by wind driven dust, must have an application of water at least twice per day to at least 80 percent of the unstabilized area. • Water all unpaved roads used for any vehicular traffic at least once per every two hours of active operations and restrict vehicle speed to 15 mph (Rule 223-2.4 B). • Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet and width of at least 20 feet or pave from the point of intersection with the public paved road surface, and extending for a centerline distance of at least 25 feet and width of at least 20 feet, and install a track-out control device immediately adjacent to the paved surface such that exiting vehicles do not travel on any unpaved road surface after passing through the track-out control device.	SU

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
AIR-2 *Continued*		• The project's prime contractor shall provide the El Dorado County APCD an approved plan demonstrating that heavy-duty (i.e., greater than 50 horsepower) off-road vehicles to be used in the construction project, and operated by either the prime contractor or any subcontractor, will achieve, at a minimum a fleet-averaged 15 percent NO_x reduction compared to the most recent ARB fleet average. Successful implementation of this measure requires the prime contractor to submit a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during the construction project. The inventory shall include the horsepower rating, engine production year, and hours of use or fuel throughput for each piece of equipment. The inventory list shall be updated and submitted monthly throughout the duration of when the construction activity occurs. • Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure, Title 13, Section 2485 of the California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. • During construction, all self-propelled diesel-fueled engines greater than 25 horsepower shall be in compliance with the ARB Regulation for In-Use Off-Road Diesel Fueled Fleets.	

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
AIR-3: Operation of the proposed project would generate air pollutant emissions that would exceed the El Dorado AQMD criteria and could contribute substantially to a violation of air quality standards.	S	AIR-3: The project shall incorporate the following design elements into the project: • The project shall only permit natural gas fireplaces. • Design of the project shall improve the pedestrian network both on the project site and through connections adjacent to the project. • Design of the project shall not restrict resident access to public transit. • Garages included as part of the project shall be electric vehicle charging compatible through inclusion of a dedicated electrical outlet. • The project shall install Energy Star or ground source heat pumps. • The project sponsor shall consult the El Dorado County AQMD on the installation of ozone destruction catalysts on air conditioning systems. • The project sponsor shall provide the option of roof-mounted photovoltaic energy systems on new homes.	SU
AIR-4: Operation of the proposed project would result in a significant cumulative net increase in criteria pollutant emissions.	S	AIR-4: Implement Mitigation Measure AIR-3. As shown in Table IV.D-8, even with mitigation, the project would continue to exceed the maximum daily emission threshold. This impact would be significant and unavoidable.	SU

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
E. GREENHOUSE GAS EMISSIONS			
GHG-1: Construction and operation of the proposed project – in combination with emissions from other past, present, and reasonably probable future projects – would result in GHG emissions that would have a significant physical adverse impact and would significantly and cumulatively contribute to global climate change. The project's incremental impacts from GHG emissions are also cumulatively considerable.	S	GHG-1: The following measures shall be incorporated into project design to reduce project GHG emissions: • Implement Mitigation Measures AIR-2 and AIR-3. • Building construction shall exceed the energy efficiency standards of Title 24 through application of the 2013 California Green Building Standards Code mandatory measures adopted by the County. • All homes shall be equipped with exterior outlets on structures to facilitate the use of electric powered landscape equipment. • All new homes shall be equipped with high efficiency lighting. • The project applicant shall develop a water conservation strategy to reduce indoor and outdoor water use by approximately 20 percent over standard building construction practices. o The project applicant shall implement the 2013 Plumbing Code to reduce indoor and outdoor water use by installing low-flow bathroom faucets, kitchen faucets, toilets and showers, and project landscaping that utilizes water-efficient plants and irrigation systems. • The project applicant shall ensure the recycling and composting services available from El Dorado County Disposal are provided to the residents of the project site. • The project shall provide a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site.	SU

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
GHG-1 *Continued*		• The project shall incorporate all 2013 California Green Building Standard Code Residential Voluntary Tier 1 Measures (Residential Voluntary Measures included in Appendix A4, Division A4.6, Tier 1), except the following: o Section A4.106.8 regarding installation of Level 2 EV charging stations in garages and/or parking lots; o Section A4.106.4 regarding permeable paving utilized for parking, walking or patio surfaces; o Section A4.403.2 regarding reduction in cement use; and o Section A4.405.3 regarding post-consumer and pre-consumer recycled content value (RCV) materials use in the project.	
GHG-2: The proposed project would conflict with plans adopted for the purpose of reducing GHG emissions.	S	GHG-2: Implement Mitigation Measure GHG-1. Even with the implementation of comprehensive measures to reduce GHG emissions, the project would still have a significant and unavoidable impact.	SU

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
F. NOISE			
NOI-1: Project construction activities could result in noise levels in excess of the County's noise performance standards for construction activities as measured at adjacent residential land uses.	S	NOI-1: The applicant and/or project contractor shall implement the following measures: • All construction equipment must have appropriate sound muffling devices, which shall be properly maintained and used at all times such equipment is in operation. • The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site. • The construction contractor shall locate on-site equipment staging areas so as to maximize the distance between construction-related noise sources and noise-sensitive receptors nearest the project site during the construction period. • All noise producing construction activities, including warming-up or servicing equipment and any preparation for construction, shall be limited to the hours between 7:00 a.m. and 7:00 p.m. on weekdays, and between 8:00 a.m. and 5:00 p.m. on weekends and federally recognized holidays.	SU

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
NOI-2: Implementation of the project could result in traffic noise levels experienced at proposed on-site sensitive land uses in excess of normally acceptable standards for new residential development on Lots 2, 3, and 4.	S	NOI-2: If residential structures are proposed within 294 feet as measured from the Centerline of Green Valley Road, prior to issuance of a grading permit for Lots 2, 3, or 4, the project applicant shall prepare a site specific noise analysis demonstrating that measures have been incorporated into the lot site plan that reduce traffic noise to below the County's normally acceptable standard of 60 dBA L_{dn}. Measures to reduce impacts could include the following to achieve the County's noise standard: • The developer shall construct a berm, or soundwall, or berm/ soundwall combination. This berm/soundwall shall extend 100 feet southward from the Lot Z property line along the proposed Lot 2 western property line. This berm/soundwall shall also extend along the eastern property line of the proposed Lot 3 all the way to the project entrance. In addition, for any provision of direct access to Lot 2 or Lot 3 from Green Valley Road, the berm/ soundwall shall include a wrap-around design along the entrance drive to this lot in such a manner as to completely block the line-of-sight from the roadway to the outdoor use areas of Lot 2 or Lot 3. The required height of the soundwall/berm shall be determined based on the placement of the residential structure. • The developer shall also construct a berm, or soundwall, or berm/soundwall along the entire length of the eastern property line of the proposed Lot 4 (facing Green Valley Road). The berm/soundwall shall wrap-around the northwestern property line of Lot 4, along the project's northern entrance roadway, for an additional 100 feet. The required height of the soundwall/berm shall be determined based on the placement of the residential structure.	LTS

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
G. BIOLOGICAL RESOURCES			
BIO-1: The proposed project may result in the destruction or abandonment of nests occupied by special-status or non-special-status bird species that are protected under the Migratory Bird Treaty Act and Fish and Game Code.	S	BIO-1: A qualified biologist shall conduct surveys prior to tree pruning, tree removal, transplantation, ground disturbing activities, or construction activities on the site to locate active nests containing either viable eggs or young birds. Preconstruction surveys are not required for tree removal, tree pruning, or construction activities outside the nesting period. If construction would occur during the nesting season (February 1 to August 31), preconstruction surveys shall be conducted no more than 14 days prior to the start of pruning, construction, or ground disturbing activities. Preconstruction surveys shall be repeated at 14-day intervals until construction has been initiated in the area after which surveys can be stopped. Locations of active nests containing viable eggs or young birds shall be described and protective measures implemented until the nests no longer contain eggs or young birds. Protective measures shall include establishment of clearly delineated exclusion zones (i.e., demarcated by uniquely identifiable fencing, such as orange construction fencing or equivalent) around each nest site as determined by a qualified wildlife biologist, taking into account the species of birds nesting on-site and their tolerance for disturbance. In general, exclusion zones shall be a minimum of 300 feet from the drip line of the nest tree or nest for raptors and 50 feet for passerines and other species. The active nest sites within an exclusion zone shall be monitored on a weekly basis throughout the nesting season to identify signs of disturbance or to determine if each nest no longer contains eggs or young birds. The radius of an exclusion zone may be increased by the project biologist if project activities are determined to be adversely affecting the nesting birds. Exclusion zones may be reduced by the project biologist only in consultation with CDFW. The protection measures shall remain in effect until the young have left the nest and are foraging independently or the nest is no longer active. For any project-related activities involving the removal of trees during the nesting season, a report shall be submitted to the County of El Dorado and CDFW once per year documenting the observations and actions implemented to comply with this mitigation measure.	LTS

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
BIO-2: Implementation of the proposed project would require the removal of oak trees that are protected under County guidelines and General Plan Policy 7.4.4.4 and which would be a significant impact.	S	BIO-2: The project applicant shall implement the following two-part measure: • BIO-2a: The project applicant shall comply with County oak tree mitigation requirements to the satisfaction of the Development Services Division, and per the requirements of Option A of Policy 7.4.4.4. Prior to providing any permits for the project, the project applicant shall prepare and submit an Oak Tree Removal Mitigation Plan to the satisfaction of and approval by the County. Per the Arborist Report for Phase 1 of the project, mitigation for oak tree removal will generally consist of planting up to 4.48 acres of oak trees at a 1:1 ratio per the acres actually removed up to the allowable 10 percent canopy reduction area. The Mitigation Plan shall identify the locations for all on-site and off-site planting areas as well as all conditions associated with the planting. At a minimum, all tree planting for this mitigation measure will comply with the County's target density of 200 trees per acre and other guidelines set forth under Option A. The Mitigation Plan shall also identify measures to protect oak trees adjacent to the construction areas that will not be removed. • BIO-2b: The project applicant shall provide a tentative map and development plan for Phase 2 of the project. Phase 2 of the project will undergo additional CEQA review (as necessary) and must adhere to all provisions and mitigations outlined in the Option B Oak Tree Canopy Mitigation Plan. Option B mitigations and measures may include the following: prepare an Oak Tree Removal Mitigation Plan, to the satisfaction of and approval by the County; payment of a fee to the County, offsite permanent preservation and/or dedication per an easement of oak woodlands; inclusion and permanent protection of additional oak woodlands as part of the project to offset tree removals or other feasible measures identified by the County.	LTS

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
H. CULTURAL RESOURCES			
CULT-1: Ground disturbing activities associated with site preparation and the construction of the proposed project could result in the destruction of historic and prehistoric artifacts on the project site.	S	CULT-1: Protective fencing shall be placed around the Dixon Ranch Stone Corral, Bedrock Mortars, and Dry Laid Rock Walls during construction of the proposed project. Protection and preservation of these features should be considered for incorporation into the site plan. If ground disturbance will occur with 20 meters of the bedrock mortars, an archaeological monitor should be present, to ensure protection of these resources. If these features need to be removed for construction of the project, the following activities are recommended: • Undertake photo-documentation and prepare scaled drawings of the corral and dry-laid rock walls, and bedrock mortar. • Consult with tribal leaders to consider the possible removal of the bedrock mortars to a location where they can be preserved and interpreted, such as the Shingle Springs Rancheria, 5281 Honpie Rd, Placerville, CA 95667.	LTS
CULT-2: Ground-disturbing construction associated with the project may result in impacts to unidentified historical archaeological deposits that may qualify as historical or archaeological resources under CEQA.	S	CULT-2: A qualified archaeologist shall monitor ground-disturbing project activities at the project site and along the off-site sewer alignment. Archaeological monitors must be empowered to halt construction activities at the location of the discovery to review possible archaeological materials and to protect the resource while the finds are being evaluated. Monitoring shall continue until, in the archaeologist's judgment, archaeological deposits are not likely to be encountered. If archaeological deposits are discovered during project activities, all work within 100 feet of the discovery shall be redirected until the archaeological monitor assesses the situation, consults with agencies as appropriate, and provides recommendations for the treatment of the discovery. Adverse effects to archaeological deposits should be avoided by project activities. If such deposits cannot be avoided, they shall be evaluated for their California Register of Historical Resources	LTS

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
CULT-2 *Continued*		eligibility. If the deposits are not eligible, a determination shall be made as to whether it qualifies as a "unique archaeological resource" under CEQA. If the deposits are neither a historical nor unique archaeological resource, avoidance is not necessary. Adverse effects to significant sites that cannot be avoided, or sites that cannot be preserved, must be mitigated. Mitigation can include, but is not necessarily limited to, excavation of the deposit in accordance with a data recovery plan (see CEQA Guidelines Section 15126.4(b)(3)(C)) and standard archaeological field methods and procedures; laboratory and technical analyses of recovered archaeological materials; preparation of a report detailing the methods, findings, and significance of the archaeological site and associated materials; and accessioning of archaeological materials and a technical data recovery report at a curation facility. Upon completion of the monitoring, the archaeologist should prepare a report that describes the results of the monitoring, including any measures that may have been implemented for mitigation of impacts to significant archaeological deposits identified during monitoring. The report should be submitted to the El Dorado County Planning Division and the Northwest Information Center.	
CULT-3: Project ground-disturbing activities may disturb human remains, including those interred outside of formal cemeteries, and may result in impacts to cultural resources under CEQA.	S	CULT-3: If human remains are encountered, these remains shall be treated in accordance with Health and Safety Code Section 7050.5 and *CEQA Guidelines* Section 15064.5(e). The project applicant shall inform its contractor(s) of the appropriate protocols in the event that human remains are unearthed by including the following directive in contract documents:	LTS

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
CULT-3 *Continued*		*If human remains are encountered during project activities, work within 100 feet of the discovery shall be redirected and the El Dorado County Coroner notified immediately. At the same time, an archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.* The County shall verify that the language has been included in the contract documents before issuing a grading permit. Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the MLD. The report should be submitted to the El Dorado County Planning Services Division and the North Central Information Center.	

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
CULT-4: Ground disturbing activities associated with project implementation may destroy unique paleontological resources.	S	CULT-4: The project applicant shall include the following directive on the grading plans: *If paleontological resources are encountered during project subsurface construction, all ground-disturbing activities within 100 feet shall be redirected and a qualified paleontologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Project personnel shall not collect or move any paleontological materials. Paleontological resources include fossil plants and animals, and such trace fossil evidence of past life as tracks. Ancient marine sediments may contain invertebrate fossils such as snails, clam and oyster shells, sponges, and protozoa; and vertebrate fossils such as fish, whale, and sea lion bones. Vertebrate land mammals may include bones of mammoth, camel, saber tooth cat, horse, and bison. Paleontological resources also include plant imprints, petrified wood, and animal tracks.* The County shall verify that the language has been included in the grading plans before issuing a grading permit.	LTS

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
CULT-4 *Continued*		Adverse effects to such deposits shall be avoided by project activities. If avoidance is not feasible, the paleontological resources shall be evaluated for their significance. If the resources are not significant, avoidance is not necessary. If the resources are significant, project activities shall avoid disturbing the deposits, or the adverse effects of disturbance shall be mitigated. Mitigation may include monitoring, recording the fossil locations, data recovery and analysis, a final report, and accessioning the fossil materials and technical report to a paleontological repository. Upon completion of the paleontological assessment, a report shall be prepared documenting the methods, results, and recommendations of the assessment. The report shall be submitted to the El Dorado County Planning Services Division and, if paleontological materials are recovered, a paleontological repository, such as the University of California Museum of Paleontology.	
I. GEOLOGY, SOILS, AND SEISMICITY			
GEO-1: In the absence of proper design, project occupants may potentially be subject to geotechnical hazards including landslide, lateral spreading, subsidence, or collapse.	S	GEO-1a: Prior to the issuance of any site-specific grading or building permits, a design-level geotechnical plan review shall be prepared by a licensed professional, in compliance with County guidelines, and submitted to the County for review and approval. The plan review shall include a finding that the proposed development incorporates all recommendations of the preliminary geotechnical investigation for the project and fully complies with the CBC as well as federal, state, and County requirements. All recommendations, design criteria, and specifications set forth in the preliminary geotechnical investigation and design-level geotechnical plan review shall be implemented. GEO-1b: As a condition of approval for grading permits, a qualified and licensed professional, or his/her representative, shall be required to be present as a construction monitor during clearing and grading of the project site to observe the stripping of deleterious material, over-excavation of existing fills, and to provide consultation as required to the grading contractor(s) in the event that previously undiscovered geotechnical issues are discovered during clearing and grading operations.	LTS

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
J. HYDROLOGY AND WATER QUALITY			
HYD-1: The construction period and operation period of the project could result in degradation of water quality in Green Spring Creek and downstream receiving waters by reducing the quality of stormwater runoff and increasing erosion/sedimentation.	S	HYD-1: Implementation of the following two-part mitigation measure would reduce construction- and operation-period impacts to water quality to a less-than-significant level: HYD-1a: Consistent with the requirements of the statewide Construction General Permit, the project applicant shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) designed to reduce potential adverse impacts to surface water quality during the project construction period. The SWPPP shall be designed to address the following objectives: (1) all pollutants and their sources, including sources of sediment associated with construction, construction site erosion and all other activities associated with construction activity are controlled; (2) where not otherwise required to be under a Regional Water Board permit, all non-stormwater discharges are identified and either eliminated, controlled, or treated; (3) site Best Management Practices (BMPs) are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity; and (4) stabilization BMPs installed to reduce or eliminate pollutants after construction are completed. The SWPPP shall be prepared by a Qualified SWPPP Developer. The SWPPP shall include the minimum BMPs required for the identified Risk Level. BMP implementation shall be consistent with the BMP requirements in the most recent version of the California Stormwater Quality Association Stormwater Best Management Handbook-Construction or the Caltrans Stormwater Quality Handbook Construction Site BMPs Manual.	LTS

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
HYD-1 *Continued*		The SWPPP shall include a construction site monitoring program that identifies requirements for dry weather visual observations of pollutants at all discharge locations, and as appropriate, depending on the project Risk Level, sampling of site effluent and receiving waters. A Qualified SWPPP Practitioner (QSP) shall perform or supervise all inspection, maintenance, repair, and sampling activities. Although the QSP may delegate any or all of these activities to a trained employee, the QSP shall ensure that all tasks are adequately completed. In addition to the SWPPP requirement, the project shall fully comply with El Dorado County's SWMP, Grading, Erosion and Sediment Control Ordinance (Chapter 15.14), and Design and Improvement Standards Manual, Drainage Manual. HYD-1b: The project sponsor shall fully comply with the requirements of the Phase II General Permit, as implemented by El Dorado County through the SWMP, Grading, Erosion and Sediment Control Ordinance (Chapter 15.14), Design and Improvement Standards Manual, Drainage Manual, and General Plan Goal 7.3. Responsibilities include, but are not limited to, designing BMPs into project features and operations to reduce potential impacts to surface water quality and to manage changes in the timing and quantity of runoff associated with development of the project site. The BMPs shall include Low Impact Development (LID) measures, such as minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source, to the maximum extent practicable. It should be noted that because the project site is characterized by shallow bedrock and low permeability soils, some LID measures, such as those that rely on infiltration, are not likely to be feasible at the project site.	

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
HYD-1 *Continued*		Funding for the maintenance of all BMPs for the life of the proposed project shall be specified (as the County will not assume maintenance responsibilities for BMPs within private developments). The project sponsor shall establish a stormwater system operation and maintenance plan that specifies a regular inspection schedule of stormwater treatment facilities. The plan and subsequent reports documenting the inspections and remedial actions shall be submitted to the County for review and approval.	
K. HAZARDS AND HAZARDOUS MATERIALS			
HAZ-1: Demolition of existing structures on the project site could release lead, asbestos, and/or other hazardous materials, presenting a risk to human health and the environment.	S	HAZ-1: A hazardous building materials survey shall be conducted by a qualified and licensed professional for all structures proposed for demolition under the project. All loose and peeling lead-based paint and asbestos-containing material (ACM) shall be abated by certified contractor(s) in accordance with local, State, and federal requirements. All other hazardous materials shall be removed from buildings prior to demolition in accordance with DOSH regulations. If required, the completion of the abatement activities shall be documented by a qualified environmental professional(s) and submitted to the County for review with applications for issuance of construction and demolition permits.	LTS
L. UTILITIES			
UTIL-1: A degree of uncertainty is inherent in EID's ability to meet long-term cumulative water supplies, which could result in the need to construct new or expand existing water facilities, the construction of which could cause significant environmental effects, and/or could require new or expanded entitlements for water supplies.	S	UTIL-1: Prior to approval of any final subdivision map for the proposed project, the applicant shall secure a "will serve" letter or equivalent written verification from EID demonstrating the availability of sufficient water supply for the project.	LTS

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
UTL-2: Existing water infrastructure does not provide adequate pressure or capacity to serve the proposed project.	S	UTIL-2: The applicant shall construct a looped water line extension connecting to the 12-inch water line located in Green Valley Road (near the future intersection of Silver Springs Parkway) and/or also to the 10-inch water line located at the intersection of Clarksville Road and Greenview Drive. Additionally, the project will be required to connect to the 8-inch water line located near the western project boundary. It is likely that at least one pressure reducing station will be required in order to accommodate this connection. The Facility Plan Report (FPR), which shall be prepared by the applicant, shall analyze the future storage in this region based on potential future developments and the timing of the project. At the current time, additional storage is not required in the Bass Lake Tank service area to meet current demand and fire flow requirements.	LTS
UTIL-3: There is currently inadequate wastewater infrastructure to serve the proposed project.	S	UTIL-3: The project applicant, in consultation with EID and El Dorado County, shall undertake the following actions to the satisfaction of the EID and El Dorado County: • Prior to any construction activities within the SMUD corridor, the existing swale on site shall be marked and identified by a wetland biologist, and all construction activities shall occur outside of the marked area. • Prior to any construction activities, botanical surveys conducted by a qualified botanist at the appropriate blooming period shall occur within the off-site sewer SMUD corridor. These surveys shall include big-scaled balsamroot, Brandegee's clarkia, Bisbee Peak rush rose, and dwarf downingia. Should these or other special-status plant species be found on the project site, a mitigation plan shall be prepared and implemented to the satisfaction of the El Dorado County Development Services Division and the California Department of Fish and Wildlife.	LTS

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
UTIL-3 *Continued*		• Wastewater Expansion: All three alternatives include the following: (1) on-site sewer lift station, force main and gravity lines; (2) connecting to the existing gravity sewer line in Lima Way; (3) improvements to split the sewer flows near the intersection of Lima Way and Aberdeen Way; and (4) use of the existing sewer system in Highland Views to the existing Highland Hills Lift Station (HHLS). o **Offsite Alternative 1 (Preferred Alternative).** Under this alternative, when the existing capacity of HHLS has been reached, it would be necessary to improve the existing facility in order to serve the project. In addition to HHLS improvements, a new force main would be constructed. The proposed force main alignment would start at HHLS and run through the Highland Hills subdivision within existing streets to Silva Valley Parkway. It would then continue south along Silva Valley Parkway until reaching the SMUD corridor, where it would head west along the Stone Gate subdivision boundary, ultimately making a connection to an existing 15-inch gravity line. The existing capacity of the gravity lines running through the streets of Highland View can adequately serve the project after the flows are split. Currently, there is capacity for an additional 200 equivalent dwelling units (EDUs) within the existing sewer line along the EID sewer access road downstream to HHLS. Once this capacity is reached, approximately 1,600 lateral feet of existing gravity sewer line within the access road would be upsized to accommodate proposed flows.	

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
UTIL-3 *Continued*		o **Offsite Alternative 2.** Under this alternative, when capacity is reached at HHLS, a new lift station would be constructed on APN 126-360-18. This site currently houses an existing water pump. In order to accommodate the new sewer lift station, site improvements would be made. In addition, gravity sewer improvements would be made in Aberdeen Lane in the vicinity of the new station to route the flows to the new lift station. From there, a new force main would be constructed down the sewer access road and along Appian Way to Silva Valley Parkway. Once at the SMUD corridor, the force main would then head west along the Stone Gate subdivision boundary, ultimately making a connection to the existing 15-inch gravity line. o **Offsite Alternative 3.** Under this alternative, when capacity at HHLS is reached, a new lift station would be constructed on APN 126-390-22. A new force main would also be constructed. Two potential force main alignments have been identified: ▪ Alternative A would run to Loch Way, through Highland Hills subdivision within the existing streets to Silva Valley Parkway. It would then continue south along Silva Valley Parkway until reaching the SMUD corridor, where it would then head west along the Stone Gate subdivision boundary, ultimately making a connection to an existing 15-inch gravity line. ▪ Alternative B would run back up the existing sewer access road, along Appian Way to Silva Valley Parkway, until reaching the SMUD corridor, where it would then head west along the Stone Gate subdivision boundary, ultimately connecting to an existing 15-inch gravity line.	

Table II-1: Summary of Impacts and Mitigation Measures from the EIR

Environmental Impacts	Level of Significance Without Mitigation	Mitigation Measures	Level of Significance With Mitigation
M. PUBLIC SERVICES			
There are no significant impacts to public services.			
N. VISUAL RESOURCES			
There are no significant impacts to visual resources.			

Source: LSA Associates, Inc., 2014.

III. PROJECT DESCRIPTION

This chapter describes the Dixon Ranch Residential Project (project) that is evaluated in this Environmental Impact Report (EIR). A description of the project site, objectives, proposed project, and required project approvals and entitlements is provided. Information presented in this chapter is taken from the March 2013 Dixon Ranch Residential Project application submittal to El Dorado County (County).

The following project description serves as the basis for the environmental analysis contained in this EIR. The County will serve as the lead agency with final authority to approve the proposed project.

A. PROJECT SITE

The following section describes the site's location, surrounding land uses, project background and site characteristics.

1. Location and Surrounding Land Use

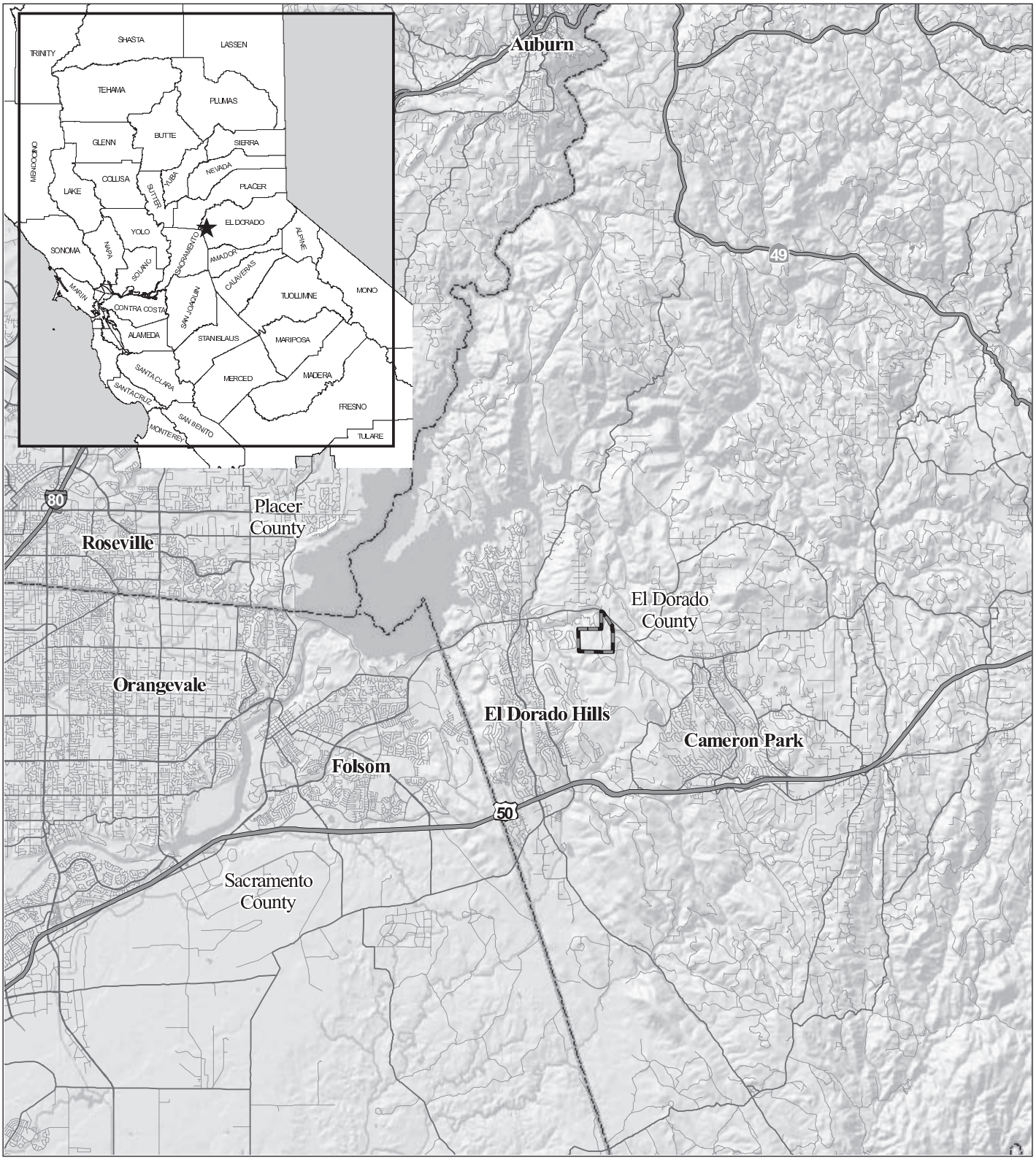
The Dixon Ranch project site encompasses approximately 280 acres and is located north of US Highway 50 (US-50) in the unincorporated community of El Dorado Hills in western El Dorado County, as shown in Figure III-1. Four parcels identified by five Assessor Parcel Numbers (APN 126-020-01 through -04 and 126-150-23) make up the project site, in addition to two easements for the extension of roadways to connect the project site to Green Valley Road.

The project site is south of Green Valley Road, near its intersection with Malcolm Dixon Road. The project is generally surrounded by residential uses. Existing or approved adjacent subdivisions include Green Springs Ranch to the east and southeast, Serrano to the southwest, and Highland View to the west. An aerial of the project site is shown in Figure III-2.

2. Project Background

In 2011, the project proponent submitted an application to the County for a 714 unit subdivision (714 unit project) on the project site. This subdivision included single-family homes, open space uses including parks, trails, landscaped lots, and native open spaces. Circulation for the 714 unit project included primary vehicle site access via direct connection to Green Valley Road, and secondary access provided via Lima Way within the existing Highland View development to the west. Once the application was deemed complete by the County, the California Environmental Quality Act (CEQA) review of the 714 unit project was initiated.

In June 2012, the County circulated a Notice of Preparation (NOP) for the 714 unit project and held a scoping meeting on June 27, 2012. At the conclusion of the scoping period, the County had received over 200 scoping letters on the proposed project. In response to the comments on the proposed project, a number of changes were made to the project to ameliorate the concerns raised in the comments. For the revised project evaluated in this EIR, the number of units was reduced by 109, project circulation was changed, and alterations to other aspects of the project were made.



LSA

FIGURE III-1

N

Project Site

0 1.5 3
MILES

Dixon Ranch Residential Project EIR

Location Map

SOURCES: ESRI IMAGERY; LSA ASSOCIATES, INC., 2012.

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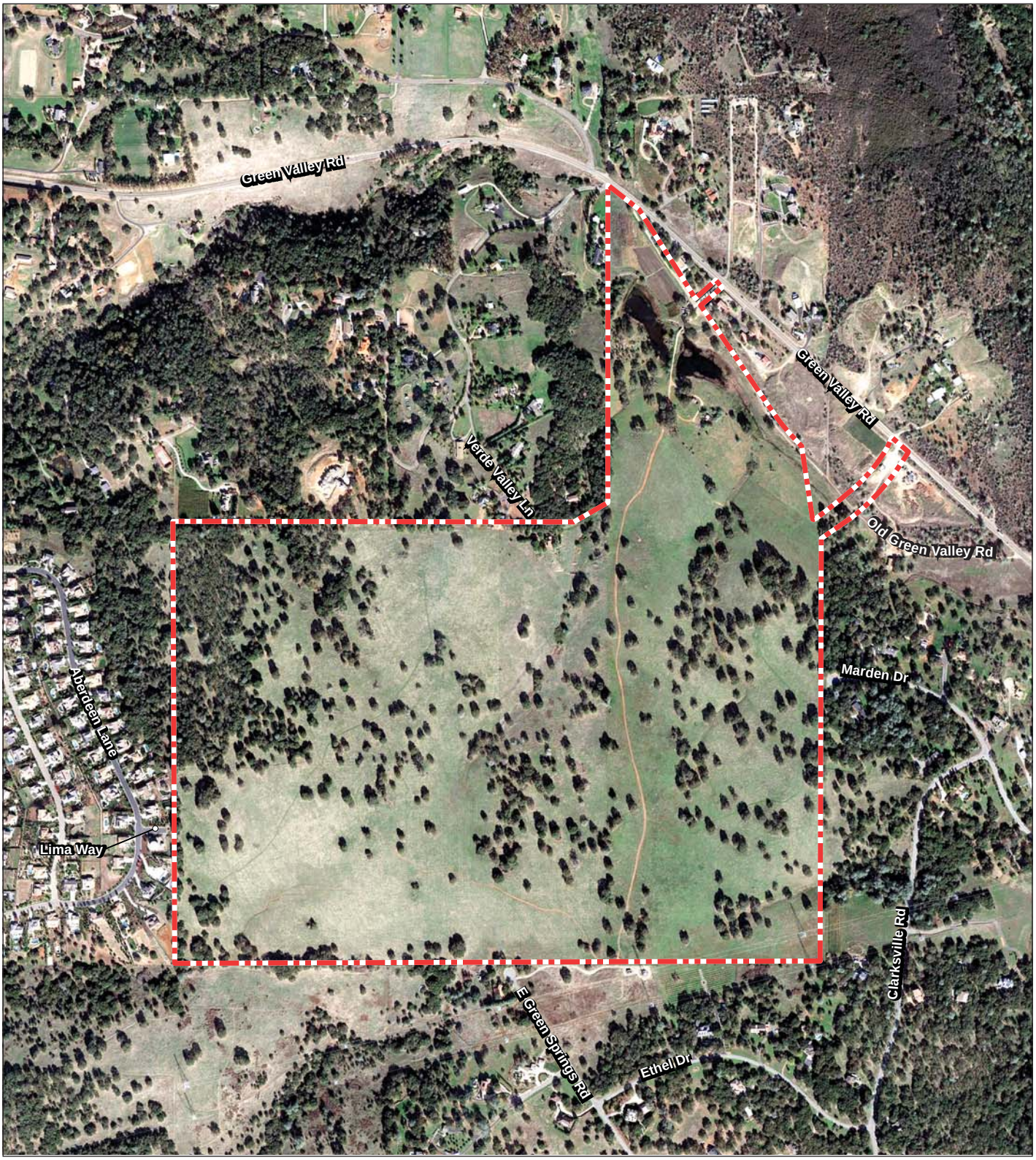

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FIGURE III-2

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0 425 850

FEET

Project Site

Dixon Ranch Residential Project EIR

Aerial Photograph of the Project Site

SOURCES: GOOGLE EARTH, 2010; LSA ASSOCIATES, INC., 2012.

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With the introduction of a revised project, a new CEQA review process was initiated (the previous CEQA process on the 714-unit project was terminated) and a revised NOP was circulated on December 18, 2012. This December 18, 2012 NOP, and comments received in response to the NOP, are included in Appendix A.

3. Site Characteristics

The project site is currently comprised of four parcels. As shown in Figure III-2, the project site is largely undeveloped with grassland vegetation (approximately 81 percent of site), scattered trees (approximately 18 percent of site) and onsite ponds/creek (approximately 1 percent of site).[1] There is a concentration of trees in the northwest corner of the property. Existing tree canopy and onsite ponds/creeks (as well as an overlay of the proposed project) are shown in Figure III-3.

The project site is currently used for seasonal grazing. Additionally, a small strawberry field is located on the northern portion of the site. Structures, including two residential units and assorted storage/accessory structures, are located in the northern portion of the site off of Green Valley Road and Verde Valle Lane; the remainder of the site does not include structures other than cattle gates, fences, and cattle feed troughs. A Sacramento Municipal Utility District (SMUD) utility line easement, which contains a 230 kv electrical transmission line, is located across the southeast corner of the project site. Photos 1 and 2 are representative of the undeveloped nature of the project site.

Photo 1: Representative photo of existing site conditions.

Photo 2: View looking north with the project site in foreground and adjacent hills in background.

The topography of the site is varied, with elevations ranging from approximately 960 feet to 1,235 feet above mean sea level. The center of the site is generally higher in elevation and relatively flat compared to the periphery of the property. Slopes range from flat to greater than 40 percent, with the majority of the site having a less than 10 percent slope. Approximately 52.2 percent of the site has a 0 – 10 percent slope; 37.2 percent of the site has a slope from 10 to 20 percent slope; 8.4 percent of the site has a slope from 20 to 30 percent; and 2.2 percent of the site has a slope 30 percent or greater.[2]

[1] El Dorado County Environmental Questionnaire, 2013. Dixon Ranch Project, March 21.

[2] Ibid.

The slope and topography of the project site (as well as the overlay of the proposed project) is shown in Figure III-4.

Along the north side of the site, and parallel to Green Valley Road, is Green Springs Creek which flows from east to west. Within the creek corridor are two existing ponds separated by an earthen embankment that provides access to the south side of the ponds. Photo 3 shows one of these ponds.

The project is currently located entirely within the General Plan Community Region Boundary (urban limit line) of El Dorado Hills (EDH). The majority of the project site is designated as Low Density Residential (LDR) within the El Dorado County General Plan; approximately 1.5 acres of the project site (within the existing Sacramento Municipal Utility District [SMUD] corridor at the southeast corner of the property) is designated as Open Space (OS). The project site is currently zoned Exclusive Agricultural with a small portion zoned Estate Residential Five Acres.

Photo 3: View looking northeast across onsite pond.

4. Other Improvements

Improvements to the project site, which are occurring independently of the project and would occur regardless of whether the project is approved by the County, include improved flow capacity through the ponds, stabilization of the embankments and spillways, spillway reconstruction/relocation, aeration implementation, dredging of sediment, and sealing/repair of the existing embankments. These improvements will be completed as part of ongoing pond maintenance and improvement work under a separate permit and environmental clearance process. These improvements are not occurring as part of the project and are not evaluated within this EIR. These maintenance activities were previously identified and are in process to improve the existing drainage flow capacity and health of the ponds and reduce the potential for downstream flooding. The existing concrete bridge structure and earthen berms will be modified as a part of pond maintenance and improvement work already in process.

B. PROJECT OBJECTIVES

The objectives of the proposed project are as follows:

- Implement the County's General Plan by directing growth within those areas with moderate topography, located amongst already developed lands, with access to services, schools and transportation systems.
- Implement the County's General Plan by providing urban/suburban type development within lands designated as Community Region in order to ensure the preservation of large expanses of open space and agricultural lands within the County.

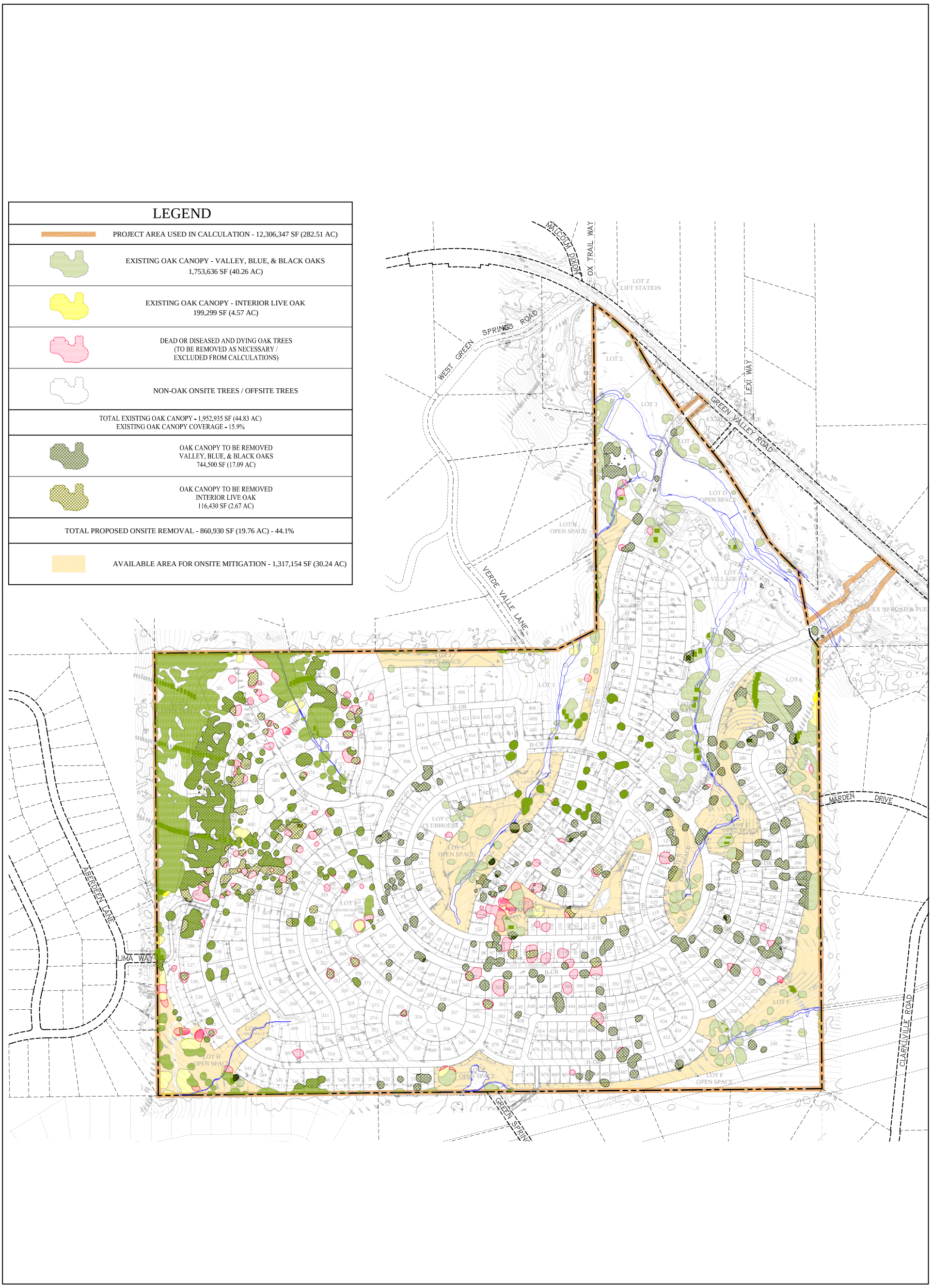

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FIGURE III-3a

NOT TO SCALE

SOURCE: CTA, MARCH 2014.

Dixon Ranch Residential Project EIR

Tree Preservation Map

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LEGEND

	PROJECT AREA USED IN CALCULATION - 12,306,347 SF (282.51 AC)
	PHASE LINE
	EXISTING OAK CANOPY - VALLEY, BLUE, & BLACK OAKS 1,753,636 SF (40.26 AC)
	EXISTING OAK CANOPY - INTERIOR LIVE OAK 199,299 SF (4.57 AC)
	DEAD OR DISEASED AND DYING OAK TREES (TO BE REMOVED AS NECESSARY / EXCLUDED FROM CALCULATIONS)
	NON-OAK ONSITE TREES / OFFSITE TREES
	TOTAL EXISTING OAK CANOPY - 1,952,935 SF (44.83 AC) EXISTING OAK CANOPY COVERAGE - 15.9%
	OAK CANOPY TO BE REMOVED VALLEY, BLUE, & BLACK OAKS 176,903 SF (4.06 AC)
	OAK CANOPY TO BE REMOVED INTERIOR LIVE OAK 16,759 SF (0.38 AC)
	TOTAL PROPOSED ONSITE REMOVAL - 193,662 SF (4.45 AC) - 9.9%
	AVAILABLE AREA FOR ONSITE MITIGATION - 1,041,004 SF (23.90 AC)

* FINAL PARK DESIGN TO BE REVISED TO RETAIN OAK TREE(S)

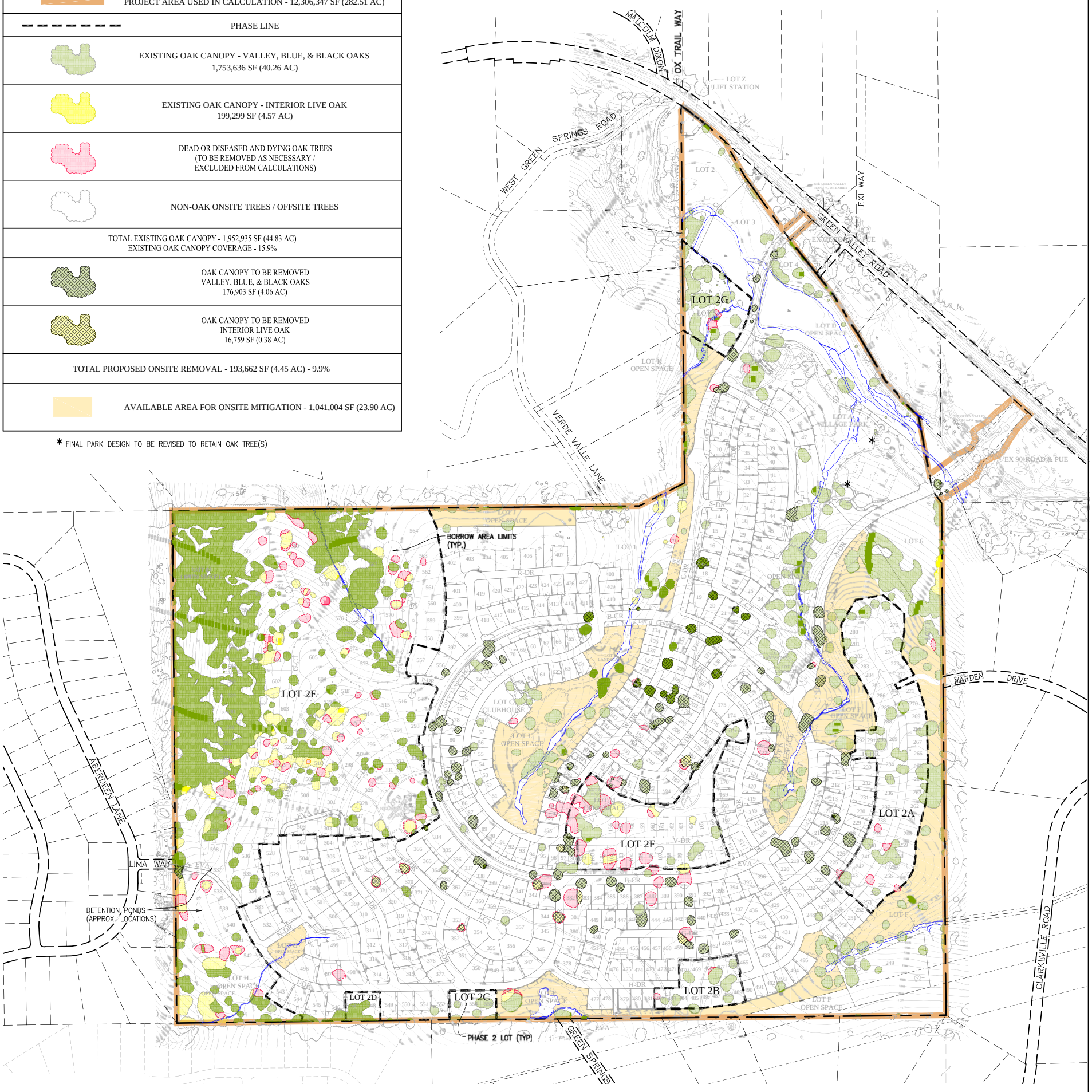

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FIGURE III-3b

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NOT TO SCALE

Dixon Ranch Residential Project EIR

Tree Preservation Map - Phase 1

SOURCE: CTA, MARCH 2014.

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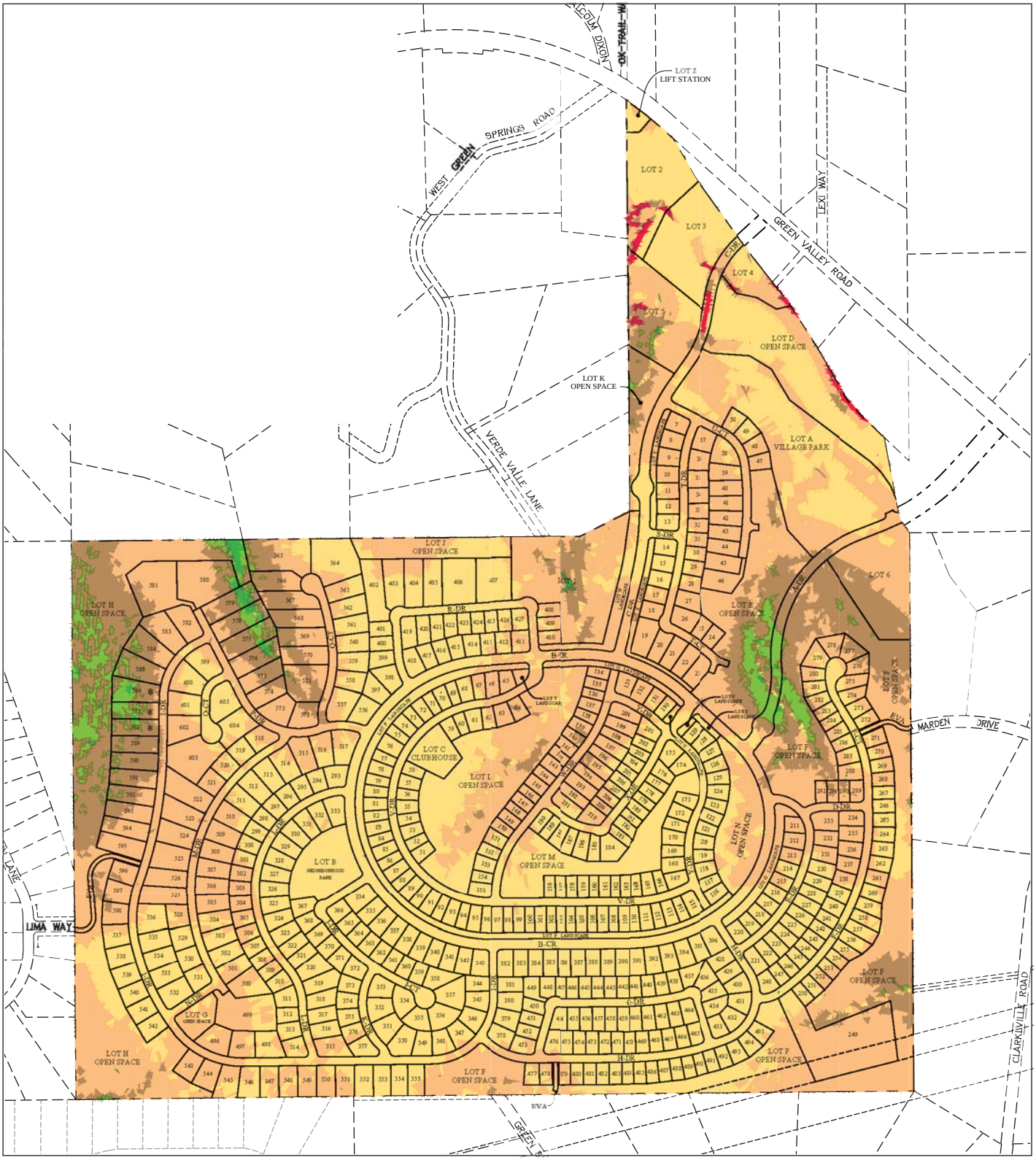

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FIGURE III-4

COLOR	SLOPE RANGE BEGINNING	SLOPE RANGE END	AREA	PERCENT OF AREA SHOWN
	0%	10%	146.20 AC.	52.2%
	10%	20%	104.17 AC.	37.16%
	20%	30%	23.53 AC.	8.4%
	30%	40%	5.69 AC.	2.0%
	40% +		0.35 AC.	0.12%
	MAN MADE SLOPES	30% +	0.33 AC.	0.12%

*** LOTS 586-588 SHALL ADHERE TO CURRENT POLICIES REGARDING DISTURBANCE TO EXISTING SLOPES >30% AT THE TIME OF EACH BUILDING PERMIT APPLICATION**

N

NOT TO SCALE

Dixon Ranch Residential Project EIR

Existing Slope Map

SOURCE: CTA, MARCH 2013.

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- Create an economically viable project that provides a fair-share contribution of infrastructure to the community through the payment of fees and/or construction of required capital improvements, including transportation improvements in accordance with the County's General Plan.
- Provide a broad range of residential product types.
- Offer a range of designs and amenities to meet the needs of the changing demographics of the County, including families, empty nesters and active adults.
- Protect the highest quality natural features and resources of the site while being sensitive to the character of adjacent land uses.
- Provide a residential community containing open space and a range of passive and active recreational amenities for its residents and the community.
- Provide a comprehensively planned project that is sensitive to environmental issues including wetland and tree preservation.
- Improve emergency access and circulation via existing road termini.
- Implement the General Plan strategies and methods for achieving its vision and goals of sustainable growth and economic development

C. PROPOSED PROJECT

This EIR considers the environmental effects of the proposed project. This section provides a description of the project based on information submitted by the project applicant in March 2013**.** The proposed project is a residential development that includes 604 new detached single-family residential parcels and units, one 5-acre parcel that would include the existing Dixon Residence, 84 acres (30 percent) of open space (including parks, landscaping, native open spaces, and trails), a clubhouse for use by the age-restricted residential units, and on- and off-site improvements. The project concept is illustrated in Figure III-5 and further described below.

1. Residential Concept

The proposed project would include 605 detached single-family residential units within areas designated as High Density Residential (HDR), Medium Density Residential (MDR), and Low Density Residential (LDR); 604 of these units would be new and one unit would be the existing Dixon Residence. There would be several types of lots and units incorporated into the proposed project, which are further described below and listed in Table III-1.

a. High Density Residential (HDR) Designated Lots. The proposed project would include 594 residential units, with lot sizes ranging from approximately 4,725 square feet to 47,922 square feet, within the HDR designated area of the project. The number and type of these units is described in Table III-1 and their location is shown in Figure III-5.

Table III-1: Residential Lot Types

Lot Type	Approximate Lot Size in Square Feet (Acres)	Average Lot Size in Square Feet	Number of Lots
High-Density Residential (HDR) Lots			
R1-PD Lot Type			
Age-Restricted Village Units			
Small Lot	4,725 to 9,989	6,080	80
Large Lot	5,775 to 12,685	7,360	80
Non Age-Restricted Units			
Village Small Lot	5,775 to 11,751	7,290	149
Village Large Lot	6,825 to 18,017	9,410	173
Hillside	10,740 to 47,922	14,230	54
Hillside Custom	12,135 to 39,422	20,410	58
Total HDR Lots			**594**
Medium Density Residential (MDR) Lots			
R1A-PD Estate	43,800 to 52,141 (1.0 – 1.2 acres)	48,051	5
R3A-PD Estate Large Lot	131,046 to 144,526 (3.0 – 3.2 acres)	136,016	5
Total MDR Lots			**10**
Existing Low Density Residential (LDR) Lots			
RE-5-PD	218,276 (5 acres)		1
Total LDR Lots			**1**
TOTAL LOTS			**605**

Source: CTA Engineering & Surveying, 2013.

As part of the project, the applicant is proposing that 160 of the units be classified as "age-restricted" units. These units would be for residents who are 55 and older. The age-restricted lots would be on either small or large lots, and lot sizes would range from approximately 4,725 to 12,685 square feet. While the applicant may change the lot distribution pattern within the age-restricted village, the applicant would be subject to the maximum unit count of 80 of each type of product within the village. The age-restricted units would generally be located within the center of the development, as shown in Figure III-5.

b. Medium Density Residential (MDR) Designated Lots. Two types of medium density residential lots are proposed: Estate and Estate Large Lot. These are further described below.

(1) Estate. Five Estate lots would be incorporated into the project site. Four of these lots would be located in the northwest area of the site, with the remaining lot, identified as "Lot 4," located off one of the entrance drives into the project site. These lots would be between approximately 43,800 and 52,141 square feet in size.

(2) Estate Large Lots. Five Estate Large Lots are proposed for the project site. Three of these lots would be located at the northern tip of the project site, one lot would be located off the southern access road connecting to Green Valley Road, and one would be located in the southeastern corner of the project site. These lots would be between approximately 131,046 and 144,526 square feet in size.

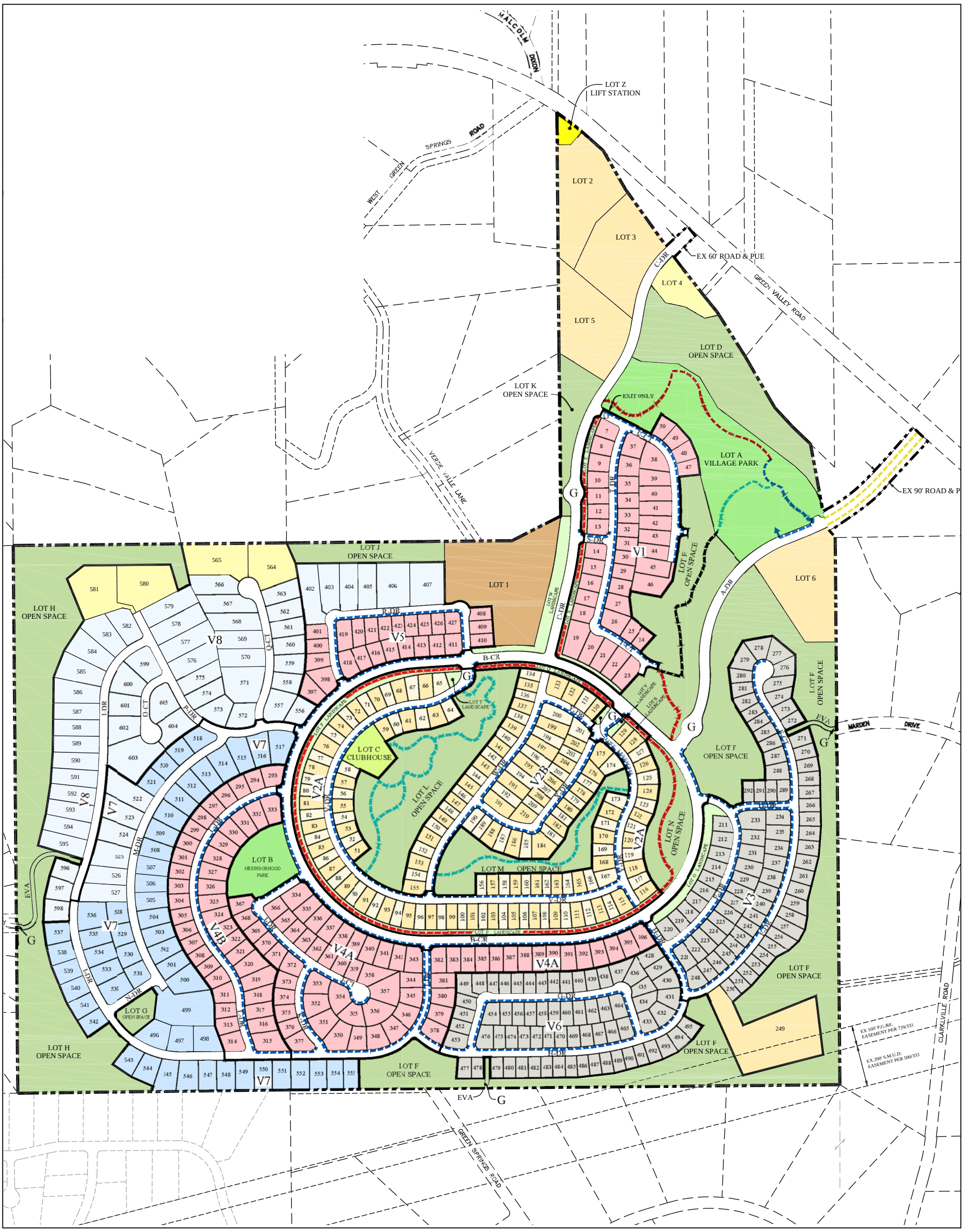

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FIGURE III-5

LEGEND

- Project Boundary
- Village Boundary
- Age Restricted Small Lot - 80 units
- Age Restricted Large Lot - 80 units
- Village Small Lot - 149 units
- Village Large Lot - 173 units
- Hillside - 54 units
- Hillside Custom - 58 units
- Estate Residential - 5 units
- Estate Residential Large Lot - 5 units
- Existing Residence - 1 unit
- Clubhouse
- Lift Station
- Open Space
- Parks
- Landscape Lots
- G Proposed Gate

PEDESTRIAN CIRCULATION

- Sidewalk
- Pedestrian Pathway
- Open Space Trail
- Multi-Use Trail
- Class 2 Bike Lane

N

NOT TO SCALE

SOURCE: CTA, MARCH 2013.

Dixon Ranch Residential Project EIR

Conceptual Site Plan

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c. Existing Low Density Residential Lot. One of the existing residential units on the property would remain and would be located on a newly created 5-acre lot. This lot is identified as "Lot 1" in Figure III-5.

2. Recreation, Open Space and Landscaping, and Pedestrian Circulation Amenities

The following describes the recreational facilities, open space and landscaping, and pedestrian circulation amenities proposed for the project site.

a. Recreational Facilities. Two parks would be incorporated into the proposed project: Village Park and Neighborhood Park. All parks are proposed to be dedicated to the El Dorado Hills Community Services District (EDHCSD) for maintenance and/or management.[3] The final design of the parks is subject to the EDHCSD approval. The clubhouse is proposed as part of the age-restricted community and would be maintained by the Homeowner's Association. These amenities are described below.

(1) Village Park. Village Park (Lot A) would be approximately 9.2 acres in size and may include the following amenities: an open turf area which could accommodate a youth soccer field; off-street parking; a hillside slide; a picnic area with shade structures, tables and BBQ area; a restroom/storage building; a playground; a tot lot; a turf area; horse shoe area; basketball court; bocce court; and various paths and benches throughout the park. A conceptual plan of the Village Park is shown in Figure III-6.

(2) Neighborhood Park. Neighborhood Park (Lot B) would be approximately 1.9 acres in size and would include the following amenities: open turf area; tot lot; shade arbor with picnic tables and BBQ area; half-court basketball; and seating features. A conceptual plan of the Neighborhood Park is shown in Figure III-7.

(3) Clubhouse and Associated Open Space. A clubhouse is proposed as part the age-restricted community, and would be limited to the residents of this community. The clubhouse may include a built structure and off-street parking, as well as an associated enclosed open space area. Clubhouse amenities may include a turf area; shade arbor with picnic tables; a pedestrian trail and other pedestrian amenities; a horseshoe area; and a community garden. A conceptual plan of the clubhouse and associated open space area is included in Figure III-8.

b. Open Space. Open space would be included throughout the project site to preserve existing trees and wetlands, serve as a storm water detention area, and to provide a buffer to neighboring land uses. Parks, open space and landscaped areas would total approximately 84 acres (30 percent); the locations of the open space areas can be seen in Figure III-5, and the size of specific open space lots is shown in Table III-2. The open space would be managed through the Homeowners Association.

c. Pedestrian Circulation Amenities. A variety of pedestrian circulation amenities would be included in the project design, as shown in Figure III-5. Many of the streets would include sidewalks. A series of pedestrian and paths and trails would be located within the project site. A multi-use trail

[3] Currently, it is anticipated that the Neighborhood Park would be dedicated to EDHCSD for management. However, if the final design of the proposed project included gating, which prevents general public access to the Neighborhood Park, it is then anticipated that the park would be a private park maintained by the future Home Owner's Association.

would also be included into the project design. Figures III-9a, -9b, and -9c show the preliminary placement and grading associated with the trails in the open space.

Table III-2: Park, Open Space and Landscaping Areas

Lot Number	Area (SF)
Park Areas	
Village Park (Lot A)	401,794
Neighborhood Park (Lot B)	83,536
Total Park Area	485,330
Open Space Areas	
Lot D	252,855
Lot E	307,948
Lot F	906,903
Lot G	26,236
Lot H	705,903
Lot J	74,404
Lot K	70,808
Lot L	339,739
Lot M	148,933
Lot N	110,420
Total Open Space	2,944,149
Landscape Areas	
Lot O	32,195
Lot P	114,772
Lot Q	21,629
Lot S	4,769
Lot T	4,299
Lot U	3,173
Lot V	3,173
Lot W	49,214
Lot X	23,891
Lot Y	16,297
Total Landscape Area	273,412
Total Park, Open Space and Landscape Areas	3,702,891 (85 acres)[4]

Source: CTA Engineering & Surveying, 2013.

3. Circulation

Access to the site would be provided via two direct connections to Green Valley Road.

The westerly proposed access (identified as "C-Drive" on Figure III-5) would be located approximately 1,000 feet east of the Green Valley Road intersection with Malcolm Dixon Road and would allow for right-in/right-out turning movements only. The right turn onto Green Valley Road would be stop-sign controlled. This accessway would utilize an existing 60-foot easement across an adjacent property to access Green Valley Road, and would be approximately 150 feet long between the Green Valley Road right-of-way and the project boundary. The configuration of this roadway is shown in Figure III-10a.

The main proposed access to the project site (identified as "A-Drive" on Figure III-5) would be located approximately 0.5 miles east of the Green Valley Road intersection with Malcolm Dixon Road and will allow for full turning movements and would be controlled by a new signal installed as part of the project. This access way would utilize an existing 90-foot easement across an adjacent property in order to access Green Valley Road and would be approximately 630 feet long between the Green Valley Road right-of-way and the project boundary. The configuration of this roadway is shown in Figure III-10b. This intersection with Green Valley Road would include one inbound lane of traffic and two outbound lanes of traffic, allowing for turning movements east and west onto Green Valley Road. Class II bike lanes will be included on both sides of this access way.

Three emergency vehicle access (EVA) roads are proposed. One EVA would connect at Marden Drive and one at Lima Way to the west. An additional EVA would be located at East Green Springs Road (to the south) and would be stubbed to the property line. This EVA would only connect to Green Springs Ranch if the Green Springs Ranch Association chooses to complete the extension in the future and at their discretion. The EVAs would have electric gates that would open by telephone remote. That telephone number would be provided to the fire agencies and law enforcement. The gates will also have Knox key switches that operate electronically and lock open if there is a power failure.[5]

[4] Please note that the applicant deducted 0.93 acres from the actual open space areas when summing total open space area of 30 percent in order to comply with the County requirement that parking and access road area (within open spaces) should not be included in the open space credit calculation.

[5] CDS Fire Prevention Planning, 2013. *Dixon Ranch Wildland Fire Safety Plan.* Revised July 22.

KEYNOTES

1 - GENERAL KEY NOTES

1.0 EXISTING SPILLWAY TO BE RE CONSTRUCTED
1.1 EXISTING PONDS TO REMAIN WITH ADDED AERATION.
1.2 EXISTING ELDERBERRY TO REMAIN AND PROTECTED DURING CONSTRUCTION
1.3 EXISTING TREES TO REMAIN
1.4 EXISTING WETLANDS

2 - SITE KEY NOTES

2.0 PROPOSED MULTI USE TURF AREA
2.1 PROPOSED MONUMENT SIGN
2.2 PROPOSED OFF STREET PARKING
2.3 PROPOSED TRAIL ACCESS THROUGH PARK
2.4 PROPOSED RECREATION TRAIL
2.5 PROPOSED HILLSIDE SLIDE
2.6 PROPOSED PICNIC SHADE STRUCTURES WITH TABLES AND BBQ'S.
2.7 PROPOSED RESTROOM/STORAGE BUILDING
2.8 PROPOSED PLAYGROUND
2.9 PROPOSED WATER PLAYGROUND WITH SHADE SAILS
2.10 PROPOSED TOT LOT
2.11 PROPOSED PASSIVE TURF AREA
2.12 PROPOSED ON STREET PARKING
2.13 PROPOSED TRASH ENCLOSURE
2.14 PROPOSED OPEN SPACE OVERLOOK AND TRAIL STAGING
2.15 PROPOSED SHADE STRUCTURE
2.16 PROPOSED RETAINING WALLS
2.17 PROPOSED HORSESHOES
2.18 PROPOSED BASKETBALL COURT
2.19 PROPOSED TRAIL ACCESS 5% MAX. TO BRIDGE
2.20 PROPOSED STAIRS
2.21 PROPOSED PEDESTRIAN BRIDGE ACROSS WETLAND
2.22 PROPOSED DRINKING FOUNTAIN
2.23 PROPOSED BOCCE COURT
2.24 PROPOSED BENCHES ALONG TRAIL
2.25 PROPOSED 4' RECREATION TRAIL (D.G.)
2.26 PROPOSED VILLAGE EXIT GATE

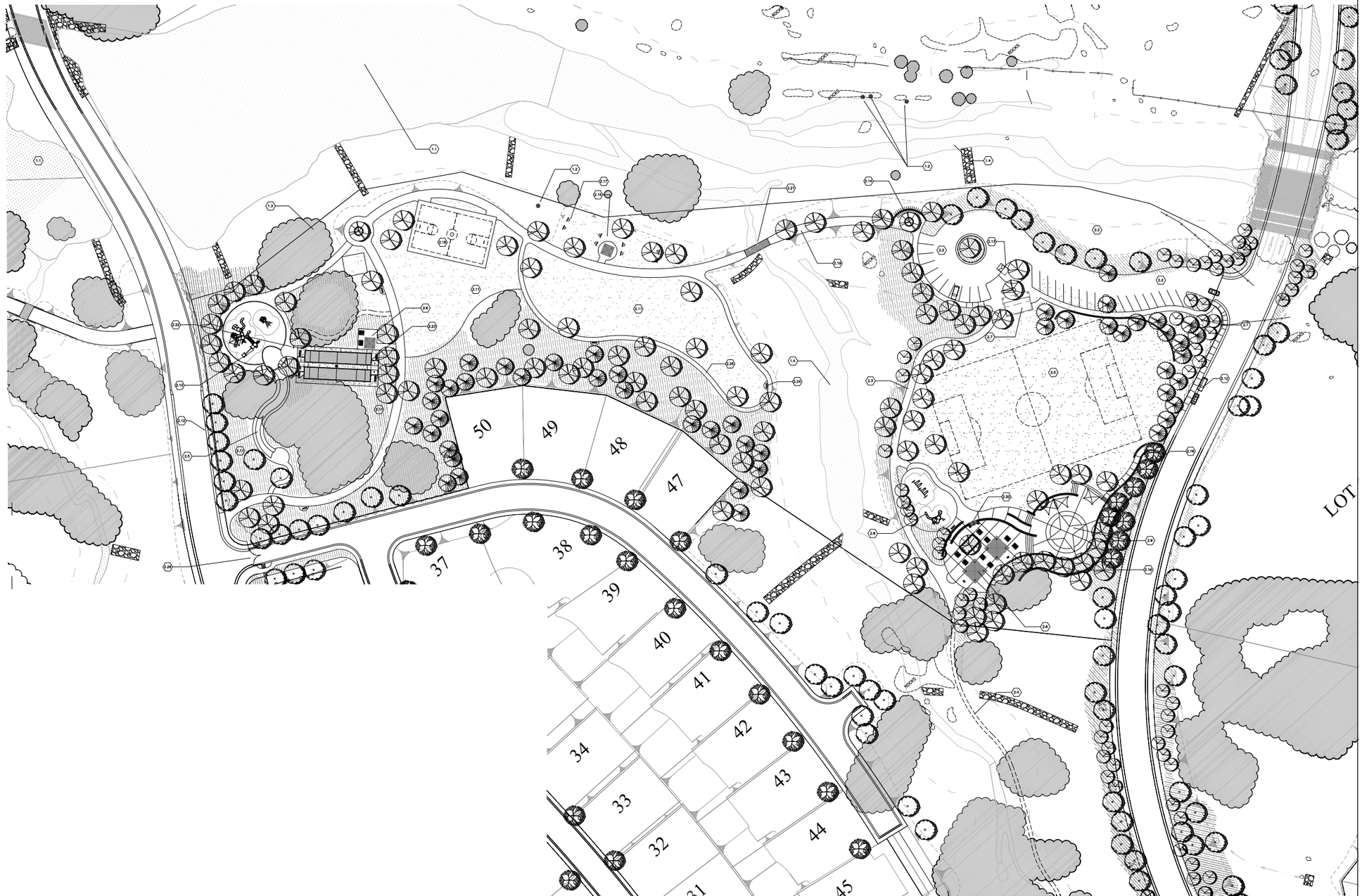

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FIGURE III-6

NOT TO SCALE

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Dixon Ranch Residential Project EIR

Village Park (Lot A) Conceptual Site Plan

SOURCE: FUHRMAN LEAMY LAND GROUP, MARCH 2013.

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KEYNOTES

1 - GENERAL KEY NOTES

1.0 EXISTING TREES TO REMAIN

2 - SITE KEY NOTES

2.0 PROPOSED PASSIVE TURF AREA
2.1 PROPOSED MONUMENT SIGN
2.2 PROPOSED ON STREET PARKING
2.3 PROPOSED TOT LOT
2.4 PROPOSED SHADE ARBOR WITH PICNIC TABLES AND BBQ
2.5 PROPOSED TRAIL PARK
2.6 PROPOSED ½ COURT BASKETBALL
2.7 PROPOSED SEAT WALL

LSA

FIGURE III-7

NOT TO SCALE

SOURCE: FUHRMAN LEAMY LAND GROUP, MARCH 2013.

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Dixon Ranch Residential Project EIR

Neighborhood Park (Lot B) Conceptual Plan

KEYNOTES

1 - GENERAL KEY NOTES

1.0 EXISTING TREES TO REMAIN

1.1 EXISTING RIPARIAN CORRIDOR TO REMAIN

2 - SITE KEY NOTES

2.0 PROPOSED PASSIVE TURF AREA

2.1 PROPOSED ENTRY GATE

2.2 PROPOSED METAL SECURITY FENCING

2.3 PROPOSED BENCH

2.4 PROPOSED SHADE ARBOR WITH PICNIC TABLES

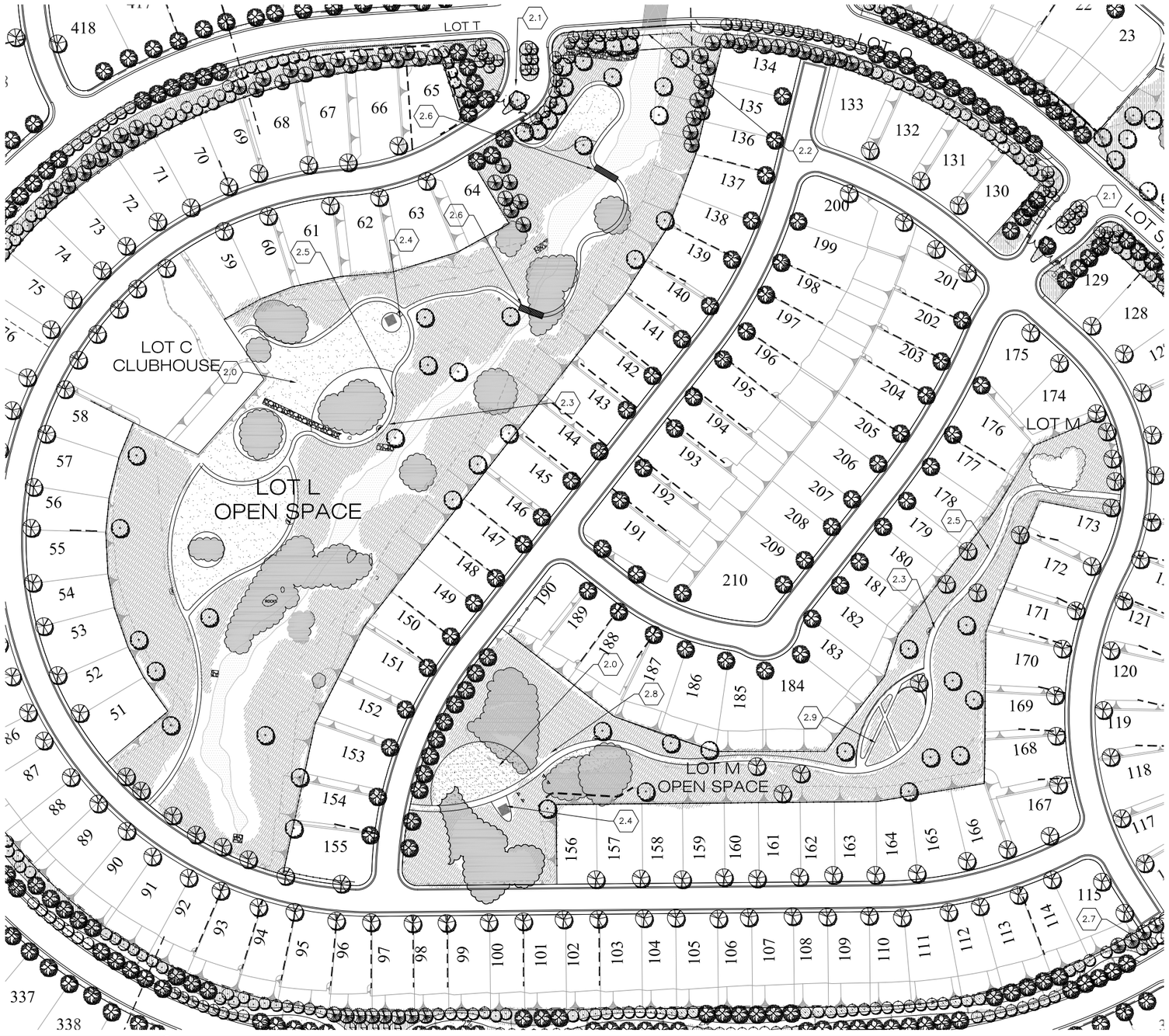
2.5 PROPOSED TRAIL THROUGH PARK

2.6 PROPOSED PEDESTRIAN BRIDGE

2.7 PROPOSED PEDESTRIAN WALK CONNECTION

2.8 PROPOSED HORSEHOES

2.9 PROPOSED COMMUNITY GARDEN



LSA

FIGURE III-8

NOT TO SCALE

Dixon Ranch Residential Project EIR

Clubhouse and Associated Open Space

Conceptual Site Plan

SOURCE: FUHRMAN LEAMY LAND GROUP, MARCH 2013.

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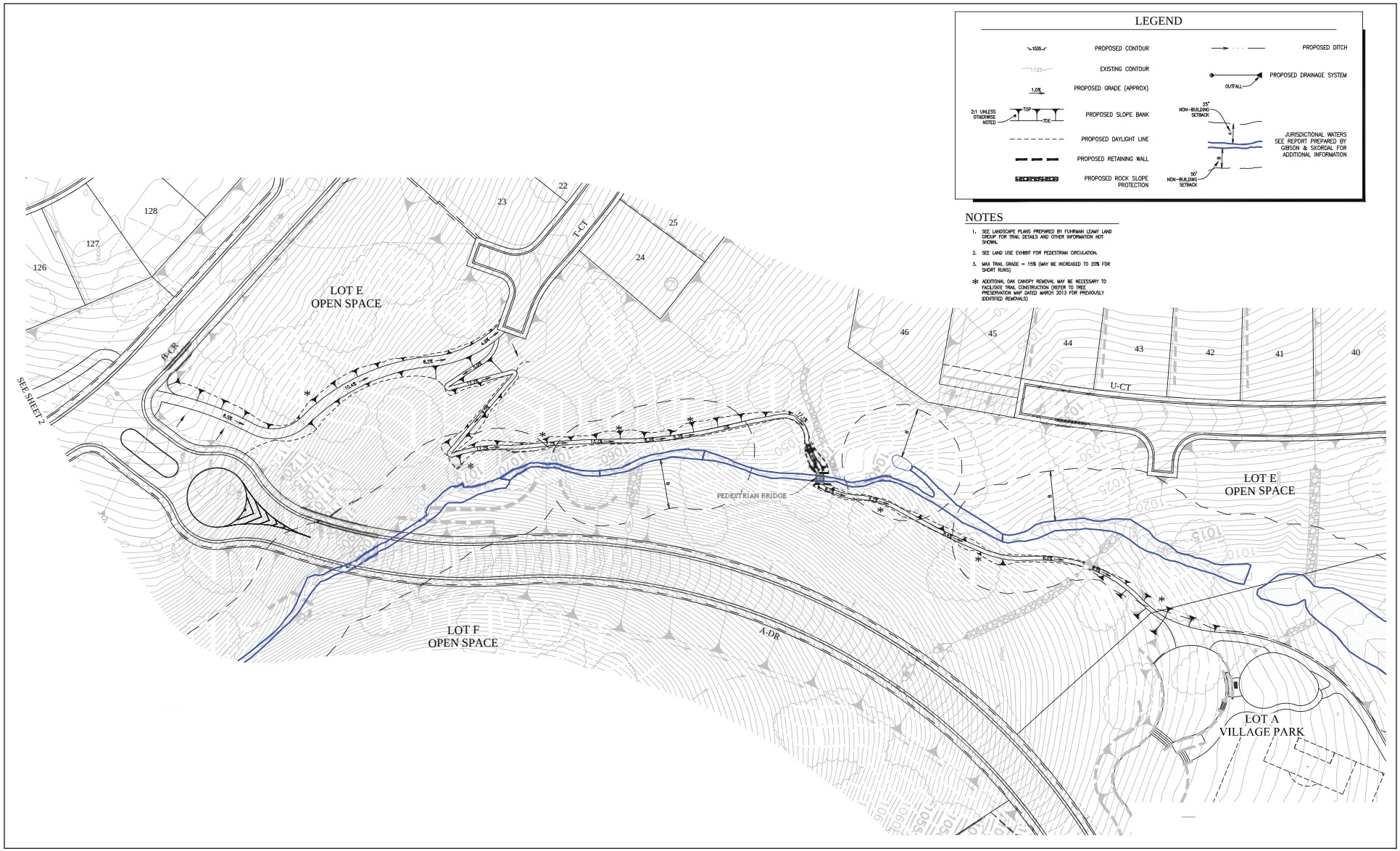

LSA

FIGURE III-9a

NOT TO SCALE

SOURCE: CTA, AUGUST 2013.

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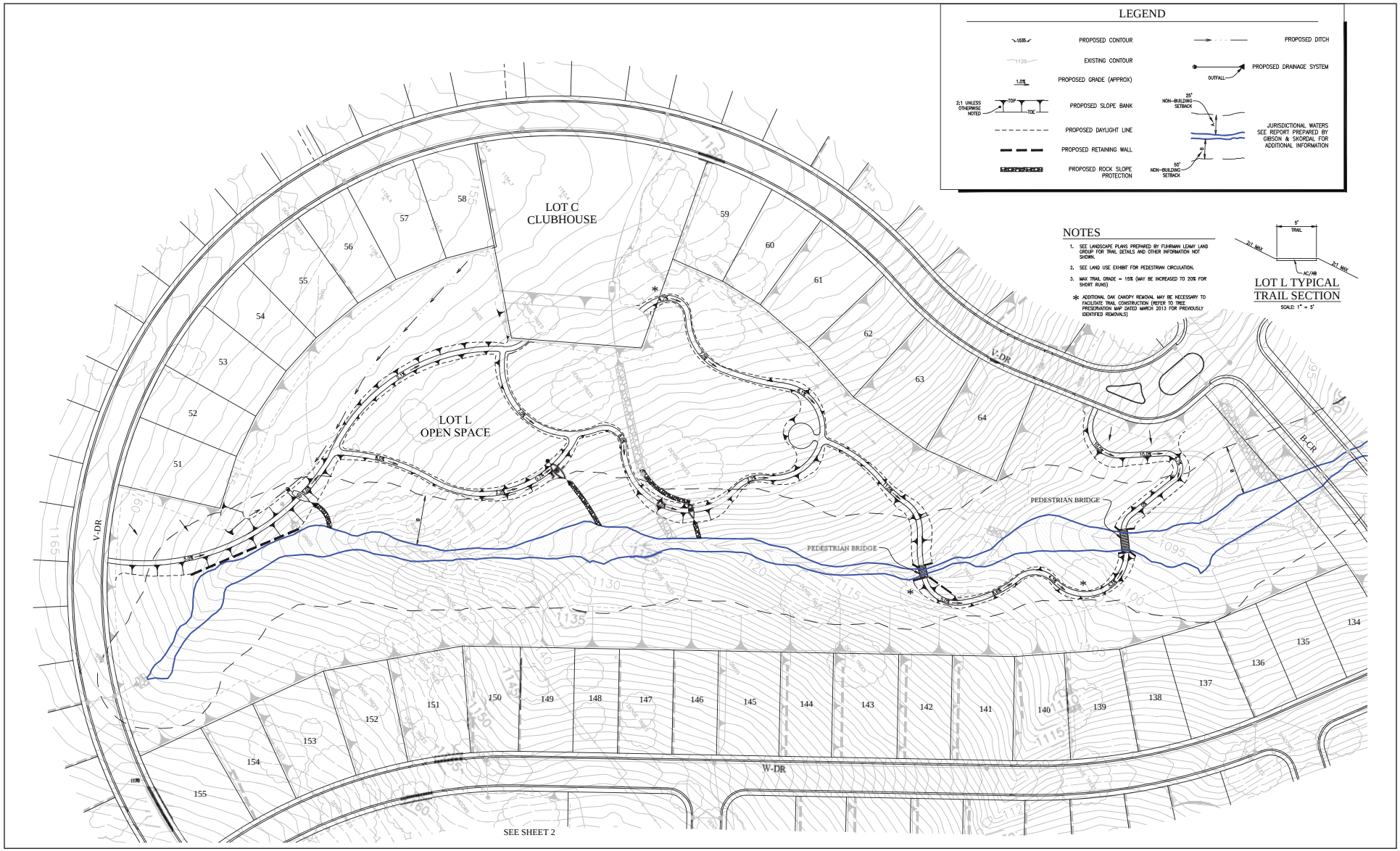
Dixon Ranch Residential Project EIR

Northern Preliminary Trail Placement and Grading



LSA

FIGURE III-9b

NOT TO SCALE

SOURCE: CTA, AUGUST 2013.

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Dixon Ranch Residential Project EIR

Central Preliminary Trail Placement and Grading

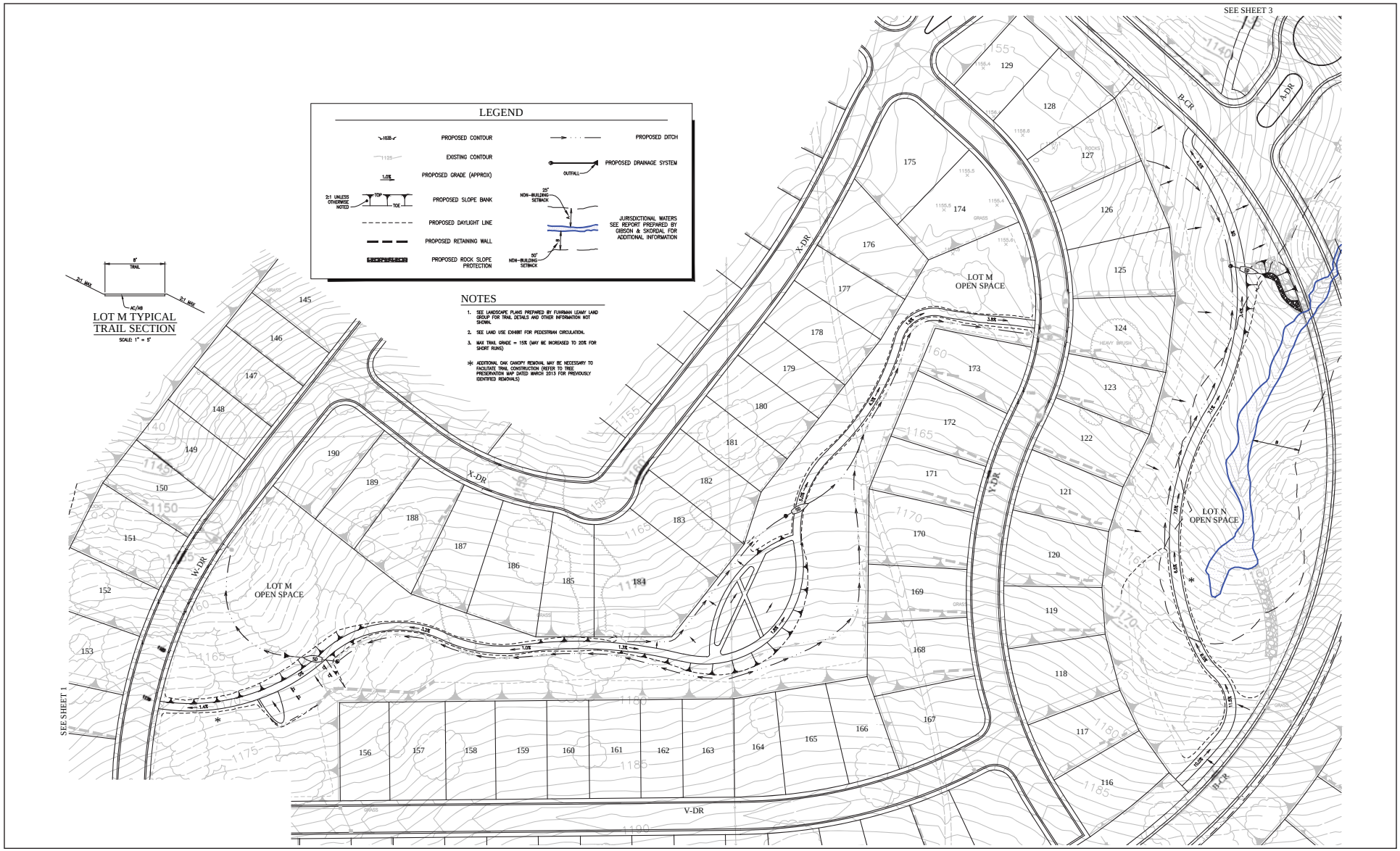

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FIGURE III-9c

NOT TO SCALE

SOURCE: CTA, AUGUST 2013.

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Dixon Ranch Residential Project EIR

Lots M and N Preliminary Trail Placement and Grading

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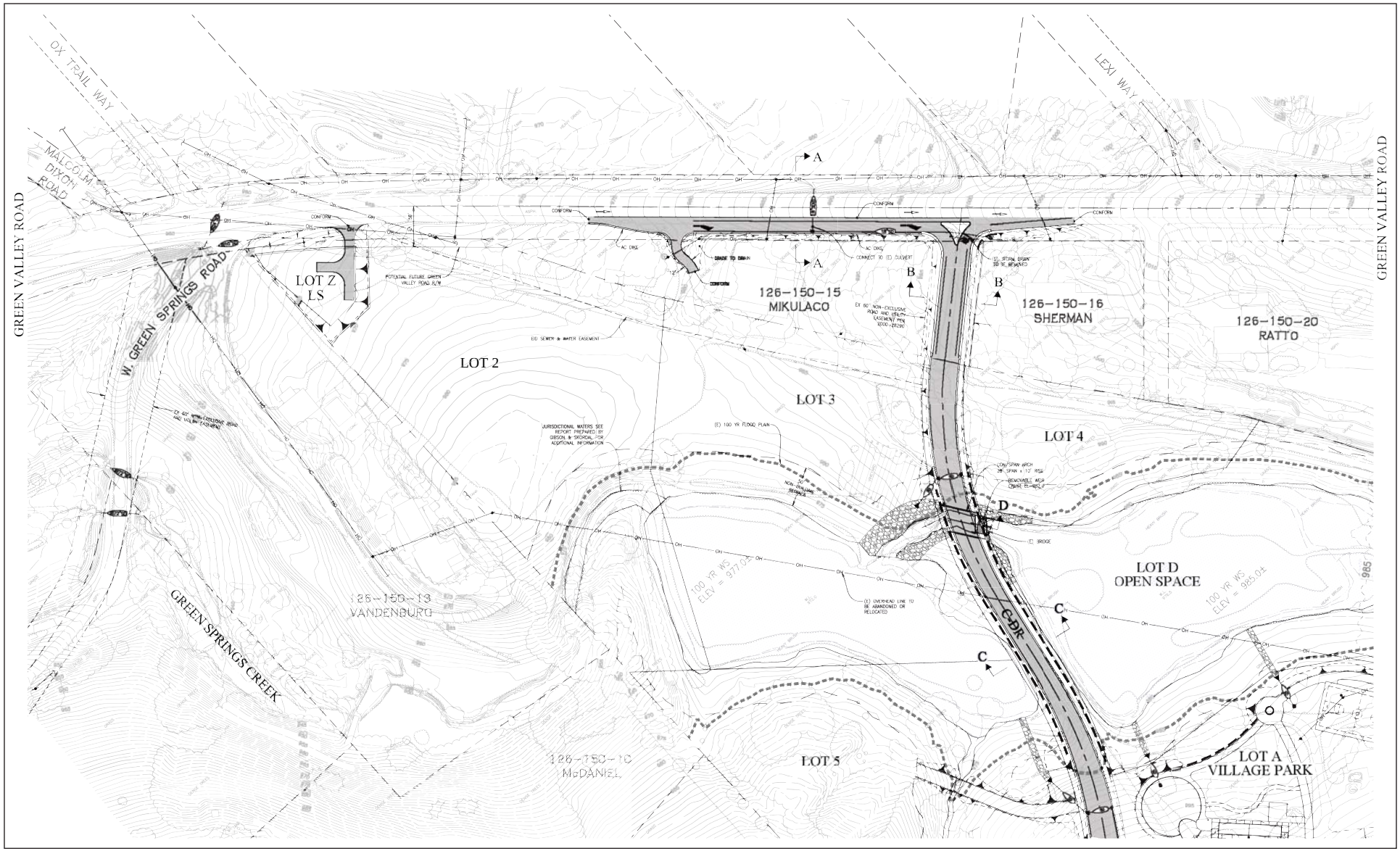

LSA

FIGURE III-10a

N

0 100 200

FEET

SOURCE: CTA, MARCH 2013.

Dixon Ranch Residential Project EIR

Green Valley Road / C-Dr Exhibit

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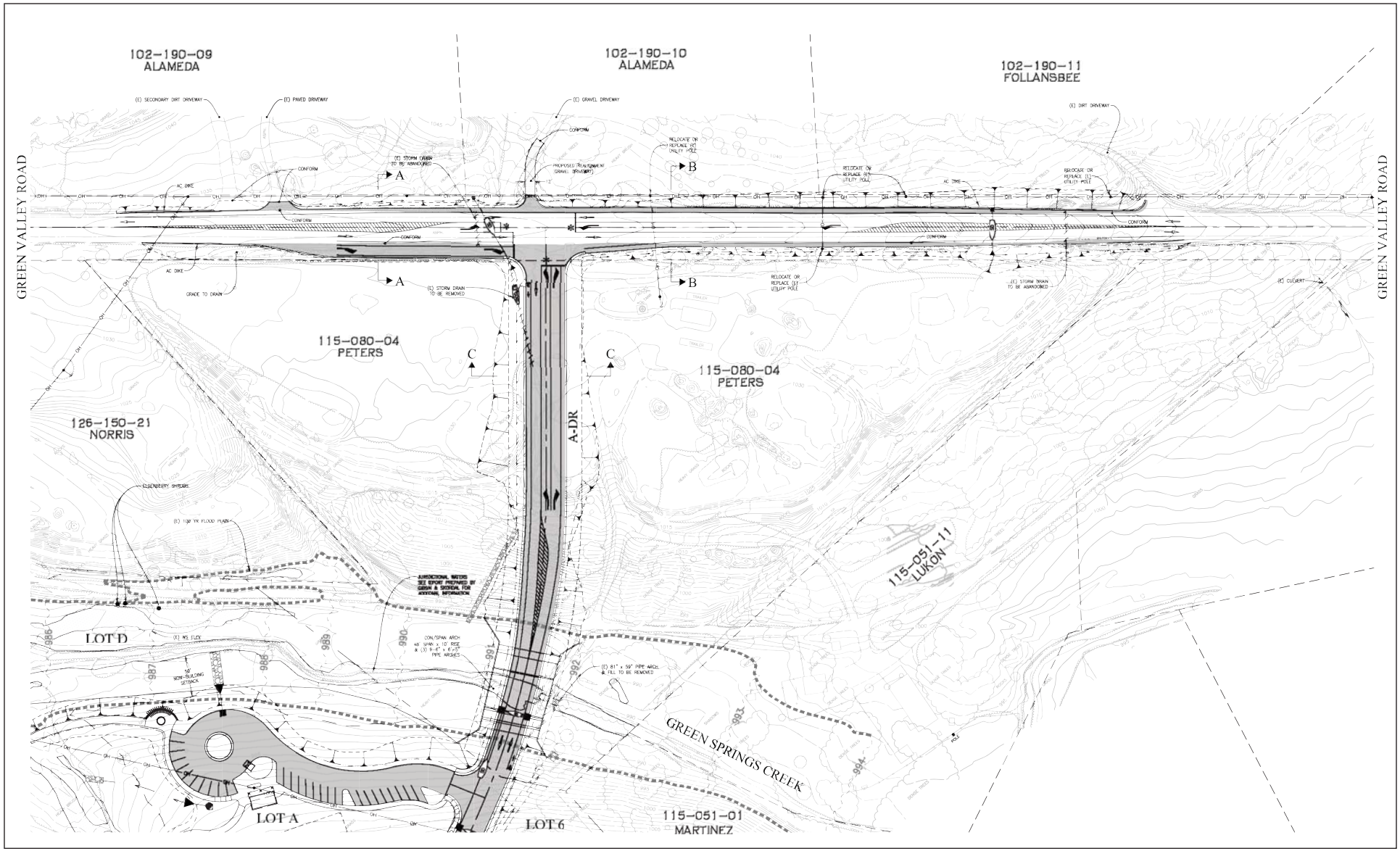


LSA

FIGURE III-10b

NOTE: A traffic signal will be installed at the A-Drive/Green Valley Road intersection as part of the project.

0 100 200
FEET

SOURCE: CTA, MARCH 2013.

Dixon Ranch Residential Project EIR

Green Valley Road / A-Dr Exhibit

I:\EDC1101 Dixon Ranch\figures\EIR\Fig_III10b.ai (3/19/14)

Lot 1 (the existing Dixon Residence) would continue to utilize existing access from Verde Valle Lane. Access to Verde Valle Lane would be limited to Lot 1 only. Lots 2 and 3 may continue directly accessing Green Valley Road.

The project would primarily circulate internally from the "loop road" (B-CR) which encircles the age-restricted village. Gated access to the age-restricted village is proposed at each of its entrance locations. Additional project gates may be located at the two access roads from Green Valley Road, but only if public access to the Village Park is adequately provided. Gating of smaller village areas off of the loop road or other internal streets may occur, but gating of the loop road itself would be prohibited. Emergency vehicle accesses are proposed to be gated in accordance with the requirements of the Dixon Ranch Wildland Fire Safe Plan.

Green Valley Road Improvements

As part of the project, several improvements are proposed to Green Valley Road. These will include relocation of utility poles, a new signal at the A-Drive/Green Valley Road intersection, abandonment of storm drains, storm drain improvements, signage, widening of the shoulder of the road, and the proposed realignment of some existing driveways. Please see Figures III-10a and III-10b for these improvements.

4. Utilities and Infrastructure

As part of the proposed project, the project applicant will request annexation into the El Dorado Irrigation District (EID). A description of utilities and infrastructure associated with the project is provided below.

a. Water. For the provision of water, the proposed project may connect to one or all of the existing EID facilities through Green Springs Ranch to the south, Lima Way to the west, and along Green Valley Road to the east. The proposed on-site water and sewer infrastructure are shown in Figure III-11.

Three known wells exist on the project site. The existing Dixon residence (Lot 1) is proposed to continue utilizing its existing well and septic system. It is assumed that the water use after implementation of the proposed project would be comparable to current water use.

The second well is located near the second house currently located on the project site, which will be demolished as part of the project. The third well is located near Lot 249, directly south of and adjacent to lot 492. These wells are expected to be abandoned, following proper County procedures, upon completion of the proposed project.

Per information from CTA Engineering & Surveying, no well water would be used for pond maintenance or maintenance of common open space, landscaping or park areas within the project site.[6]

[6] Allen, Brian, 2013. CTA Engineering & Surveying, Written communication with LSA Associates, Inc., September 12.

b. Sewer Service. On-site sewer improvements are shown in Figure III-11. For sewer service, on-site sewer improvements would include a proposed lift station to be located within the proposed EID lot (Lot Z) at the north end of Lot 2, adjacent to Green Valley Road.

Three potential off-site sewer-improvement alternatives have been identified, and are briefly described below. All three alternatives include the following: (1) on-site sewer lift station, force mains, and gravity sewers; (2) connecting to the existing gravity sewer line in Lima Way; (3) improvements to split the sewer flows near the intersection of Lima Way and Aberdeen Way; and (4) use of the existing sewer system in Highland View to the existing Highland Hills Lift Station (HHLS). Figures showing these potential alternatives and analysis of them are included in Section IV.L, Utilities.

- **Offsite Alternative 1 (Preferred Alternative).** Under this alternative, when the existing capacity of HHLS has been reached, it would be necessary to improve the existing facility in order to serve the project. In addition to HHLS improvements, a new force main would be constructed. The proposed force main alignment would start at HHLS and run through the Highland Hills subdivision within existing streets to Silva Valley Parkway. It would then continue south along Silva Valley Parkway until reaching the SMUD corridor, where it would head west along the Stone Gate subdivision boundary, ultimately making a connection to an existing 15-inch gravity line.

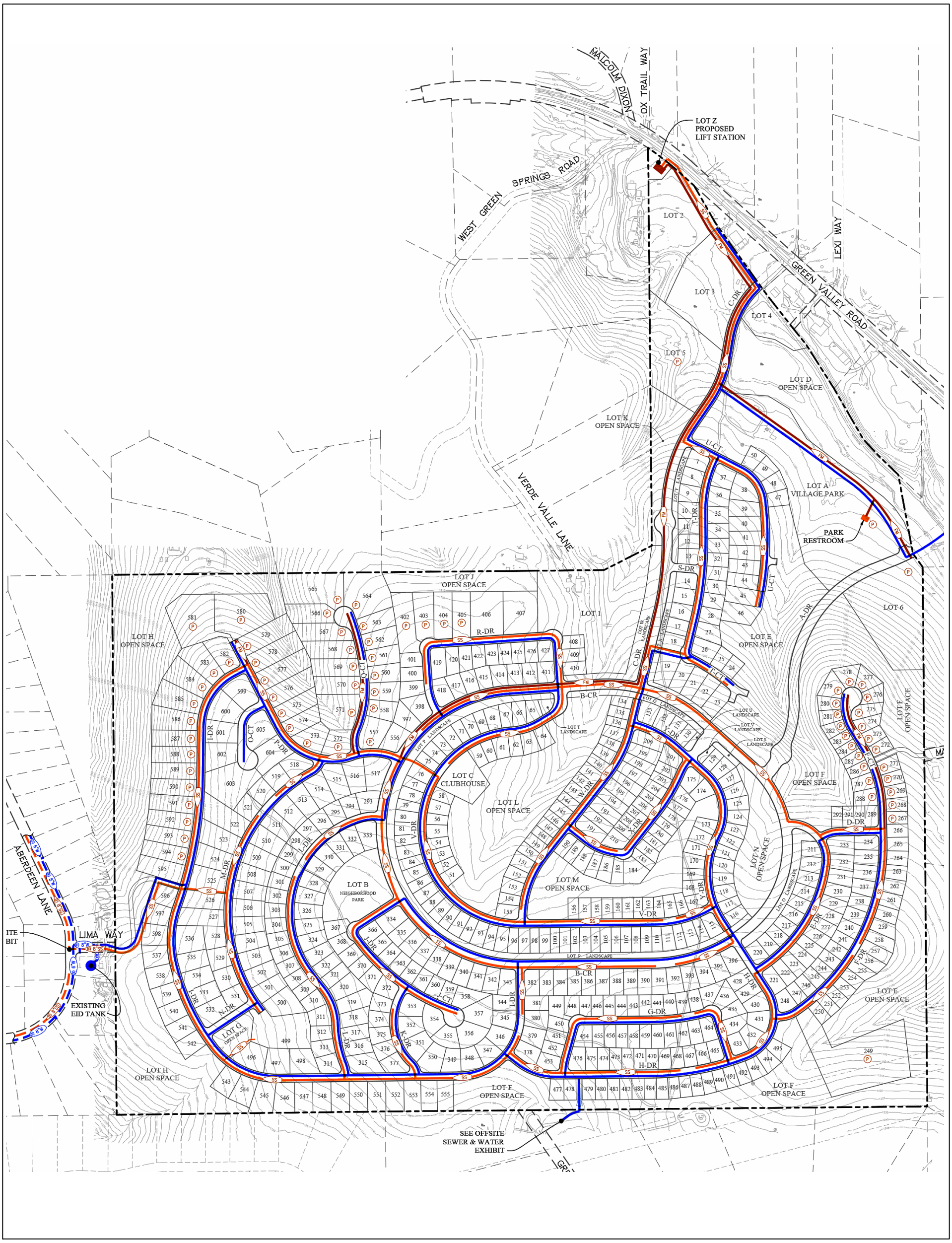
  The existing capacity of the gravity lines running through the streets of Highland View can adequately serve the project after the flows are split. Currently, there is capacity for an additional 200 equivalent dwelling units (EDUs) within the existing sewer line along the EID sewer access road downstream to HHLS. Once this capacity is reached, approximately 1,600 lateral feet of existing gravity sewer line within the access road would be upsized to accommodate proposed flows.[7]

- **Offsite Alternative 2.** Under this alternative, when capacity is reached at HHLS, a new lift station would be constructed on APN 126-360-18. This site currently houses an existing water pump. In order to accommodate the new sewer lift station, site improvements would be made. In addition, gravity sewer improvements would be made in Aberdeen Lane in the vicinity of the new station to route the flows to the new lift station. From there, a new force main would be constructed down the sewer access road and along Appian Way to Silva Valley Parkway. Once at the SMUD corridor, the force main would then head west along the Stone Gate subdivision boundary, ultimately making a connection to the existing 15-inch gravity line.

- **Offsite Alternative 3.** Under this alternative, when capacity at HHLS is reached, a new lift station would be constructed on APN 126-390-22. A new force main would also be constructed. Two potential force main alignments have been identified:

  - Alternative A would run to Loch Way, through Highland Hills subdivision within the existing streets to Silva Valley Parkway. It would then continue south along Silva Valley Parkway until reaching the SMUD corridor, where it would then head west along the Stone Gate subdivision boundary, ultimately making a connection to an existing 15-inch gravity line.

[7] CTA Engineering & Surveying, 2013. *Offsite Water Improvements & Offsite Sewer Alternatives for Dixon Ranch, El Dorado Hills, California*. March, Revised August 2013.



LSA

FIGURE III-11

LEGEND

- SUBDIVISION BOUNDARY
- PROPOSED WATER LINE
- SS — PROPOSED GRAVITY SEWER LINE
- FM — PROPOSED SEWER FORCE MAIN
- P — INDIVIDUAL SEWER PUMP
- 8"SS (E) — EXISTING GRAVITY SEWER LINE
- (E) 8"W — EXISTING WATER LINE

N

NOT TO SCALE

Dixon Ranch Residential Project EIR

Proposed On-site Sewer and Water Improvements

SOURCE: CTA, MARCH 2013.

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- Alternative B would run back up the existing sewer access road, along Appian Way to Silva Valley Parkway, until reaching the SMUD corridor, where it would then head west along the Stone Gate subdivision boundary, ultimately connecting to an existing 15-inch gravity line.

The existing capacity of the gravity lines running through the streets of Highland View can adequately serve the project after the flows are split. Currently, there is capacity for an additional 200+/- EDUs within the existing sewer line along the EID sewer access road. Once this capacity is reached, approximately 1,050 lateral feet of existing gravity sewer line within the access road would be upsized as part of the project to accommodate proposed flows.[8]

c. Gas and Electrical Improvements. Several gas and electrical improvements, both on- and off-site, are proposed. The project site would connect to the existing gas main on Lima Way. Off-site improvements include: installation of a new cable through the existing conduit on Sangiovese Drive; new trenching for installation of a 6-inch conduit and cable on a portion of Appian Way; and removal and replacement of cable in an existing conduit along portions of Lima Way, Aberdeen Lane and Appian Way. Additionally, improvements will be made to an overhead electrical wire along the eastern portion of the site to the western edge of the Travois Subdivision in Cameron Park. These improvements may include the addition or replacement of poles, wires, overhead switches or fusing, tree trimming, and the perfection of the right-of-way. Anticipated gas and electrical improvements are shown in Figure III-12.

d. Outdoor Lighting. Outdoor lighting would be in conformance with Section 17.14.170 of the County Ordinance Code. It is anticipated that lighting would be provided at major intersections and mid-block pedestrian crossings as appropriate for public safety, and along vertical curves where lighting is needed for public safety due to topographic constraints. Limited safety and security lighting and indirect shielded lighting would also be provided at park sites, at the proposed clubhouse, and along trail corridors including but not limited to parking areas, play areas, at gated entries, and walkways/trails where appropriate. The project does not propose to use lighted ball fields or other light intensive uses at the proposed park sites.

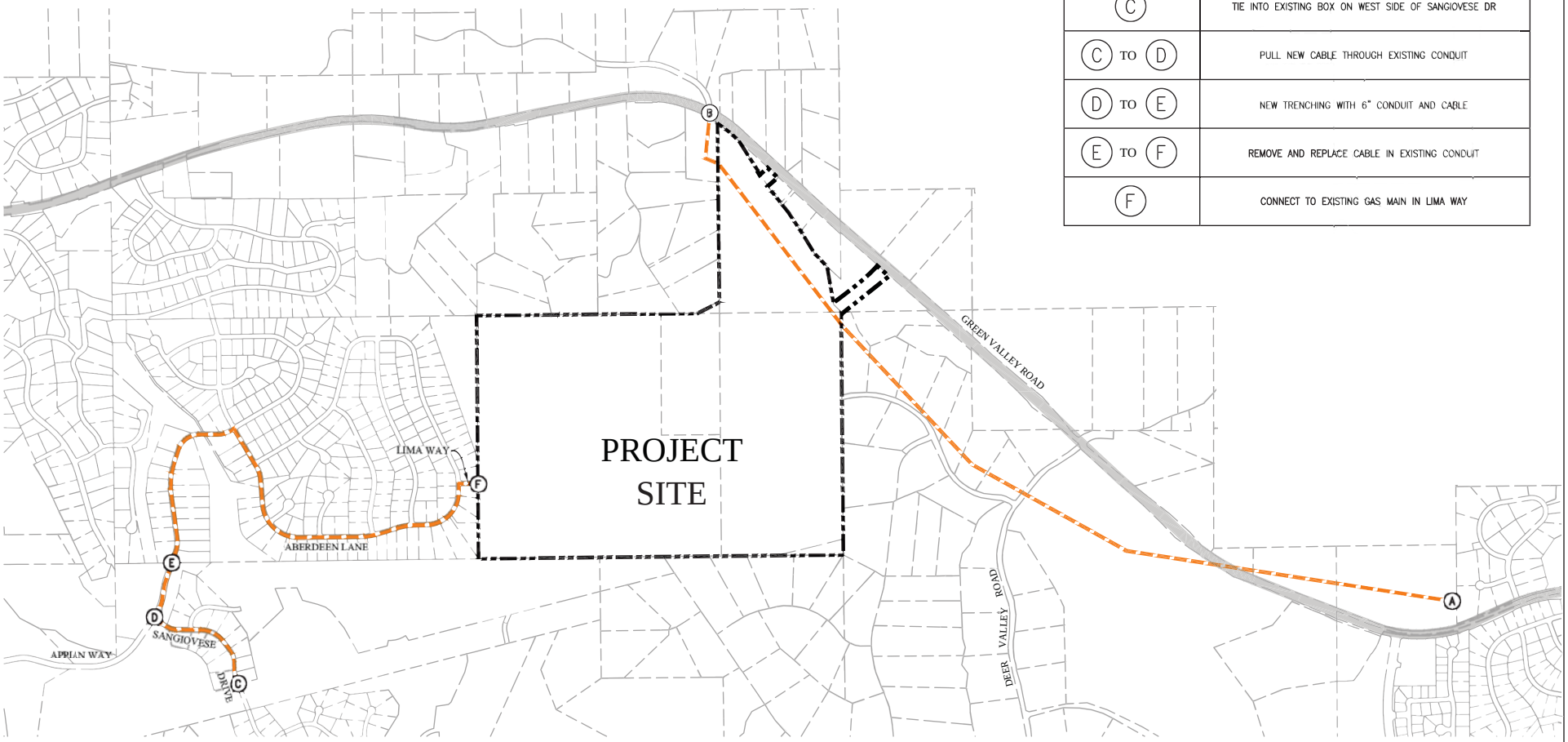
5. Drainage

The project would not result in a net increase in peak flow of Green Springs Creek where it leaves the project's westerly boundary. The project includes two detention basins at the southwest corner to mitigate flows to pre-project levels at that location. The proposed detention basins lie within proposed open space. The project improvements and drainage crossings are designed to accomplish total avoidance of on-site verified jurisdictional wetlands. The location of on-site drainage features is shown in Figures III-13a and -13b.

The existing ponds in Green Springs Creek would be substantially maintained in their current condition. Improvements to the existing spillway on the upper pond, pond aeration, and the roadway improvements as shown in the project application materials would be completed. Pond maintenance or improvement work may be required from time to time.

[8] Ibid.

NODES	DESCRIPTION OF WORK
A TO B	ADDITION OR REPLACEMENT OF POLES, WIRES, OVERHEAD SWITCHES OR FUSING, TREE TRIMMING, AND PERFECTION OF RIGHT OF WAY
C	TIE INTO EXISTING BOX ON WEST SIDE OF SANGIOVESE DR
C TO D	PULL NEW CABLE THROUGH EXISTING CONDUIT
D TO E	NEW TRENCHING WITH 6" CONDUIT AND CABLE
E TO F	REMOVE AND REPLACE CABLE IN EXISTING CONDUIT
F	CONNECT TO EXISTING GAS MAIN IN LIMA WAY



LSA

FIGURE III-12

N

Approximate Alignment of Proposed Improvements/Upsizing

NOT TO SCALE

SOURCE: CTA, MARCH 2014.

Dixon Ranch Residential Project EIR

Dry Utility Map

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LEGEND

- 1035 — PROPOSED CONTOUR
- 1125 — EXISTING CONTOUR
- CG — CUSTOM GRADING. AN INDIVIDUAL GRADING PLAN SHALL BE PREPARED & PROCESSED AS REQUIRED AS PART OF A BUILDING PERMIT APPLICATION
- P=1022.0 — PROPOSED PAD ELEVATION
- 1.0% — PROPOSED ROADWAY GRADE (APPROX)
- LP — PROPOSED LOW POINT (LP) OR PROPOSED HIGH POINT (HP)
- 2:1 UNLESS OTHERWISE NOTED — TOP, TOE — PROPOSED SLOPE BANK
- PROPOSED DAYLIGHT LINE
- MAX WALL HEIGHT — H=10' — PROPOSED RETAINING WALL
- PROPOSED DITCH
- SD — OUTFALL — RSP — PROPOSED DRAINAGE SYSTEM
- CLASS C LOT (REAR DRAINING) NOTE THAT AS ULTIMATE CONDITIONS DICTATE, LOT MAY BECOME CLASS A (FRONT DRAINING)
- 25' NON-BUILDING SETBACK — 50' NON-BUILDING SETBACK — JURISDICTIONAL WATERS SEE REPORT PREPARED BY GIBSON & SKORDAL FOR ADDITIONAL INFORMATION
- 985 — WATER SURFACE ELEVATION — EXISTING 100 YR FLOOD PLAIN

KEY NOTES:

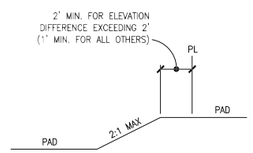
1. (E) OVERHEAD LINE TO BE REMOVED AND/OR RELOCATED
2. PROPOSED DRAINAGE EASEMENT
3. PROPOSED SEWER EASEMENT
4. PROPOSED PUBLIC UTILITY EASEMENT
5. (E) 20' SETBACK, SLOPE, DRAINAGE AND PUBLIC UTILITY EASEMENT
6. PROPOSED SEWER & WATER EASEMENT
7. PROPOSED ACCESS EASEMENT
8. PROPOSED WATER EASEMENT

NOTE

CLUBHOUSE, TRAILS, & PARKS SHOWN FOR REFERENCE ONLY. FINAL DESIGN AND LIMITS OF GRADING DEFERRED.

EARTHWORK

APPROXIMATE CUT: 570,000 CY
APPROXIMATE FILL: 570,000 CY



PAD OVERBUILD DETAIL

SCALE: 1" = 5'

LSA

FIGURE III-13a

NOT TO SCALE

SOURCE: CTA, APRIL 2013.

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Dixon Ranch Residential Project EIR

Eastern Area Preliminary Grading and Drainage Plan

KEY NOTES:

1. (E) OVERHEAD LINE TO BE REMOVED AND/OR RELOCATED
2. PROPOSED DRAINAGE EASEMENT
3. PROPOSED SEWER EASEMENT
4. PROPOSED PUBLIC UTILITY EASEMENT
5. (E) 20' SETBACK, SLOPE, DRAINAGE AND PUBLIC UTILITY EASEMENT
6. PROPOSED SEWER & WATER EASEMENT
7. PROPOSED ACCESS EASEMENT
8. PROPOSED WATER EASEMENT

NOTE

CLUBHOUSE, TRAILS, & PARKS SHOWN FOR REFERENCE ONLY.
FINAL DESIGN AND LIMITS OF GRADING DEFERRED.

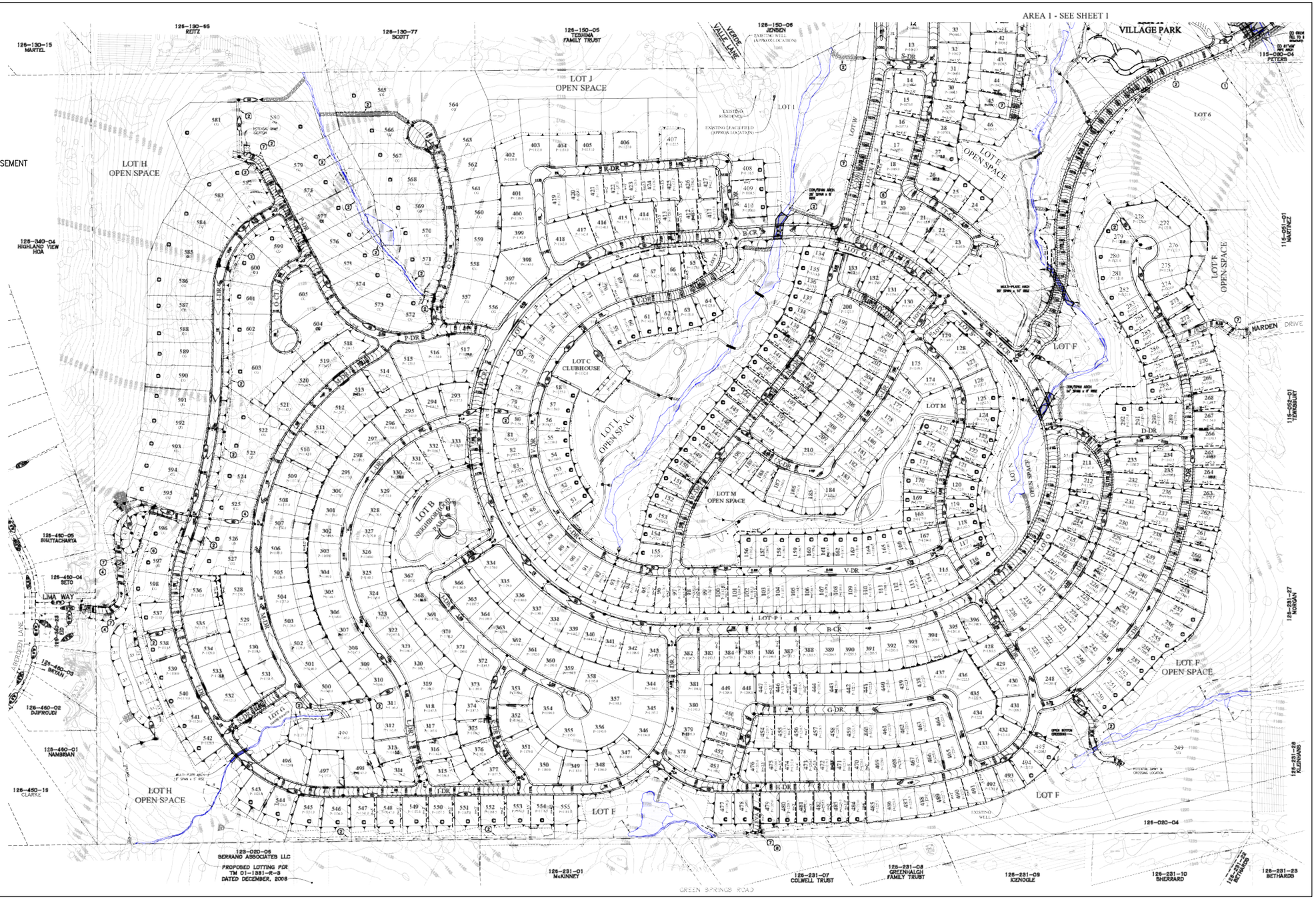

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FIGURE III-13b

NOT TO SCALE

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SOURCE: CTA, APRIL 2013.

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Dixon Ranch Residential Project EIR

Central Area Preliminary Grading and Drainage Plan

6. Grading, Phasing and Construction

Approximately 570,000 cubic yards of grading would occur on the project site. Grading activities would likely occur during March through December with an average of 6,500 cubic yards of soil moved per day during each construction season. Cut and fill would be balanced on-site. Anticipated grading associated with the proposed project is shown in Figures III-13a and -13b, and the anticipated construction schedule is shown in Table III-3.

Contingent upon approval, construction of the proposed project is expected to begin March 2015. Build-out of the project would occur in phases, dependent on market conditions and the timing associated with the County's approval of the Oak Woodland Conservation Ordinance, Option B (as discussed in Section III.C.7, below). Anticipated construction is shown in Table III-3.

Table III-3: Anticipated Construction Schedule

Land Use	By 2015	By 2016	By 2017	Total
Residential Units	125	300	180	605
Clubhouse	1	–	–	–
Parks [a]	–	2	1	–

[a] The entire Village Park is expected to be completed in association with the units anticipated to be built by 2016. The Neighborhood Park is expected to be completed in association with the units anticipated to be built by 2017.

Source: CTA Engineering & Surveying, 2014.

7. Tentative Maps and the Oak Woodland Conservation Ordinance

As part of the last General Plan update, the County implemented an Oak Woodland Conservation Ordinance requiring replacement and mitigation of impacts to oak woodlands. Developments removing over a certain number of oak trees were required to either: (1) adhere to the tree canopy retention and replacement standards (Option A); or (2) contribute to the County's Integrated Natural Resources Management Plan (INRMP) conservation fund (Option B).[9]

A recent lawsuit filed against the County challenging its Oak Woodland Conservation Ordinance and fee program instituted as Option B under General Plan Policy 7.4.4.4 was upheld on appeal. As a result, current development under this policy is subject to compliance with Option A, only. Option A requires a percentage of existing oak canopy to be retained on site proportional to its total oak canopy coverage. The canopy remaining above this percentage could be removed subject to on-site replacement or dedicated off-site replacement, both at a 1:1 ratio. The Dixon Ranch project cannot meet the Option A requirement alone for retention and removal of its oak canopy; therefore, only that portion of the map and development plan that can be found compliant with Option A can be considered for approval at this time. In order to be compliant with Option A, the applicant is proposing a phasing plan, as follows:

[9] For the purposes of this EIR, it is assumed the County will adopt a revised ordinance that includes an Option A and an Option B. However, it is possible the County will adopt an Oak Woodland Conservation Ordinance that presents an entirely different way to mitigate Oak Woodlands. In the event this occurs, the project will be required to comply with the applicable ordinance in place at the time a tentative map and development plan for Phase 2 of the project is proposed.

1. Phase 1 will include that portion of the overall tentative map and development plan that can meet the requirements for oak canopy retention and replacement under Option A.
2. Phase 2 will include the remaining portion of the project. When Option B becomes available, the tentative map and development plan for Phase 2 would then be processed for approval.

Phases 1 and 2 are shown in Figure III-14. CEQA analysis is being conducted under this project EIR for the entire project, including Phases 1 and 2 of the tentative map, the development plan, and the General Plan and zoning amendments. Phase 1 of the development plan would be subject to the provisions under Section 17.04.010 of the Zoning Ordinance, including open space ratios. Phase 2 of the development plan would be reviewed under Subsection 17.06.010.A.7 as a sequential phase of the overall development plan. However, as with the Phase 2 tentative map, the Phase 2 development plan could only be conceptually approved by the Board at that time.

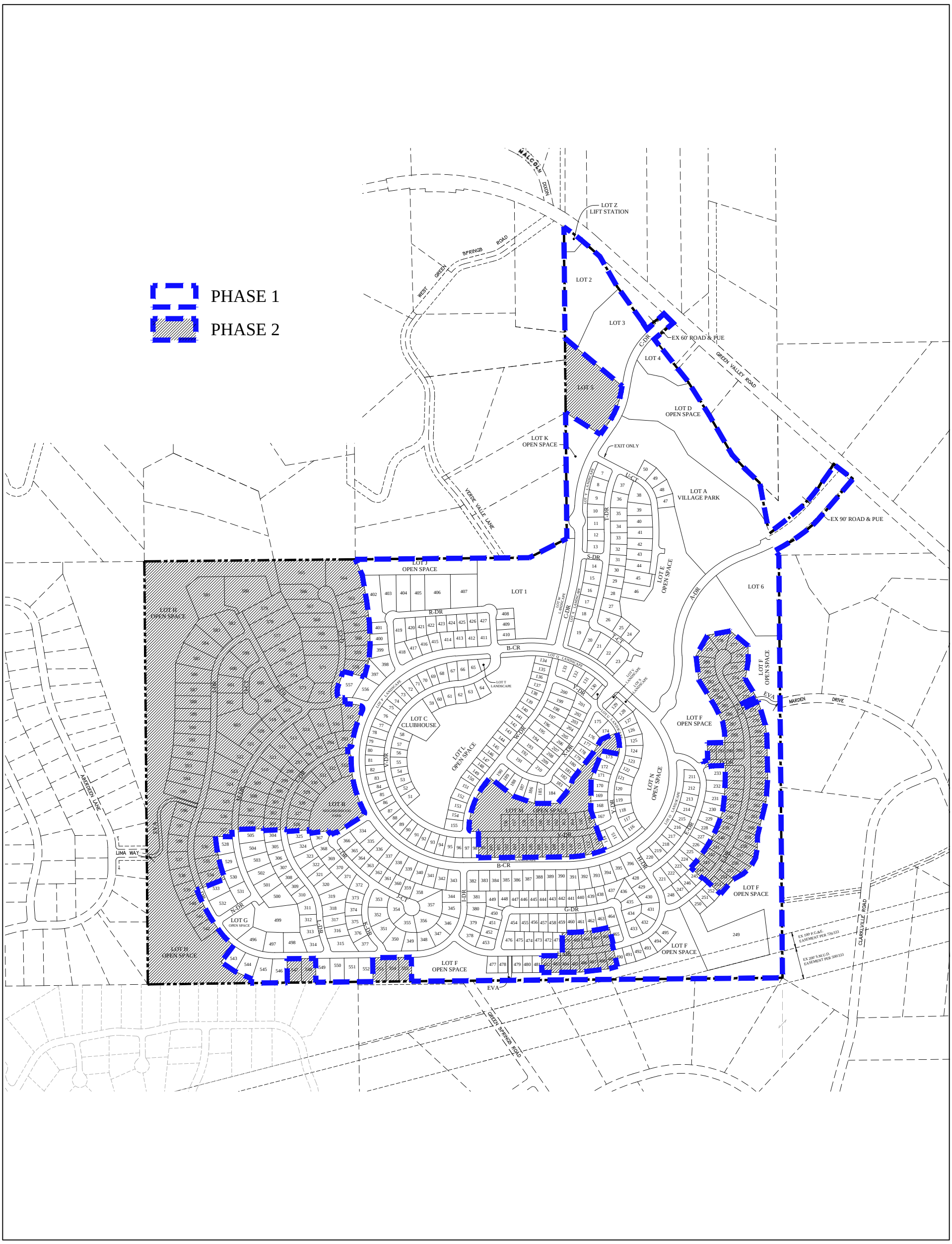
No development would occur in Phase 2 until Option B is adopted by the County. The applicant could then submit the Phase 2 tentative map and development plan applications for approval providing both are found consistent with the new regulations. Additional CEQA analysis would be required to address oak tree removal for Phase 2 as allowed in a revised and adopted Option B Oak Woodland Conservation Ordinance. Any differences that might be proposed between the previous conceptual approvals and the submitted Phase 2 tentative map and development plan applications would be subject to further review by the County in compliance with Chapter 16.24 of the El Dorado County Subdivisions Ordinance and Section 17.14.070 of the Zoning Ordinance.

8. General Plan and Zoning Designations

As part of the approvals associated with the project, the applicant is seeking to amend the General Plan and Zoning designations for the project site. The General Plan depicts the project site as being entirely within the established urban limit line of the El Dorado Hills Community Region, which demarcates where urban and suburban land use development will occur. However, the current General Plan land use designations for the project site are Low Density Residential (LDR) and Open Space (OS) only. As part of the approval process, the applicant is requesting amendments to the General Plan designation to include High Density Residential (HDR) and Medium Density Residential (MDR) with the LDR and OS designations, consistent with the Community Region planning area under Policy 2.2.1.1.

The existing zoning of the project site includes Estate Residential-Five Acre (RE-5) and Exclusive Agricultural (AE), the latter of which was required for approval of two Williamson Act Contracts that completely rolled out as of 1997 and 1999, respectively. The applicant is requesting a rezone of the project site to the following base zones, with the addition of the Planned Development Combining Zone on each:

- One-Family Residential – Planned Development District (R1-PD);
- One-Acre Residential – Planned Development District (R1A-PD);
- Single –Family Three-Acre Residential – Planned Development District (R3A-PD);
- Estate Residential Five-Acre – Planned Development District (RE5-PD);
- Recreational Facilities – Planned Development District (RF-PD); and
- Open Space – Planned Development District (OS-PD).



LSA

FIGURE III-14

N

NOT TO SCALE

Dixon Ranch Residential Project EIR

Project Phasing

SOURCE: CTA, APRIL 2014.

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Figure III-15 shows the proposed General Plan and Zoning designations, and Figure III-16 shows acreages associated with each designation

The PD Combining Zone shall conform to the proposed base zone standards, with the following exceptions:

One-Family Residential – Planned Development District (R1-PD). Modifications to the development standard for the R1-PD zone are described in Tables III-4, III-5, and III-6.

Table III-4: R1-PD Development Standards (Lots 7-248, 250-401, and 408-495; and Clubhouse Lot C)

	Standard R1 Zone	R1-PD Zone for These Lots	R1-PD Zone for Clubhouse Lot C
Minimum Lot Area	6,000 sf	4,725 sf	20,000 sf
Maximum Building Coverage	35 percent	None	None
Minimum Lot Width	60 feet	45 feet [a]	60 feet [a]
Minimum Front Yard Setback	20 feet	15 feet [b]	20 feet
Minimum Side Yard Setback	5 feet	5 feet [c]	15 feet [c,d]
Minimum Rear Yard Setback	15 feet	15 feet	20 feet
Corner Side Yard Setback	20 feet	12.5 feet	20 feet
Maximum Building Height	40 feet	40 feet	60 feet

[a] Minimum lot frontage shall be measured at front setback line. Lots may have an increased front yard setback to achieve lot width requirements as needed.
[b] Measured to face of building or side-load garage. (20 foot minimum to front load garage)
[c] The side yard shall not be increased one foot for each additional foot of building height in excess of 25 feet.
[d] The side yard shall be increased to 20 feet for second story elements and 25 feet for third story elements.
sf = square feet

Source: CTA Engineering & Surveying, 2014.

Table III-5: R1-PD Development Standards (Lots 402-407, 496-521, and 528-555)

	Standard R1 Zone	R1-PD Zone for These Lots
Minimum Lot Area	6,000 sf	10,000 sf
Maximum Building Coverage	35 percent	None
Minimum Lot Width	60 feet	80 feet [a]
Minimum Front Yard Setback	20 feet	20 feet
Minimum Side Yard Setback	5 feet	5 feet
Minimum Rear Yard Setback	15 feet	15 feet
Corner Side Yard Setback	20 feet	15 feet
Maximum Building Height	40 feet	45 feet

[a] Minimum lot frontage shall be measured at front setback line. Lots may have an increased front yard setback to achieve lot width requirements as needed.
sf = square feet

Source: CTA Engineering & Surveying, 2013.

Table III-6: R1-PD Development Standards (Lots 522-527, 556-563, 566-579, and 582-605)

	Standard R1 Zone	R1-PD Zone for These Lots
Minimum Lot Area	6,000 sf	10,000 sf
Maximum Building Coverage	35 percent	None
Minimum Lot Width	60 feet	80 feet [a]
Minimum Front Yard Setback	20 feet	20 feet
Minimum Side Yard Setback	5 feet	5 feet
Minimum Rear Yard Setback	15 feet	15 feet
Corner Side Yard Setback	20 feet	15 feet
Maximum Building Height	40 feet	50 feet [c]

[a] Minimum lot frontage shall be measured at front setback line. Lots may have an increased front yard setback to achieve lot width requirements as needed.

sf = square feet

Source: CTA Engineering & Surveying, 2013.

One-Acre Residential – Planned Development District (R1A-PD). Modifications to the development standards for the R1A-PD zone are described below:

- Minimum parcel width of 100 feet shall be measured at front setback line. Lots may have an increased front yard setback to achieve lot width requirements as needed.
- Maximum building height may be increased from 45 to 50 feet as measured from the lowest point of the foundation, except for Lot 4.

Single –Family Three-Acre Residential – Planned Development District (R3A-PD). Modifications to the development standards for the R3A-PD zone are described below:

- Minimum parcel width of 150 feet shall be measured at the front setback line. Lots may have an increased front yard setback to achieve lot width requirements as needed.
- Maximum building height may be increased from 45 to 50 feet as measured from the lowest point of the foundation, except at Lots 2 and 3.

Estate Residential Five-Acre – Planned Development District (RE5-PD). Modifications to the development standards for the RE5-PD zone are described below:

- Minimum parcel width of 100 feet shall be measured at the front setback line. Lots may have an increased front yard setback to achieve lot width requirements as needed.

Recreational Facilities – Planned Development District (RF-PD). Modifications to the development standards for the RF-PD zone are described below:

- No minimum parcel width shall apply.
- A 50-foot minimum setback shall not apply along property lines contiguous to open space lots.

Open Space – Planned Development District (OS-PD). Modifications to the development standards for the OS-PD zone are described below:

- No minimum parcel area shall apply.

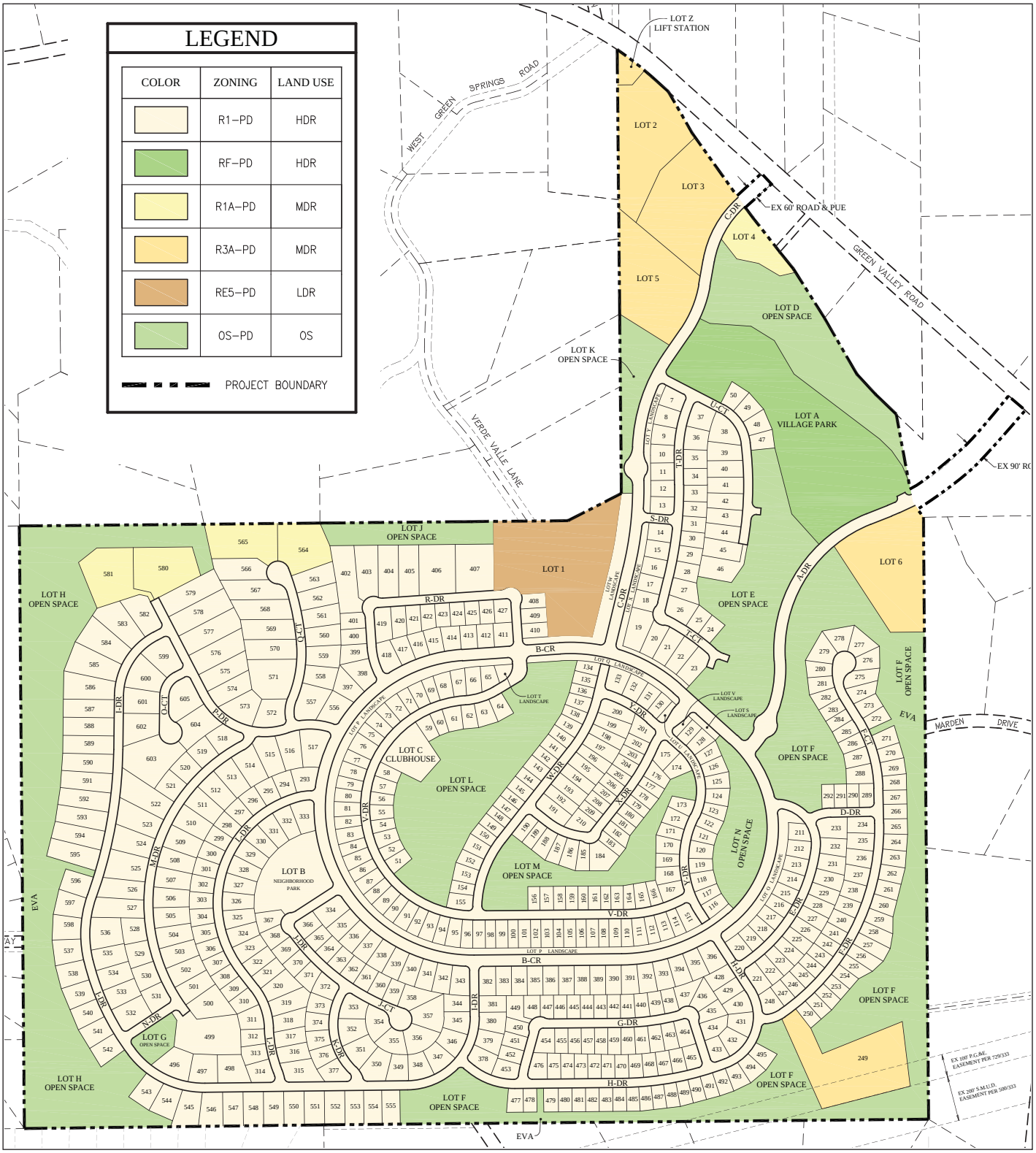

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FIGURE III-15

NOT TO SCALE

Dixon Ranch Residential Project EIR

Proposed General Plan and Zoning Designations

SOURCE: CTA, SEPTEMBER 2013.

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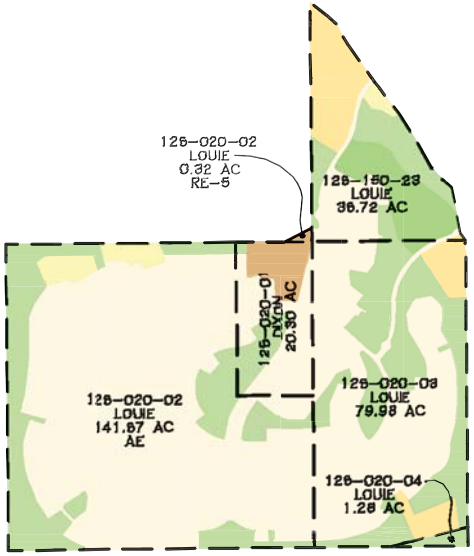

EXISTING GP LAND USE			PROPOSED GP LAND USE			
APN	AREA	LAND USE	HDR	MDR	LDR	OS
126-020-01	20.30 AC	LDR	11.86 AC	0	4.72 AC	3.72 AC
126-020-02	0.32 AC	LDR	0.02 AC	0	0.30 AC	0
126-020-02	141.67 AC	LDR	109.77 AC	4.51 AC	0	27.39 AC
126-020-03	79.98 AC	LDR	46.91 AC	6.26 AC	0	26.81 AC
126-020-04	1.28 AC	OS	0	0	0	1.28 AC
126-150-23	38.72 AC	LDR	17.70 AC	10.63 AC	0	8.39 AC
TOTALS	280.27 AC		186.26 AC	21.40 AC	5.02 AC	67.59 AC

LEGEND

COLOR	ZONING	LAND USE
	R1-PD	HDR
	RF-PD	HDR
	R1A-PD	MDR
	R3A-PD	MDR
	RE5-PD	LDR
	OS-PD	OS

EXISTING ZONING			PROPOSED ZONING					
APN	AREA	ZONING	R1-PD	R1A-PD	R3A-PD	RE5-PD	RF-PD	OS-PD
126-020-01	20.30 AC	AE	11.86 AC	0	0	4.72 AC	0	3.72 AC
126-020-02	0.32 AC	RE-5	0.02 AC	0	0	0.30 AC	0	0
126-020-02	141.67 AC	AE	109.77 AC	4.51 AC	0	0	0	27.39 AC
126-020-03	79.98 AC	AE	46.58 AC	0	6.26 AC	0	0.33 AC	26.81 AC
126-020-04	1.28 AC	AE	0	0	0	0	0	1.28 AC
126-150-23	38.72 AC	AE	8.81 AC	1.01 AC	9.62 AC	0	8.89 AC	8.39 AC
TOTALS	280.27 AC		177.04 AC	5.52 AC	15.88 AC	5.02 AC	9.22 AC	67.59 AC

LSA

FIGURE III-16

N

NOT TO SCALE

SOURCE: CTA, MAY 2013.

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Dixon Ranch Residential Project EIR

Existing and Proposed General Plan and Zoning Designation Acreages

D. DISCRETIONARY ACTIONS AND USE OF THIS EIR

A number of permits and approvals, including discretionary actions are listed in Table III-7 and would be required before development of this project could proceed. As lead agency for the proposed project, the County of El Dorado would be responsible for the majority of approvals required for development. Other agencies may also have some authority related to the project and its approvals. Other agencies would use this EIR when deliberating over required permits and approvals.

As noted in Table III-7, the project would require a General Plan Amendment. The project is currently located entirely within the General Plan Community Region (urban limit line) of El Dorado Hills and is designated as Low Density Residential (LDR) land use and Open Space. LDR allows for a maximum density of 1 dwelling unit per 5 acres. The proposed project includes a General Plan Amendment to include or add to the following land use designations: High Density Residential (HDR) allowing for a density range of 1 to 5 units per acre; Medium Density Residential (MDR) allowing for a maximum density of one dwelling unit per acre; Low Density Residential (LDR) for the existing Dixon Residence; and additional Open Space (OS) designated areas.

Table III-7: Required Permits and Approvals

Lead Agency	Permit/Approval
County of El Dorado	• General Plan Amendment • Zone Change • Planned Development • Tentative Map • Approval of Phase 2 Conceptual Development Plan • Approval of Phase 2 Tentative Map and Final Development Plan • Design Waivers • Construction Drawings and associated permits • Final Subdivision Maps • Building Permits • Grading Permits • Encroachment Permits • Development Agreement
Other Agencies	
El Dorado County Air Quality Management District	• Fugitive Dust Control Plan • Asbestos Dust Mitigation Plan
El Dorado Irrigation District	• Annexation • Approval of utility connections/improvements • Approval of Water Supply Assessment
El Dorado Hills Community Service District	• Annexation • Approval of park designs • Offsite sewer easements, if applicable
El Dorado Hills Fire Department/County Water District	• Annexation • Wildland Fire Safety Plan • Approval of Road and Utility Improvements
El Dorado County Resources Conservation District	• Erosion Control Plan
El Dorado Local Agency Formation Commission	• Approval of annexations
State Water Resources Control Board	• Storm Water Pollution Prevention Plan (SWPPP)
California Department of Fish and Wildlife	• Streambed Alteration Agreement

Source: LSA Associates, Inc., 2014.

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IV. SETTING, IMPACTS, AND MITIGATION MEASURES

This chapter contains an analysis of each topic that has been identified through preliminary environmental evaluation of the Dixon Ranch Residential Project and as such, constitutes the major portion of this EIR. Sections A through N of this chapter describe the environmental setting of the proposed project as it relates to each specific environmental topic. The impacts resulting from the proposed project and mitigation measures that would reduce significant impacts of the project are also presented in each section.

A. DETERMINATION OF SIGNIFICANCE

Under CEQA, a significant effect is defined as a substantial, or potentially substantial, adverse change in the environment.[1] The *CEQA Guidelines* direct that this determination be based on scientific and factual data. Each impact evaluation in this chapter is prefaced by criteria of significance, which are the thresholds for determining whether an impact is significant. These criteria of significance are based on the *CEQA Guidelines* and applicable County policies.

B. ISSUES ADDRESSED IN THE DRAFT EIR

The following environmental issues are addressed in this chapter:

A. Land Use and Planning Policy

B. Population and Housing

C. Transportation and Circulation

D. Air Quality

E. Greenhouse Gas Emissions

F. Noise

G. Biological Resources

H. Cultural Resources

I. Geology, Soils, and Seismicity

J. Hydrology and Water Quality

K. Hazards and Hazardous Materials

L. Utilities

[1] CEQA Section 21068.

M. Public Services

N. Visual Resources

Please note that Agriculture, Forestry and Mineral Resources are discussed in Section IV.A, Land Use and Planning Policy, and Recreation is discussed in Section IV.M, Public Services.

C. ENVIRONMENTAL SETTING

This chapter has been prepared in accordance with *CEQA Guidelines* Section 15125, which states: "An EIR must include a description of the physical environmental conditions in the vicinity of the project, as they exist at the time the notice of preparation is published, or if no notice of preparation is published, at the time environmental analysis is commenced, from both a local and regional perspective. The environmental setting will normally constitute the baseline physical conditions by which a Lead Agency determines whether an impact is significant. The description of the environmental setting shall be no longer than is necessary to an understanding of the physical effects of the proposed project and its alternatives."

The NOP for the proposed project was published on December 14, 2012. Thus every one of the environmental topical sections in this chapter includes a discussion of physical conditions in the vicinity of the site on or around December 2012.

D. FORMAT OF ISSUE SECTIONS

Each environmental topic considered in this chapter comprises two primary sections: (1) Setting and (2) Impacts and Mitigation Measures. An overview of the general organization and the information provided in the two sections is provided below:

- *Setting*. The Setting section for each environmental topic generally provides a description of the applicable physical setting (e.g., existing land uses, existing soil conditions, existing traffic conditions). An overview of regulatory considerations that are applicable to each specific environmental topic is also provided.
- *Impacts and Mitigation Measures*. The Impacts and Mitigation Measures section for each environmental topic presents a discussion of the impacts that could result from implementation of the proposed project. The section begins with the criteria of significance, which establish the thresholds to determine whether an impact is significant. The latter part of this section presents the impacts from the proposed project and mitigation measures, as appropriate. The impacts of the proposed project are organized into less-than-significant impacts (which do not require mitigation measures) and significant impacts (which do require mitigation measures).

Impacts are numbered and shown in bold type, and the corresponding mitigation measures are numbered and indented. Impacts and mitigation measures are numbered consecutively within each topical analysis and begin with an acronymic or abbreviated reference to the impact section (e.g., LU). The following symbols are used for individual topics:

LU	Land Use and Planning Policy
POP	Population and Housing
TRANS	Transportation and Circulation
AIR	Air Quality
GHG	Greenhouse Gas Emissions
NOI	Noise
BIO	Biological Resources
CULT	Cultural Resources
GEO	Geology, Soils, and Seismicity
HYD	Hydrology and Water Quality
HAZ	Hazards and Hazardous Materials
UTL	Utilities
PS	Public Services
VIS	Visual Resources

Impacts are also categorized by type of impact, as follows: Less-Than-Significant, Significant, and Significant and Unavoidable. The following notations are provided after each identified significant impact and after identification of mitigation measures:

LTS	Less Than Significant
S	Significant
SU	Significant and Unavoidable

E. CUMULATIVE ANALYSIS CONTEXT

CEQA defines cumulative as “two or more individual effects which, when considered together, are considerable, or which can compound to increase other environmental impacts.” Section 15130 of the *CEQA Guidelines* requires that an EIR evaluate potential environmental impacts when the project’s incremental effect is cumulatively considerable. “Cumulatively considerable” means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects. These impacts can result from a combination of the proposed project together with other projects causing related impacts.

When evaluating cumulative impacts, CEQA allows the use of either a list of past, present, or reasonable anticipated relevant projects, including projects outside the control of the lead agency, or a summary of the projections in an adopted planning document, such as a General Plan, or some thoughtful combination of the two.

For the cumulative traffic analysis, the Cumulative (2025) analysis are based on the current County travel demand model’s forecasted volumes representing a General Plan planning horizon of 2025. A straight line growth rate was calculated based on existing (1998) and 2025 model volumes. For the

Existing plus Approved Projects (2018) scenarios, the following approved projects were included in the traffic modeling:

- Lessera Development
- Carson Creek – Unit 1 (302 housing units)
- Carson Creek – Unit 2 (634 detached and half-plex senior houses and 305 attached senior houses)
- Ridgeview 9 (44 housing units)
- Sun Stone Business Park
- Hilldale Office Park
- Sparks Property (25 housing units)*
- Lomita Way Rezone from RE 10 to R2A (24 housing units)*
- West Valley Villages 6&7 (111 housing units)
- Promontory Village Center (64 housing units)
- El Dorado Professional Center (19,500 square feet of office)
- Wilson Estates (49 housing units)*
- Saratoga Mixed Use Center (32,900 square foot shopping center)
- Diamante Estates (20 housing units)*
- Parkes Property (47 housing units)*
- Green Valley Center (29,000 square feet of retail and office)
- Chartraw (8 housing units)*
- Ghori Property (Summerbrook, 29 housing units)*
- Silver Springs (244 housing units)*
- Serrano Village K5 (143 housing units)*
- Serrano Village K1/2 PH5 (166 housing units)*
- Serrano Village K1/2 PH4 (47 housing units)*
- Serrano Village M3 (30 housing units)*
- Serrano Village M4 (38 housing units)*
- Serrano Village M2 (73 housing units)*
- Serrano Village M5 (10 housing units)*
- Springs Ranch Equestrian Center*

The traffic model outputs were used to assess the potential cumulative air quality, global climate change, and noise impacts. To assess potential cumulative impacts for the remaining environmental topics, the County of El Dorado was consulted for a list of past, present, and reasonably anticipated projects located within the project vicinity (within 2 miles of the project site). These projects are denoted in the list above with an (*). A discussion of cumulative impacts is included within each environmental section.

A. LAND USE AND PLANNING POLICY

This section describes existing land uses on the project site as well as the surrounding area, defines the existing regulatory context, identifies potential land use and policy impacts, and recommends mitigation measures, where appropriate. Agriculture, forestry, and mineral resources are addressed in this section.

This section also contains a discussion of relevant land use policies. However, policy conflicts do not, in and of themselves, constitute a significant environmental impact. Potential conflicts are considered to be environmental impacts only when they would result in direct physical impacts. Therefore, land use policies are discussed in this section for informational purposes only. All other associated physical impacts are discussed in this Draft EIR in specific topical sections such as noise, air quality, and transportation.

1. Setting

The following section describes the existing land uses and regulatory context of the project site and vicinity.

a. Existing Land Use. Land uses on and adjacent to the project site are shown in Figure IV.A-1 and are described below. Photographs of the site are provided in Figures IV.A-2a and IV.A-2b (Photos 1 through 4). Also refer to existing site photos contained in Chapter III, Project Description.

(1) Project Site. As described in Chapter III, Project Description, the approximately 280-acre project site consists of four parcels and is largely undeveloped. The site is primarily covered by grassland vegetation and is used for cattle grazing. There is a small strawberry field located in the northern portion of the site. Trees are scattered throughout the varied terrain, with a concentration of trees located in the northwest corner of the property. Along the north side of the site, and parallel to Green Valley Road, is Green Springs Creek, which flows from east to west. Within the creek corridor are two existing ponds separated by an earthen embankment that provides access to the south side of the ponds.

A few structures, including two residential units (one occupied and one abandoned) and assorted storage/accessory structures, are located in the northern portion of the site near Green Valley Road and near the terminus of Verde Valle Lane. There is also a storage shed north of the lower pond. The remainder of the site does not include any structures other than infrastructure related to cattle-grazing, including gates, fences, and feeding troughs. An existing Sacramento Municipal Utility District (SMUD) high-voltage utility line and associated corridor is located at the southeast corner of the property. A 21 kV PG&E utility line is located in the northern portion of the site, roughly parallel to Old Green Valley Road. Additionally, there are two electrical lines from the abandoned residential unit: one is connected to the 21 kV PG&E line, and one runs to an electrical line on Green Valley Road.

(2) Surrounding Area. As shown in Figure IV.A-1, the project site is primarily surrounded by a mix of existing and planned high-density, low-density and rural residential uses. The site is bordered to the north and east by low-density rural residential developments and Green Valley Road. The Green Springs Ranch subdivision is east and southeast of the site. Lands that border the site immediately to the south have been used for grazing in the past, but these lands are planned for

development as part of the Serrano Village M2 subdivision. The Highland View subdivision, which includes high-density residential uses, is located immediately to the west of the site.

b. Regulatory Context. Planning and regulatory documents that guide land use and development on the project site include the El Dorado County General Plan (General Plan) and the Zoning Ordinance. Brief descriptions of these documents, as well as the State Farmland Mapping and Monitoring Program, Williamson Act, and Surface Mining and Reclamation Act are provided below.

(1) General Plan. The El Dorado County General Plan[1] provides a blueprint for growth within the unincorporated areas of the County. The County Board of Supervisors adopted the most recent General Plan on July 19, 2004. The General Plan contains the following topical elements: Land Use; Transportation and Circulation; Housing; Public Services and Utilities; Public Health, Safety and Noise; Conservation and Open Space; Agriculture and Forestry; Parks and Recreation; and Economic Development. Each element establishes goals and policies to guide future land use activities and development within the General Plan boundaries.

The Land Use Element sets forth specific goals, objectives, and policies to guide the intensity, location, and distribution of land uses. The General Plan Land Use Diagram is also a part of this element and graphically represents the County's goals, objectives, and policies. The General Plan land use diagram delineates areas where future higher density growth and urban/suburban activities are anticipated and/or will be directed.

The General Plan Land Use Element recognizes three types of planning concept areas within the County: Community Regions, Rural Centers, and Rural Regions. The urban limit line establishes a line on the General Plan land use map demarcating where the urban and suburban land uses will be developed. As the established urban limit line, the purpose of the Community Region is to provide opportunities that allow for continued population growth and economic expansion while preserving the character and extent of existing rural centers and urban communities, emphasizing both the natural setting and built design elements which contribute to the quality of life and economic health of the County. The project site is located entirely within the General Plan Community Region boundary of El Dorado Hills.

The General Plan Land Use Element establishes an appropriate range of land use designations that will distribute growth and development in a manner that maintains the rural character of the County, utilizes infrastructure in an efficient, cost-effective manner, and furthers the implementation of the Community Region, Rural Center, and Rural Region concept areas. The project site is primarily designated Low Density Residential (LDR) on the Land Use Diagram. The 1.5-acre southeast corner of the site, which is within the existing SMUD utility corridor, is designated as Open Space (OS).

The proposed project includes a General Plan Amendment to change the existing land use designations for the site from LDR and OS to a combination of LDR, High Density Residential (HDR), Medium Density Residential (MDR), and OS. The proposed land use designations for the project site are depicted in Figures III-15 and III-16 in Chapter III, Project Description. The existing and proposed land use designations that are applicable to the proposed project are described below.

[1] El Dorado County, 2004. *El Dorado County General Plan*. July.

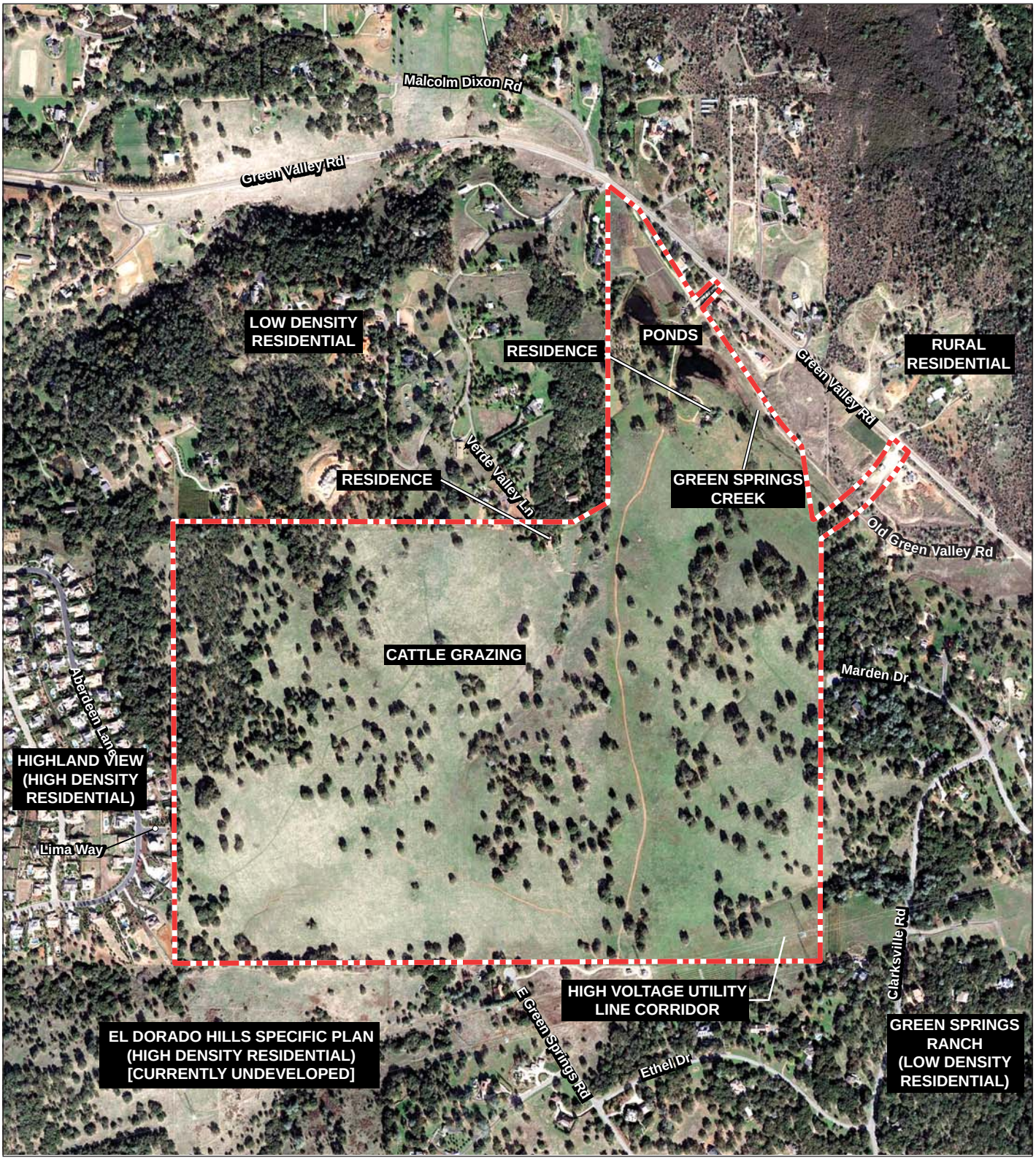

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FIGURE IV.A-1

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0 425 850
FEET

Project Site

Dixon Ranch Residential Project EIR

Aerial Photograph of Project Site and Land Use Photo Location Map

SOURCES: GOOGLE EARTH, 2010; LSA ASSOCIATES, INC., 2012.

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Photo 1: On-site cattle grazing infrastructure

Photo 2: On-site residence

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FIGURE IV.A-2a

Dixon Ranch Residential Project EIR

Project Site Photos

SOURCE: LSA ASSOCIATES, INC., JUNE 2013.

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Photo 3: Representative photo of on-site grassland and scattered trees

Photo 4: SMUD utility corridor

LSA

FIGURE IV.A-2b

Dixon Ranch Residential Project EIR

Project Site Photos

SOURCE: LSA ASSOCIATES, INC., JUNE 2013.

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- *High Density Residential.* The HDR designation is for areas with intensive single-family residential development at densities from 1 to 5 dwelling units per acre. Allowable residential structure types include single-family attached (i.e., air-space condominiums, townhouses) and detached dwellings and manufactured homes. Except as provided in General Plan Policy 2.2.2.3, this designation is considered appropriate only within Community Regions and Rural Centers. Standard residential subdivisions are required to maintain a density range from 1 to 2 dwelling units per acre; however, when utilizing the planned development concept, new subdivisions may maintain a density range from 1 to 5 dwelling units per acre.
- *Medium Density Residential.* This MDR designation establishes areas suitable for detached single-family residences with larger lot sizes which enable limited agricultural land management activities. This designation is applied where the character of an area is single-family residences; where the absence or reduced level of infrastructure including roads, water lines, and sewer lines does not justify higher densities; where the topography poses a constraint to higher densities; and as a transitional land use between the more highly developed and the more rural areas of the County. The maximum allowable density for the MDR designation is 1 dwelling unit per acre. Parcel sizes range from 1 to 5 acres.
- *Low Density Residential.* The LDR designation establishes areas for single-family residential development in a rural setting. This land use designation applies to areas within Community Regions (and Rural Centers) where higher density-serving infrastructure is not yet available. The maximum allowable density is one dwelling unit per 5 acres. Parcel sizes range from 5 to 10 acres. Within Community Regions, the LDR designation remains in effect until a specific project is proposed that applies the appropriate level of analysis and planning and the necessary expansion of infrastructure.
- *Open Space.* This designation applies to public lands where no development other than that specifically needed for government-related open space uses is desired as well as private lands to maintain natural features within clustered development.

General Plan land use and agriculture, forestry, and mineral resources policies applicable to the proposed project are outlined below. Policies related to other topics are evaluated in the other topical sections within Chapter IV of this EIR.

Land Use Element

- Policy 2.1.1.7: Development within Community Regions, as with development elsewhere in the County, may proceed only in accordance with all applicable General Plan Policies, including those regarding infrastructure availability as set forth in the Transportation and Circulation and the Public Services and Utilities Elements. Accordingly, development in Community Regions and elsewhere will be limited in some cases until such time as adequate roadways, utilities, and other public service infrastructure become available and wildfire hazards are mitigated as required by an approved Fire Safe Plan.
- Policy 2.2.5.2: All applications for discretionary projects or permits including, but not limited to, General Plan amendments, zoning boundary amendments, tentative maps for major and minor land divisions, and special use permits shall be reviewed to determine consistency with the policies of the General Plan. No approvals shall be granted unless a finding is made that the project or permit is consistent with the General Plan. In the case of General Plan amendments, such amendments can be rendered consistent with the General Plan by modifying or deleting the General Plan provisions,

including both the land use map and any relevant textual policies, with which the proposed amendments would be inconsistent.

- Policy 2.2.5.4: All development applications which have the potential to create 50 parcels or more shall require the application of the Planned Development combining zone district. However, in no event shall a project require the application of the Planned Development combining zone district if all of the following are true: (1) the project does not require a General Plan amendment; (2) the project has an overall density of two units per acre or less; and (3) the project site is designated High-Density Residential.
- Policy 2.2.5.21: Development projects shall be located and designed in a manner that avoids incompatibility with adjoining land uses that are permitted by the policies in effect at the time the development project is proposed. Development projects that are potentially incompatible with existing adjoining uses shall be designed in a manner that avoids any incompatibility or shall be located on a different site.

Agriculture and Forestry Element

- Policy 8.1.3.4: A threshold of significance for loss of agricultural land shall be established by the Agriculture Department and the Planning Department, with opportunity for public comment before adoption, to be used in rezone applications requesting conversion of agricultural lands to non-agricultural lands, based on the California LESA system. For projects found to have a significant impact, mitigation shall include 1:1 replacement or conservation for loss of agricultural land in active production and/or 1:1 replacement or conservation for land identified as suitable for agricultural production. A monitoring program should be established to be overseen by the Agricultural Department.
- Policy 8.1.4.1: The County Agricultural Commission shall review all discretionary development applications and the location of proposed public facilities involving land zoned for or designated agriculture, or lands adjacent to such lands, and shall make recommendations to the reviewing authority. Before granting approval, a determination shall be made by the approving authority that the proposed use:

  A. Will not intensify existing conflicts or add new conflicts between adjacent residential areas and agricultural activities; and

  B. Will not create an island effect wherein agricultural lands located between the project site and other non-agricultural lands will be negatively affected; and

  C. Will not significantly reduce or destroy the buffering effect of existing large parcel sizes adjacent to agricultural lands.

(2) Zoning Ordinance. The County's Zoning Ordinance[2] is included in Chapter 17 of the Ordinance Code. The Zoning Ordinance sets forth regulations to ensure that development and land use activities protect and promote the health, safety, comfort, convenience, prosperity, and general welfare of residents and businesses in the County. The County is currently preparing a comprehensive update to the Zoning Ordinance, which is expected to be adopted in 2015. A draft of the Zoning Ordinance Update (October 12, 2012) is currently available for public review. The applicable zoning for the project site and analysis provided in this EIR reflects the zoning designations and regulations as set forth in the currently adopted Zoning Ordinance.

[2] El Dorado County, 2010. *El Dorado County Ordinance Code, Chapter 17: Zoning Ordinance*. November.

The project site is currently zoned Exclusive Agriculture (AE) and Estate Residential Five Acres (RE-5). The proposed project includes a Rezoning to allow for a mix of residential uses on the site, under a Planned Development (PD) combining zone. The base zoning districts that would be applied to the rezoned site include: One-Family Residential (R1), One-Acre Residential (R1A), Estate Residential Five-Acre (RE5), Single-Family Three-Acre Residential (R3A), Recreational Facilities (RF), and Open Space (OS). The existing and proposed zoning districts that are applicable to the project site are described below. Zoning designations and development standards are also described in Chapter III.C.8, General Plan and Zoning Designations.

- *One-Family Residential.* The R1 district applies to development of single-family detached residential uses with a minimum lot size of 6,000 square feet (when served by public water supply and sewer systems). Maximum lot coverage is 35 percent and the maximum building height is 40 feet.
- *One-Acre Residential.* The R1A district is similar to the R1 district except that the minimum lot is 1 acre in size. Accessory structures, such as guest houses, are also permitted. Building heights are limited to 45 feet.
- *Estate Residential Five Acre.* The purpose of the RE5 district is to provide for the orderly development of land having sufficient space and natural conditions compatible to residential and accessory agricultural and horticultural pursuits, and provide for the protection from encroachment of unrelated uses tending to have adverse effects on the development of the areas so designated. The minimum lot area for development of detached single-family dwellings within the RE5 district is 5 acres.
- *Single-Family Three-Acre Residential*. The purpose of the R3A district is to provide for the orderly development of single-family residential land consistent with conditions conducive to a desirable residential density and environment and to protect from the encroachment of unrelated uses that may have an adverse effect on the single-family residential development of the area. Single-family detached dwellings are permitted within this district and the minimum lot size is 3 acres. There is no maximum for lot coverage and building heights are limited to 45 feet.
- *Recreational Facilities.* The RF district applies to land and water areas which can accommodate one or more public recreation activities and/or public service facilities without causing irreversible changes to soil, vegetation, air, water, aesthetic values and human resources. The purpose of the recreational facilities zone is to provide for the orderly development and maintenance of lands and areas suitable and desirable for recreational pursuits and to protect them from the encroachment of unrelated uses which may adversely affect recreational uses. Recreational facilities in the RF district can include playgrounds, parks, ball fields, golf courses and other similar uses.
- *Open Space.* The purpose of the OS district is to provide for the open space needs of the County and applies to parcels or areas of land which are generally unimproved and devoted to and essential for: natural resource preservation; preservation of agricultural production; preservation of recreational enjoyment areas; prime or critical wildlife or habitat preservation; protection from seismic hazard areas; and protection of unusual or unique scenic values as determined by the Board of Supervisors. Single-family dwellings and agricultural production are permitted by right within the OS district.

- *Exclusive Agriculture.* The purpose of the Agricultural district is to designate those lands subject to the Land Conservation Act of 1965, also known as the Williamson Act. Within the AE District, uses are generally limited to those that include and support agricultural operations, including grazing. Structures are generally limited to one single-family dwelling unit per parcel and other structures that support agricultural operations.
- *Planned Development.* The purpose of the PD Combining Zone is to allow use of modern planning and development techniques, effect more efficient utilization of land, and to allow flexibility of development. The PD Combining Zone may be combined with any of the base zoning districts as part of a comprehensive development plan. The PD Combining Zone provides for flexibility in development standards, which may not in all aspects conform to the existing zoning regulations. The permitted uses are limited to those listed within the base zoning district with which the PD Combining Zone is combined.

(3) California Farmland Mapping and Monitoring Program. The California Department of Conservation's Division of Land Resource Protection established the State Farmland Mapping and Monitoring Program (FMMP) in 1982. The FMMP conducts comprehensive mapping of State farmland. The intent of the FMMP is to provide decision-makers with information regarding State agricultural resources, including data on existing farmland, and farmland development trends. The FMMP compiles maps depicting important farmland, based on United States Department of Agriculture soil surveys and other physical data, such as climate, growing season, and water supply.

The FMMP divides land into seven categories, including: 1) Prime Farmland; 2) Farmland of Statewide Importance; 3) Unique Farmland; 4) Farmland of Local Importance; 5) Grazing Land; 6) Urban and Built-Up Land; and 7) Other Land. The project site is designated as "Grazing Land" by the FMMP.[3] According to the FMMP, Grazing Land consists of land on which the existing vegetation is suited to the grazing of livestock. The site is surrounded by additional Grazing Land and "Other Land" on the north, east, and south and "Urban and Built-Up Land" to the west. These designations apply to developed areas or areas that may be undeveloped but are not designated for agricultural or grazing uses.

(4) Williamson Act. The California Land Conservation Act of 1965 (Williamson Act) was passed by the Legislature in response to rapidly increasing agricultural land prices (and, by extension, property taxes) that made it difficult for many farmers to remain in agriculture, along with concerns that prime agricultural land and open space were being irreplaceably lost to urban sprawl. This voluntary program allows property owners to have their property assessed on the basis of its agricultural production value rather than at the current market value. The property owned is thus relieved of paying higher property taxes, as long as the land remains in agricultural production. The purpose of the Williamson Act is to encourage property owners to continue to farm their land, and to prevent the premature conversion of farmland to urban uses.

[3] California, State of, 2011. Department of Conservation, Division of Land Resource Protection, Farmland Mapping and Monitoring Program. *El Dorado County Important Farmland 2010 (map).* July.

Participation in the Williamson Act in El Dorado County generally requires that the area consist of a minimum of 20 contiguous acres for high-intensity farming or 50 contiguous acres for low-intensity farming, such as grazing operations, on land under one or more ownerships. Land within an approved preserve is restricted to agricultural and compatible uses for a period of 10 years. Williamson Act contracts are automatically renewed annually for an additional one-year period, unless the property owner applies for non-renewal or early cancellation. There are limited provisions for cancellation of contracts, specific findings regarding the non-viability of the agricultural use must be made, and a substantial penalty is assessed for the cancellation.

All lands within the County subject to a Williamson Act are zoned Exclusive Agricultural (AE) or Agricultural Preserve (AP). Certain restrictions apply to these zones that do not normally apply to other agricultural zone districts in the County. The purpose of the AE and AP zones are to implement the California Land Conservation Act, and to encourage the sustainable use of farmland in the County for agricultural production.

Approximately 33,969 acres of agricultural land, or approximately 3 percent of the County's total 1.14 million acres, are currently enrolled under the Williamson Act. The nearest Williamson Act contract land is approximately 8 miles east of the project site. Although a portion of the project site is currently zoned AE, the site has not been enrolled in a Williamson Act contract since 1999 and surrounding areas are not currently or recently enrolled under a Williamson Act contract.[4]

(5) Surface Mining and Reclamation Act. The Surface Mining and Reclamation Act (SMARA) was enacted in 1975 to address the need for a continuing supply of mineral resources, and to prevent or minimize the negative impacts of surface mining to public health, property, and the environment. SMARA includes a process called "classification-designation." The purpose of this process is to provide local agencies with information about the location, need and importance of various mineral resources within their jurisdiction, and to ensure this information is used in local land use decisions.

2. Impacts and Mitigation Measures

The following section presents a discussion of the impacts related to land use, agricultural, forestry, and mineral resources that could result from implementation of the proposed project. The section begins with the criteria of significance, which establish the thresholds to determine if an impact is significant. The latter part of this section presents the impacts from the proposed project and the recommended mitigation measures, if required. Cumulative impacts are also addressed.

a. Criteria of Significance. Development of the proposed project would result in a significant impact related to land use, planning policy, or agricultural, forestry and mineral resources if it would:

[4] California, State of, 2013. Department of Conservation, Division of Land Resource Protection, Conservation Program Support. *El Dorado County Williamson Act FY 2012/2013 (map).*

- Physically divide an established community;
- Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the General Plan or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect;
- Place incompatible land uses adjacent to existing land uses;
- Convert a substantial amount of Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or Farmland of Local Importance (including land identified by the County as "choice agricultural land"), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the Department of Conservation, to nonagricultural uses;
- Convert a substantial amount of land currently in agricultural production to nonagricultural use;
- Convert a substantial amount of grazing land, as defined by the County Agricultural Commission, to non-grazing uses in such a manner that it would substantially reduce the viability of grazing resources in the County;
- Conflict with, or result in cancellation of, a Williamson Act contract;
- Convert forestland zoned Timber Production Zone (TPZ), Exclusive Agriculture (AE), or land currently in timber production to non-forestry uses;
- Create an obstacle to processing of timber resources in the County;
- Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the State; or
- Result in the loss of availability of a locally important mineral resource recovery site delineated on the General Plan.

b. Project Impacts. The following discussion describes the potential impacts related to land use and agricultural, forestry and mineral resources that would result from implementation of the proposed project.

(1) Divide an Established Community. The physical division of an established community typically refers to the construction of a physical feature (such as an interstate highway or railroad tracks) or removal of a means of access (such as a local road or bridge) that would impair the mobility within an existing community, or between a community and outlying areas. For instance, the construction of an interstate highway through an existing community may constrain travel from one side of the community to another; similarly, such construction may also impair travel to areas outside of the community.

The proposed project would result in the development of residential uses and preservation of open space on the privately-owned, undeveloped project site. Access to the site would be provided via two direct connections to Green Valley Road. The westerly access would be located approximately 1,000 feet east of the intersection with Malcolm Dixon Road and would allow for right-in/right-out turning movements only. The second access would be located approximately 1/2 mile east of the intersection with Malcolm Dixon Road and would allow for full turning movements. These roadways would provide access to the internal circulation system and "loop road" within the subdivision. Some

internal roadways would have gated access. Existing surrounding roadways that currently terminate at the project site boundary, including Verde Valle Lane, Marden Drive, Green Springs Road, and Lima Way would not be extended onto the project except in some cases to allow emergency access only. Bike trails and pedestrian pathways would be incorporated into the proposed project design and pedestrian pathways would be located on one side of the internal roadway network throughout the majority of the development, allowing movement for various modes of travel throughout the development.

Given the above, the proposed residential development would not create a physical barrier to travel around or within the project site or remove existing means of access to and through existing nearby neighborhoods. Therefore, the proposed project would result in a less-than-significant impact related to the physical division of an established community.

(2) Conflict with Applicable Land Use Plans or Policies. The proposed project includes a General Plan Amendment and Rezoning to allow the development of up to 604 new residential units and associated infrastructure and amenities on the site, as discussed below. The proposed project's consistency with existing General Plan and Zoning Ordinance regulations is discussed below.

While this section also contains a brief discussion of the consistency of the project with relevant land use policies, according to CEQA, policy conflicts do not, in and of themselves, constitute a significant environmental impact. A policy inconsistency is considered to be a significant adverse environmental impact when it is related to a policy adopted for the purpose of avoiding or mitigating an environmental effect and it is anticipated that the inconsistency would result in a significant adverse *physical* impact. Any such associated physical impacts are discussed in this EIR under specific topical sections, such as noise, air quality, and transportation and circulation, as appropriate. The proposed project would generally conform to the intent of the County General Plan and Zoning Ordinance as described below.

General Plan. The proposed project is located within the Community Region of El Dorado Hills and includes a General Plan Amendment to change the land use designations on the currently undeveloped site from LDR and OS to LDR, HDR, MDR, and OS to allow a mix of residential and supporting uses. The project's consistency with the General Plan's overall vision for development in this area of the County and consistency with the proposed land use designations for the site is discussed below.

As previously described, the existing LDR land use designation, which covers all but about 1.28 acres of the approximately 280-acre site, applies to areas within Community Regions where higher density-serving infrastructure is not yet available as is generally the case on the existing undeveloped project site. Within Community Regions, the LDR designation remains in effect until a specific project is proposed that applies the appropriate level of analysis and planning and the necessary expansion of infrastructure. The proposed project includes a planned residential community, which is the subject of this EIR. As described throughout the EIR analysis, the proposed project would be subject to a number of discretionary approvals and would be required to implement mitigation measures to avoid or reduce the severity of potential environmental impacts. In addition, as described in Section IV.C, Transportation and Circulation and Section IV.L, Utilities, the project would be adequately served by the necessary infrastructure. Given its location within the Community Region and the proposed installation of appropriate infrastructure to support the new community, the project site is an appropri-

ate location for development of high- and medium-density residential uses and would be consistent with General Plan Policy 2.1.1.7. Given this, it is also appropriate that the site be considered for a General Plan Amendment to change the existing LDR designation.

The proposed project would change the land use designation for approximately 186.26 acres of the site to the HDR designation to allow for the development of up to 594 residential units and associated recreational facilities. The HDR designation allows densities from 1 to 5 dwelling units per acre (or a maximum of 5 units per 43,560 square feet). With implementation of the requested General Plan Amendment, the proposed project would be consistent with the HDR designation of 1 to 5 dwelling units per acre under a planned development, with an average of 3.2 dwelling units per acre.

The project would also change the land use designation for approximately 21.4 acres of the site to MDR to allow for the development of an additional 10 residential units. The maximum allowable density for the MDR designation is 1 dwelling unit per acre, with parcels ranging from 1 to 5 acres in size. With implementation of the requested General Plan Amendment, the proposed project would be consistent with the MDR designation, with an average of 0.47 dwelling units per acre.

One existing residential unit on the property would remain and would be located on a newly created 5-acre lot (Lot 1), designated as LDR. The LDR designation allows a maximum density of 1 dwelling unit per 5 acres.

The remaining 67.59 acres (or about 24 percent) of the project site would remain as OS, which would accommodate natural areas. Open space areas would also function as a buffer to adjacent developments. Commonly owned and publicly dedicated recreational open space, such as parks and landscaped areas, would comprise an additional 6 percent of the project site for a total of 30 percent open space in compliance with the General Plan.

Development of the 280.27-acre project site with a total of 605 residential units (604 new and 1 existing), at an overall density of approximately 2.16 dwelling units per acre, would be generally consistent with the development intensity envisioned within the Community Region boundaries.

(3) Zoning Ordinance. The proposed project includes a Planned Development Combining Zone with a mix of base zone districts that allow a variety of residential uses and associated open space. These base zone districts would include: R1, R1A, R3A, RE5, RF and OS. To accommodate the proposed project, the site would be rezoned from the existing AE zone district, which applies to the majority of the site.

The R1 and RF zone districts are consistent with the HDR land use designation in the General Plan. The R1 zone district allows development of single-family detached residential uses with a minimum lot size of 6,000 square feet and maximum lot coverage of 35 percent. Lot sizes that are less than the minimum square footage required by the base zone district are permitted within the PD Combining Zone. Recreational facilities would be located within both the R1 and RF base zone districts.

The R1A and R3A zone districts are consistent with the MDR land use designation in the General Plan. The R1A zone district is similar to the R1 zone district except that the minimum lot is 1 acre in size. Five residential units would be developed at a density of one dwelling unit per 1.1 acres. The

R3A zone district allows a minimum lot size of 3 acres. Up to 5 units would be developed within this zone district at a density of 1 dwelling unit per 3.2 acres.

The RE-5 zone district is consistent with the LDR land use designation in the General Plan. One existing single-family residence would remain on a 5-acre lot within the site. The RE-5 base zone district allows one dwelling unit per 5 acres.

The remainder of the site would be zoned OS to preserve existing trees and wetlands, serve as stormwater detention areas, and to provide a buffer to neighboring uses, consistent with the intent of this zone district.

As previously noted, the Planned Development Combining Zone allows flexibility in development standards that may not, in all aspects, conform to the existing zoning regulations. The required development plan would set the development standards for the project site, including the maximum density and number of units, minimum lot size, landscape and open space requirements, maximum building heights, setback requirements, and lot coverage. It is anticipated that all standards, densities, and other requirements would conform to the intent of the base zone district except for the instances described in Chapter III, Project Description, and listed below.

One-Family Residential – Planned Development District (R1-PD). Modifications to the development standards for the R1-PD zone are shown in Tables III-4. III-5, and III-6 in Chapter III, Project Description.

One-Acre Residential – Planned Development District (R1A-PD). Modifications to the development standards for the R1A-PD zone include:

- Minimum parcel width of 100 feet would be measured at front setback line. Lots may have an increased front yard setback to achieve lot width requirements as needed.
- Maximum building height may be increased from 45 to 50 feet as measured from the lowest point of the foundation, except for Lot 4.

Single –Family Three-Acre Residential – Planned Development District (R3A-PD). Modifications to the development standards for the R3A-PD zone include:

- Minimum parcel width of 150 feet would be measured at the front setback line. Lots may have an increased front yard setback to achieve lot width requirements as needed.
- Maximum building height may be increased from 45 to 50 feet as measured from the lowest point of the foundation, except at Lots 2 and 3.

Estate Residential Five-Acre – Planned Development District (RE5-PD). Modifications to the development standards for the RE5-PD zone include:

- Minimum parcel width of 100 feet would be measured at the front setback line. Lots may have an increased front yard setback to achieve lot width requirements as needed.

Recreational Facilities – Planned Development District (RF-PD). Modifications to the development standards for the RF-PD zone include:

- No minimum parcel width.

- A 50-foot minimum setback would not apply along property lines contiguous to open space lots.

Open Space – Planned Development District (OS-PD). For the OS-PD zone, no minimum parcel area would apply.

(4) Compatibility with Surrounding Land Uses. The proposed project would introduce residential and recreational uses onto the primarily undeveloped project site. The majority of the site is currently used for grazing with a small strawberry field located in the northern portion of the site; these uses are not necessarily compatible with the existing high-density residential uses immediately west of the site, and the high-density residential designation located south of the project site. Residential uses on the project site would be similar in scale to existing and planned residential developments within the vicinity, particularly the high-density residential development immediately west and the high-density residential use approved for the area south of the site. Grape growing occurs on some bordering residential parcels. Open space areas would generally surround the perimeter of the site providing a buffer from surrounding land uses and a transition from adjacent communities to the proposed residential subdivision. Therefore, the proposed project would be generally compatible with existing and planned land uses within the vicinity and would have a less-than-significant impact on land use compatibility.

(5) Convert Existing Farmland, Agricultural or Grazing Uses. The project site is not designated by the Farmland Mapping and Monitoring Program (FMMP) as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. The FMMP designates the entire site as "Grazing Land." Furthermore, the site is not identified as "choice agricultural land" as identified in Figure AF-2, Choice Agricultural Land in the General Plan. Therefore, the proposed project would not result in the conversion of Prime Farmland, Unique Farmland, Farmland of Statewide Importance, or Farmland of Local Importance (including land identified by the County as "choice agricultural land"), to a nonagricultural use.

Although the majority of the project site is currently zoned AE, the majority of the site is used for grazing, and the only active agricultural use onsite is a small strawberry field located north of the ponds. The varied terrain and scattered trees on the site generally prohibit the production of row or orchard crops. In addition, the site is not located within an Agricultural District as depicted in the General Plan Land Use Diagram. Agricultural Districts are created and maintained for the purposes of conserving, protecting, and encouraging the agricultural use of important agricultural lands and associated activities throughout the County; maintaining viable agricultural-based communities; and encouraging the expansion of agricultural activities and production.

The project site has a recent history of grazing activities. Per General Plan Policy 8.1.2.3, the County encourages the assignment of the Agricultural Land (AL) designation to rangelands currently used for grazing or suitable for sustained grazing of domestic livestock. The site is not designated AL. The County's Agricultural Commission also identifies Agricultural Districts within the County. The nearest Agricultural District is the Gold Hill Agricultural District, which is about 20 miles northeast of the site as shown in the General Plan.

Furthermore, the project site is located within the Community Region (within the urban limit line) and is primarily designated LDR in the General Plan, indicating that the General Plan anticipates

residential use of the land as opposed to continued grazing use. The site is surrounded by high, medium, and low-density residential developments, which does not make it suitable for long-term grazing or agricultural production. According to the General Plan, with the extension of appropriate infrastructure, the site is envisioned as an appropriate location for residential uses. Because the General Plan anticipates the development of residential uses and associated infrastructure on the site, the loss of grazing area and the small strawberry field on the project site would not result in a significant impact. Additionally, the proposed project would not convert a substantial amount of grazing land, as defined by the County Agricultural Commission, to a non-grazing use and would also not substantially reduce the viability of grazing resources in the County.

(6) Conflict with an Existing Williamson Act Contract. The project site is currently zoned AE and RE-5. The AE designation often applies to lands that are under a Williamson Act; however, the project site has not been enrolled in a Williamson Act contract since 1999. As described above, the site is currently used for grazing land, but is within the urban boundaries of El Dorado Hills, indicating the land is anticipated to be used for development as opposed to agricultural use. Therefore, development of the proposed project would not conflict with, or result in cancellation of, a Williamson Act contract.

(7) Convert Existing Forest or Timber Production Land. As previously discussed, the project site is currently zoned AE and RE-5 and is used as grazing land. The project site would be rezoned to allow for the development of a planned residential community. Although the project site is currently zoned AE, the site is not zoned for timber production, as regulated by the County's Timberland Preserve Zone (TPZ) District (Chapter 17.44 of the Zoning Ordinance).

In addition, the site is not used for timber production nor does it contain forestry or other timber resources. The site is primarily covered with grassland vegetation and scattered trees, with a concentration of trees in the northwest corner of the property. On-site trees consist largely of oak trees, which are not considered to be suitable for timber harvesting and their removal is regulated by the County. Surrounding uses include existing and planned residential subdivisions, and no timberland or other natural resource areas are located within the vicinity. Because the site is located within the General Plan's urban limit line boundaries and because no timber production or forestry lands are located within the vicinity of the site, residential uses are appropriate in this location.

As the site does not contain forest resources and is not zoned for timber harvesting or production, the proposed project would not result in the conversion of forestland zoned or land currently in timber production to a non-forestry use. Furthermore, the proposed project would not create an obstacle to the processing of timber resources within the County as none are located near the site. For these reasons, the project would not result in a significant impact related to conversion of existing trees or timber production land.

For a discussion of the El Dorado County Oak Woodland Conservation Ordinance, and how it is applicable to the proposed project, please see Section IV.G, Biological Resources.

(8) Loss of Mineral Resources. The project site is currently designated as LDR and OS on the General Plan Land Use Diagram and is within the Community Region (urban limit line) of El Dorado Hills. The site is also zoned AE and RE-5 and is not within or near a designated Mineral Resource (MR) District.

As defined in Chapter 17.46 of the Zoning Ordinance, the purpose of the MR District is to provide for the protection of lands containing mineral resources and to provide for the protection from encroachment of unrelated and incompatible land uses that may have adverse effects on the development or use of these lands. Areas within the County that are known to contain mineral resources are delineated on the General Plan Land Use Diagram and include lands identified within the Mineral Land Classification reports produced by the State Department of Conservation, California Geological Survey (per General Plan Policy 7.2.1.1).

Because the site is not used or zoned for mineral resource extraction, development of the proposed project would not result in the loss of availability of a known mineral resource of value to the region or the State or the loss of availability of a locally important mineral resource recovery site delineated on the General Plan Land Use Diagram. Therefore, the potential impact to mineral resources would be less than significant.

c. Cumulative Impacts. The proposed project would convert lands that are currently used for grazing and a small strawberry field to residential and recreational uses. However, the project site is located in an area that is intended for urban growth, given its location within the Community Region (urban limit line) of El Dorado Hills. Development of the proposed project would be consistent with the General Plan's overall vision for development in this area of the County and would not contribute to or cause unplanned growth beyond the urban boundary. In addition, as discussed above, the project would not convert important agricultural or timber-production lands or mineral resources sites to a use that would result in the loss of these resources, as none are present on the site or within the immediate vicinity. Therefore, conversion of the site to residential uses, in combination with other past, present, and reasonably probable future projects, would not result in significant cumulative land use impacts or the cumulatively significant loss of important agriculture, forestry, or mineral resources within the County. This impact, therefore, is less than significant.

B. POPULATION AND HOUSING

This section describes population and housing statistics in the unincorporated community of El Dorado Hills and El Dorado County and evaluates potential impacts that could result from implementation of the proposed project.

1. Setting

The following section utilizes data from the U.S. Census Bureau (Census), California Department of Finance, and the Sacramento Area Council of Governments (SACOG). Information from the El Dorado County General Plan Housing Element[1] is also included.

a. Population. The U.S. Census Bureau estimates that the population of the unincorporated areas of El Dorado County was 149,266 in April, 2010.[2] As shown in Table IV.B-1, between 2000 and 2010, the unincorporated County population grew 21.3 percent during that 10-year period (the overall population of the County, including incorporated areas increased by 15.8 percent). From April 2010 to January 2013, the California Department of Finance estimates that the unincorporated County population grew by about 0.72 percent, to 150,347.[3] According to 2010 Census data for all areas of California counties, El Dorado County had the 16th highest increase in overall County population between 2000 and 2010. The California Department of Finance ranks the County 29th (out of 58 counties) in population.[4]

Table IV.B-1: County Population Growth

Population	2000	2010	2013	Percent Increase (2000-2010)	Population Increase (2010-2013)
Entire County	156,299	181,058	182,286	15.8	0.68
Unincorporated County	123,080	149,266	150,347	21.3	0.72

Note: Unincorporated El Dorado County does not include the City of South Lake Tahoe or the City of Placerville.

Source: U.S. Census, 2010; California Department of Finance, 2013.

According to California Department of Finance statistics using the 2010 Census data, El Dorado County could be home to an additional 22,174 persons between 2010 and 2020 and a total of 39,463 persons between 2010 and 2025, an overall 22 percent increase.[5] With these increases, it is projected that the total County population could reach 220,384 persons by 2025.

[1] El Dorado County, 2013. *El Dorado County 2013-2021 Housing Element Update.* Adopted October 29.

[2] United States Census Bureau, 2010. Summary File 1 (STF 1) for El Dorado County, 100-Percent Data, Table DP-1.

[3] California, State of, 2013. Department of Finance. *Demographic Research Unit, Table 2: E-5 City/County Population and Housing Estimates*. Revised January 1, 2013.

[4] California, State of, 2011. Department of Finance. *Demographic Research Unit, Total Population Rank: Counties 2000 and 2010*. March 8.

[5] California, State of, 2013. Department of Finance. *Interim Projections for California and Counties: July 1, 2015 to 2050 in 5-year Increments*. January.

b. Housing. This section describes existing housing conditions in the County.

(1) Households. Households are considered to be occupied dwelling units. As noted in the Housing Element, the results of the 2010 Census report that the residents of unincorporated El Dorado County lived in 68,654 housing units, an increase of 23,126 units since 2000. Persons-per-household are determined by dividing the total number of occupied housing units by the population. The 2010 average countywide household size (persons/occupied unit) is 2.55. The number is only slightly lower in renter-occupied units, at 2.53. In the unincorporated areas only, the average household size is 2.59 persons per occupied unit.

(2) Existing Housing Stock. In 2010, the County's estimated housing stock was characterized by a majority of single-family homes (87 percent of total), and much smaller percentages of multi-family units (7.5 percent of total) and mobile homes (5.5 percent of total) and relatively high vacancy rates (20.3 percent of total).[6]

(3) Regional Housing Needs. As required by State law, the Housing Element of the General Plan discusses the County's "fair share allocation" of regional housing need by income group as projected by SACOG. SACOG's determination of the local share of regional housing needs takes into consideration the following factors: market demand for housing, employment opportunities, availability of suitable sites and public facilities, loss of existing affordable units, transportation, and special housing needs. The County General Plan Housing Element was recently updated and adopted in October 2013.[7]

The SACOG Regional Housing Needs Determination (RHND) for unincorporated El Dorado County for the period of 2013-2021 is shown in Table IV.B-2. The unincorporated County's allocation for this period is 4,428 additional new housing units. The RHND is allocated by income category: very low, low, moderate, and above moderate.

Table IV.B-2: Unincorporated El Dorado County Regional Housing Needs (Number of Units)

Income Category	Countywide Total	Percent
Very Low	1,086	25
Low	762	17
Moderate	823	19
Above Moderate	1,757	40
Total	*4,428*	*100*

Source: El Dorado, County of, 2013. *General Plan Housing Element*.

(4) General Plan Policies. The Housing Element of the General Plan includes the following housing-related policies applicable to development of the project site:

Housing Element

- Policy HO-1.2: To ensure that projected housing needs can be accommodated, the County shall maintain an adequate supply of suitable sites that are properly located based on environmental constraints, community facilities, and adequate public services.
- Policy HO-1.5: The County shall direct higher density residential development to Community Regions and Rural Centers.

[6] El Dorado County, 2013. *El Dorado County 2013-2021 Housing Element Update*. Adopted October 29.

[7] Ibid.

2. Impacts and Mitigation Measures

This section discusses potential impacts to population and housing that could result from the proposed project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate.

a. Criteria of Significance. The proposed project would result in a significant impact related to population and housing if it would:

- Induce substantial population growth in the County, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure);
- Displace substantial numbers of existing housing or people, necessitating the construction of replacement housing elsewhere; or
- Cumulatively exceed the growth projections for population or housing units in the General Plan.

b. Project Impacts. The following discussion describes the potential impacts to population and housing that would result from implementation of the proposed project.

(1) Induce Substantial Population Growth. The proposed project would generate housing-related population growth by adding 604 new market-rate residential units to the County's housing stock. The Housing Element states that the unincorporated areas of the County had an average of 2.59 persons per household. It is assumed that age-restricted units would have up to 2 persons per household.[8] Of the total units, 160 would be age-restricted and limited to residents of 55 years of age or older. Based upon an average of 2.59 persons per household, the 444 non-age-restricted units would increase the County's population by 1,150 residents and the 160 age-restricted units would generate up to 320 additional residents, for a total population increase of approximately 1,470 new residents.[9] This increase represents about 0.81 percent of the County's total estimated 2013 population (182,286) and approximately 0.98 percent of the unincorporated County's population (150,347). The estimated population generated by the project (1,470 residents) would represent approximately 0.67 percent of the County's projected 2025 population (220,384).[10] The population growth anticipated between 2013 and 2025 is expected to be 38,098; population associated with the project would represent 3.9 percent of the anticipated growth.

As discussed in Section IV.A, Land Use and Planning, the proposed project is located within the Community Region (urban limit line) of El Dorado Hills. The site is identified in the General Plan for residential development. The extension of infrastructure onto the project site, including roadways and

[8] It is assumed that age-restricted units do not have children and also have a lower trip generation rate, as shown in the Traffic Impact Analysis included in Appendix B, and per Institute of Transportation Engineers, Trip Generation, 9th Edition.

[9] Given that up to 160 residential units would be age-restricted and limited to residents of 55 years of age or older, this estimate is considered to be conservative and the actual persons-per-household for these units would likely be lower. Age restricted units typically have a lower person per household average that unrestricted single-family residences.

[10] El Dorado County, 2013. *El Dorado County 2013-2021 Housing Element Update.* Adopted October 29.

utilities that would only serve the proposed development, would not contribute to or cause additional growth to occur outside of the Community Region boundaries or elsewhere within the vicinity of the project site, as the project site is surrounded by residential development.

The proposed project would not induce substantial unanticipated population growth in the County, and the population increase would fall within the increase identified in the Housing Element. Population growth assumed with implementation of the proposed project would be considered a less-than-significant impact.

(2) Displace Existing Housing or People. The proposed project would result in the demolition of one existing vacant single-family home, retention of one existing occupied single-family home, and construction of 604 new residential units. The existing single-family home that would be demolished is currently unoccupied; therefore, demolition of this residence would not displace substantial numbers of existing housing or people, such that replacement housing would need to be constructed elsewhere. This potential impact would be considered less than significant.

(3) Cumulatively Exceed General Plan Growth Projections. As discussed above, the proposed project would add a total of 604 new housing units to the existing housing stock in El Dorado County and increase the population by 1,470 residents. The General Plan anticipates that 32,000 units would be constructed between 2000 and 2025. Roughly 14,000 units have been built since 2000.[11] Additionally, approximately 2,413 units have been approved, but have not yet been built (please see the list included in Section IV.E, Cumulative Analysis Context). When these approved but not yet constructed units are considered, the proposed project represents 3.9 percent of the remaining housing units anticipated to be built. Given that the General Plan identifies the site as a location appropriate for the development of residential uses and that the project represents a relatively small percentage of the overall number of housing units anticipated to be built over that time frame, it is not anticipated that the proposed project would cumulatively exceed the growth projections anticipated by the General Plan. Development of the proposed project, in addition to future projects currently approved or planned within the County, would not cumulatively exceed the County's General Plan growth projections and this impact would be less than significant.

[11] Purvines, Shauna, 2014. Senior Planner, El Dorado County. Personal communication with LSA Associates, Inc. January 24.

C. TRANSPORTATION AND CIRCULATION

The following section was prepared based on a Traffic Impact Analysis (TIA) for the proposed project prepared by Kimley-Horn and Associates, which is included as Appendix B. The TIA evaluates the transportation impacts that would result from the proposed project.

1. Setting

This section describes the existing transportation system in the vicinity of the proposed project. Existing roadway operations are described and an explanation of the methods used for the traffic analysis is provided. The project study area, project site, and study intersections are illustrated in Figure IV.C-1.

a. Study Scenarios. The potential effects of the proposed project on the study intersections were evaluated during the weekday AM and PM peak hours for the following scenarios:

- Scenario 1: Existing (2013) Conditions
- Scenario 2: Existing (2013) Plus Proposed Project Conditions
- Scenario 3: Existing Plus Approved Projects (2018) Conditions
- Scenario 4: Existing Plus Approved Projects (2018) Plus Proposed Project Conditions
- Scenario 5: Cumulative (2025) Conditions
- Scenario 6: Cumulative (2025) Plus Proposed Project Conditions

b. Project Area Roadways. The following are descriptions of the primary roadways in the vicinity of the project site.

- **US Route 50 (US-50)** is an east-west freeway located south of the project site. Generally, US-50 serves all of El Dorado County's major population centers and provides connections to Sacramento County to the west and the State of Nevada to the east. Primary access to the project site from US-50 is provided at the El Dorado Hills Boulevard/Latrobe Road interchange with supplemental access via the Silva Valley Parkway interchange beginning with the year 2018 analysis scenarios. Within the general project area, US-50 currently serves approximately 91,000 vehicles per day[1] (vpd) with three westbound and four eastbound travel lanes, west of El Dorado Hills Boulevard/Latrobe Road.
- **Green Valley Road** is an east-west arterial roadway that connects Placerville with western portions of El Dorado County and eastern Sacramento County, south of Folsom Lake. Through the vicinity of the project site, Green Valley Road provides one travel lane in each direction and serves approximately 11,000 vehicles per day.[2]
- **El Dorado Hills Boulevard** is a north-south arterial roadway that provides a primary connection to US-50 for western El Dorado County. Just north of US-50 this roadway carries approximately 31,700 vpd[3] with three travel lanes in each direction. North of Green Valley Road, El Dorado Hills Boulevard becomes Salmon Falls Road. At the time of the TIA analysis, the US-50 interchange with El Dorado Hills Boulevard/Latrobe Road was

[1] Caltrans Traffic and Vehicle Data Systems Unit. Website: www.dot.ca.gov/hq/traffops/saferesr/trafdata/2011all/index.html.

[2] El Dorado County Department of Transportation, 2012.

[3] Ibid.

under construction. These improvements are assumed to be completed for year 2018 and 2025 analysis scenarios.

- **Silva Valley Parkway** is a north-south collector roadway that connects Green Valley Road with Serrano Parkway and eventually US-50. Silva Valley Parkway provides one travel lane in each direction and serves approximately 6,200 vpd[4] just south of Green Valley Road. The initial phase of a new US-50 interchange with Silva Valley Parkway was assumed to be constructed prior to the year 2018 analysis scenarios, with the ultimate configuration operational prior to the year 2025 analysis scenarios and after fiscal year 2022-2023.

c. Study Intersections. Intersection operating conditions were analyzed at 26 intersections in the vicinity of the project site for the weekday AM and PM peak hours. The intersections were selected for this study in coordination with County of El Dorado staff. The following intersections were selected for analysis, and their location is shown in Figure IV.C-1 and AM and PM peak hours are identified below:

	Intersection	AM/PM Peak Hours
1.	Green Valley Road/Francisco Drive	AM: 7:15–8:15 a.m.; PM: 5:00–6:00 p.m.
2.	Green Valley Road/El Dorado Hills Boulevard/Salmon Falls Road	AM: 7:00–8:00 a.m.; PM: 5:00–6:00 p.m.
3.	Green Valley Road/Silva Valley Parkway/Allegheny Road	AM: 7:00–8:00 a.m.; PM: 5:00–6:00 p.m.
4.	Green Valley Road/Loch Way	AM: 7:45–8:45 a.m.; PM: 4:45–5:45 p.m.
5.	*Green Valley Road/Wilson Estates Connector (Future)*	–
6.	Green Valley Road/Malcolm Dixon Road	AM: 7:30–8:30 a.m.; PM: 4:45–5:45 p.m.
7.	Green Valley Road/Deer Valley Road	AM: 7:15–8:15 a.m.; PM: 4:45–5:45 p.m.
8.	*Green Valley Road/Silver Springs Parkway (Future)*	–
9.	Green Valley Road/Bass Lake Road	AM: 7:15–8:15 a.m.; PM: 4:30–5:30 p.m.
10.	Green Valley Road/Cambridge Road	AM: 7:15–8:15 a.m.; PM: 4:30–5:30 p.m.
11.	Green Valley Road/Cameron Park Drive	AM: 7:15–8:15 a.m.; PM: 4:45–5:45 p.m.
12.	El Dorado Hills Boulevard/Francisco Drive	AM: 7:45–8:45 a.m.; PM: 4:30–5:30 p.m.
13.	El Dorado Hills Boulevard/Harvard Way	AM: 7:00–8:00 a.m.; PM: 5:00–6:00 p.m.
14.	El Dorado Hills Boulevard/Serrano Parkway	AM: 7:15–8:15 a.m.; PM: 5:00–6:00 p.m.
15.	El Dorado Hills Boulevard/Saratoga Way (North)	AM: 7:30–8:30 a.m.; PM: 4:45–5:45 p.m.
16.	El Dorado Hills Boulevard/Saratoga Way (South)	AM: 7:30–8:30 a.m.; PM: 4:30–5:30 p.m.
17.	El Dorado Hills Boulevard/US-50 Westbound Ramps	AM: 7:45–8:45 a.m.; PM: 4:45–5:45 p.m.
18.	Latrobe Road/US-50 Eastbound Ramps	AM: 7:45–8:45 a.m.; PM: 4:45–5:45 p.m.
19.	*Silva Valley Parkway/US-50 Eastbound Ramps (Future)*	–
20.	*Silva Valley Parkway/US-50 Westbound Ramps (Future)*	–
21.	*Silva Valley Parkway/Country Club Drive (Future)*	–
22.	Silva Valley Parkway/Serrano Parkway	AM: 7:00–8:00 a.m.; PM: 4:45–5:45 p.m.
23.	Silva Valley Parkway/Harvard Way	AM: 7:00–8:00 a.m.; PM: 4:45–5:45 p.m.
24.	Silva Valley Parkway/Appian Way	AM: 7:00–8:00 a.m.; PM: 4:30–5:30 p.m.
25.	*Green Valley Road/Site Access Driveway (Right-in/Right-out) (Future)*	–
26.	*Green Valley Road/Site Access Driveway (Full access) (Future)*	–

Note: The above table indicates each intersection's individual AM and PM peak hours; collective AM and PM peak hours were developed using these respective peak hours, and combined represent the worst case volumes for all intersections to reflect a conservative combination of network volumes.

The intersections in italics indicate those that are anticipated to be constructed in the future, but do not currently exist.

[4] Ibid.

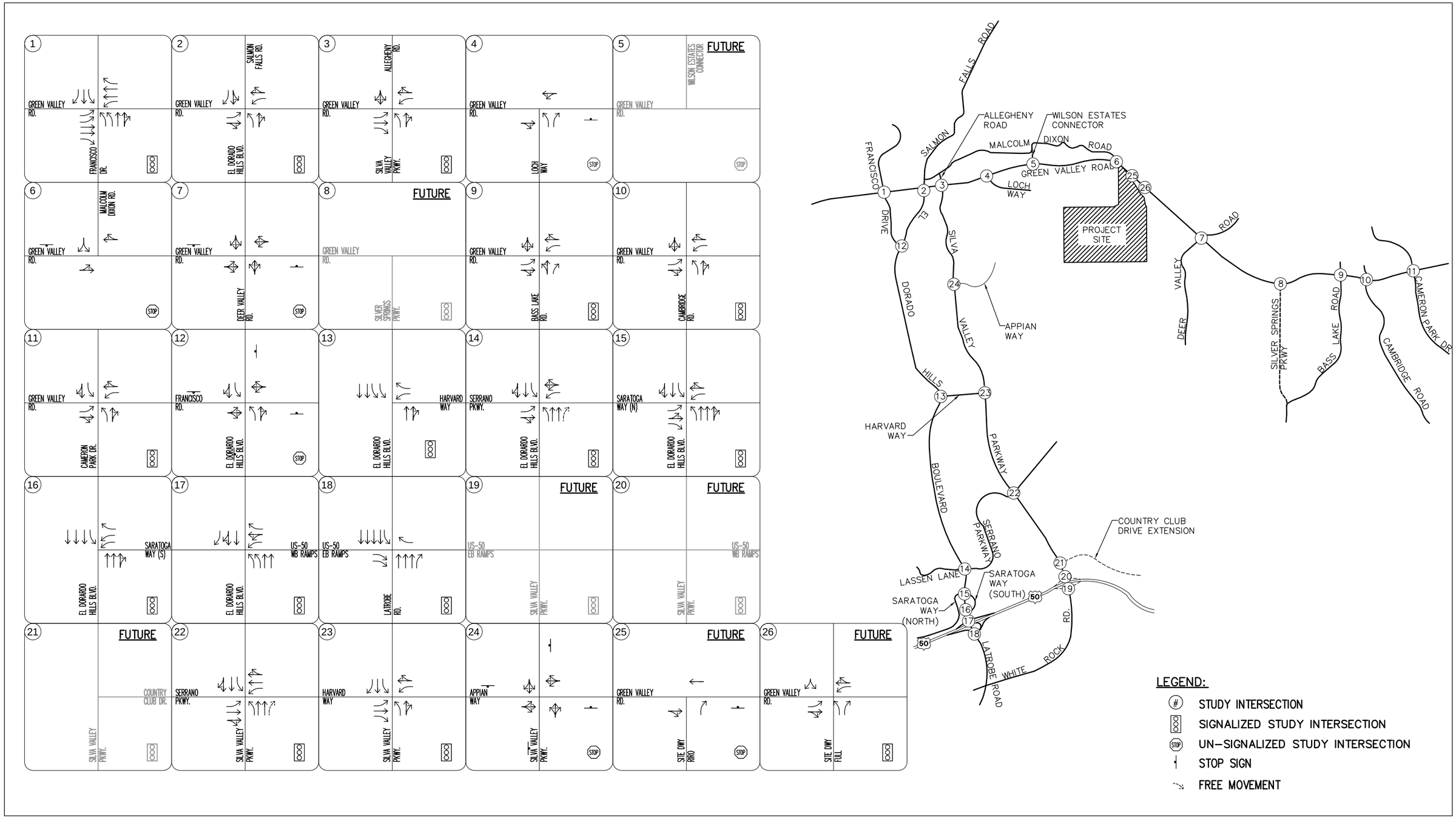

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FIGURE IV.C-1

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Dixon Ranch Residential Project EIR

Study Intersections, Traffic Control, and Lane Geometries

SOURCE: KIMLEY-HORN AND ASSOCIATES, INC., JUNE 2013.

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d. Traffic Impact Analysis Methodology. With the introduction of this revised project, a new CEQA review process was initiated and a revised NOP was circulated on December 18, 2012. The revised application was submitted March 2013 and deemed complete April 23, 2013. At that time, the County's traffic model was based on the 2004 General Plan with a cumulative horizon of 2025. Therefore, the traffic analysis performed for this EIR is based on this horizon date.[5]

Analysis of transportation facility environmental impacts is based on the concept of Level of Service (LOS). The LOS of a facility is a qualitative measure used to describe operational conditions. LOS ranges from A (best), which represents minimal delay, to F (worst), which represents heavy delay and a facility that is operating at or near its functional capacity. Levels of Service for this study were determined using methods defined in the *Highway Capacity Manual*, 2000 (HCM) and appropriate traffic analysis software.

The HCM includes procedures for analyzing two-way stop controlled (TWSC), all-way stop controlled (AWSC), and signalized intersections. The TWSC procedure defines LOS as a function of average control delay for each minor street approach movement. Conversely, the AWSC and signalized intersection procedures define LOS as a function of average control delay for the intersection as a whole. Table IV.C-1 presents intersection LOS definitions as defined in the HCM.

Table IV.C-1: Intersection Level of Service Criteria

Level of Service (LOS)	Unsignalized Average Control Delay[a] (seconds/vehicle)	Signalized Control Delay (seconds/vehicle)
A	≤ 10	≤ 10
B	> 10 – 15	> 10 – 20
C	> 15 – 25	> 20 – 35
D	> 25 – 35	> 35 – 55
E	> 35 – 50	> 55 – 80
F	> 50	> 80

[a] Applied to the worst lane/lane group(s) for TWSC.
Source: Highway Capacity Manual, 2000.

Per El Dorado County's Traffic Impact Study Protocols and Procedures (the "Protocols"), proposed development projects are required to consider their potential effects on transportation and circulation in accordance with the County's CEQA review requirements and consistent with General Plan Policies TC-Xa(5) and TC-Xb(C). The Protocols further specify that the traffic analyses "shall address both weekday AM and PM peak-hour conditions at all study intersections and ramp locations." It is important to note that the Protocols do not specifically require the evaluation of roadway segments, rather focus only on intersections.

Intersection traffic operations are widely recognized as the primary factor affecting the operations of roadway corridors. An identified intersection impact will result in an examination of adjacent roadway segments. Because of this acknowledged dynamic, the County has historically only studied intersections as part of development project traffic studies.

Roadway segment capacities and operations are evaluated at a higher level during the County-wide travel demand modeling process. The County's travel demand model analysis identifies roadway segment capacity deficiencies in the absence of the operational effect of the corridors' intersections,

[5] Spiegelberg, Dave, 2014. Senior Civil Engineer, El Dorado County Transportation Division. Written communication with LSA Associates, Inc. May 12.

which enables the County to proactively identify and program larger scale, corridor-wide Capital Improvement Program (CIP) Projects aimed at addressing these conditions.

Consistency with General Plan Land Use Designation. According to the County's Protocols:[6]

> "[A] Each traffic impact study must provide a review of a proposed project's consistency with the land use designations and zoning densities of the 2004 County General Plan to determine if the project is consistent with such designation(s) as applicable within the proposed project area…[B] If a proposed project is of a magnitude that is clearly within the amount of development which was anticipated in the traffic study conducted for the General Plan, then the General Plan's traffic analysis will serve as the basis for the cumulative traffic analysis of the project."

The proposed project is not consistent with the *2004 General Plan* land use designation and zoning density for the site (Low Density Residential).[7] Therefore, the proposed project satisfies the first criterion [A] for determining if a new cumulative 2025 analysis is required in addition to the analysis already completed for the County's *General Plan*. According to information provided by a representative of the County[8] it is necessary to re-run the County's travel demand model by adding an additional 294 single-family dwelling units[9] to the Traffic Analysis Zone (TAZ) in which the project is located to reflect the addition of the proposed project. For a more detailed description, see Cumulative (2025) Plus Proposed Project Conditions in this section.

e. Existing (2013) Conditions. Nineteen (19) new weekday AM and PM peak-period intersection turning movement traffic counts were conducted in January 2013. These counts were conducted between the hours of 6:30 a.m. and 9:30 a.m., and 3:30 p.m. and 6:30 p.m. The other seven study intersections do not exist today, and are not contemplated in this analysis scenario.

Existing (2013) peak hour turn movement volumes are presented in Figure IV.C-2, and the traffic count data sheets are provided in Appendix B. Table IV.C-3 (included in Section IV.C.2.b[4]) presents the peak hour intersection operating conditions for this analysis scenario. As shown in the table, the study intersections operate from LOS A to LOS F during the AM and PM peak hours.

f. Existing Plus Approved Projects (2018) Conditions. Two approaches were used in the development of background traffic volumes for this analysis scenario, as described below:

[6] El Dorado County, 2008. Department of Transportation. *Traffic Impact Study Protocols and Procedures*, June.

[7] El Dorado County, 2004. *General Plan Land Use Diagram*.

[8] Kittelson & Associates, Inc., 2013. Email from Chirag Safi to Kimley-Horn and Associates, Inc. February 28.

[9] See the Cumulative (2025) Plus Proposed Project Conditions discussion for details pertaining to the translation of age restricted units to traditional single family dwelling units.

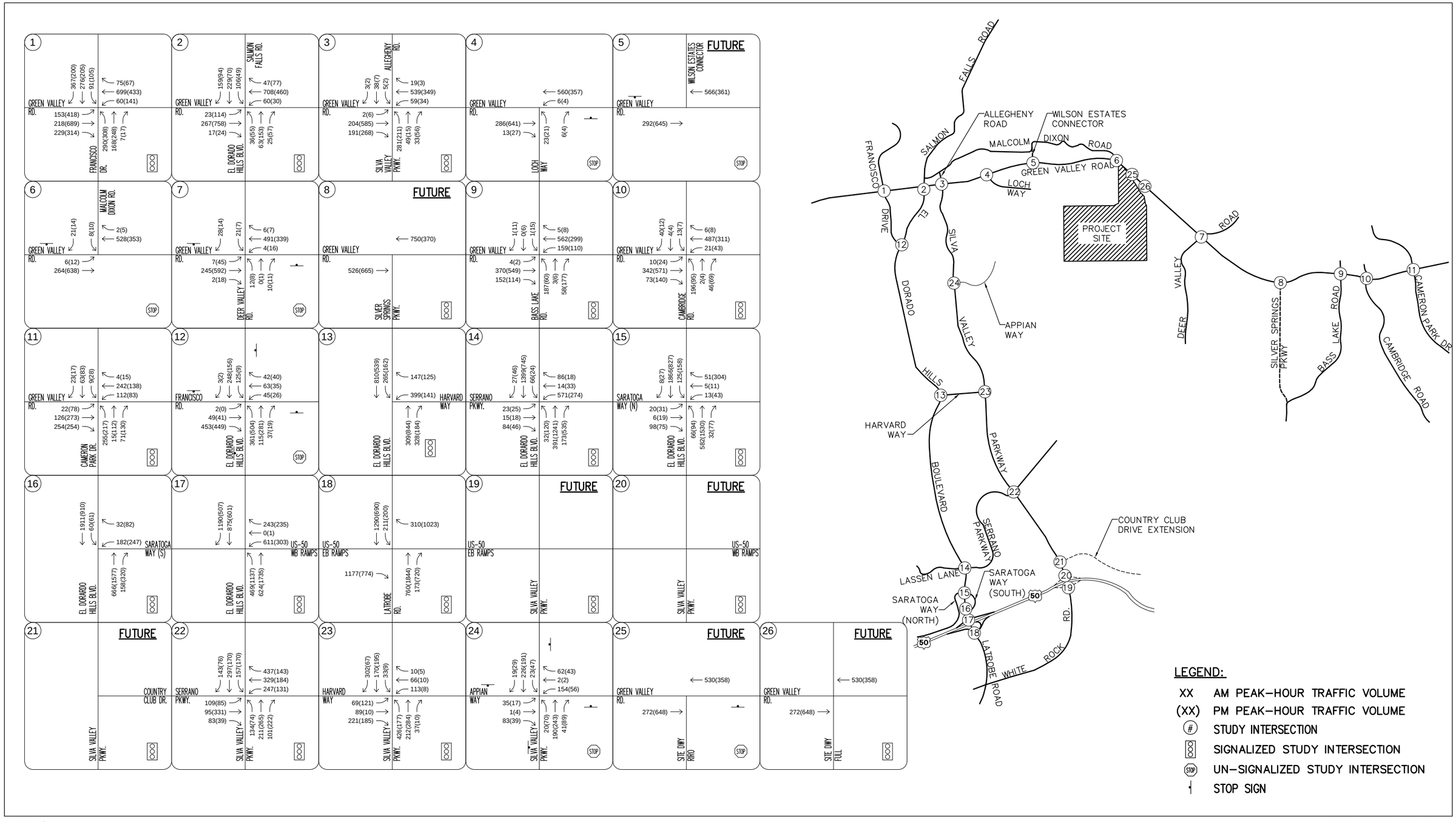

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FIGURE IV.C-2

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Dixon Ranch Residential Project EIR

Existing (2013) Peak-Hour Traffic Volumes

SOURCE: KIMLEY-HORN AND ASSOCIATES, INC., JUNE 2013.

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- For the 20 study intersections that were not evaluated in the 2010 traffic study for the US-50 interchange with Silva Valley Parkway,[10] as required by the County, two conditions were evaluated to determine the worst case approximation of near-term study area roadway traffic volumes. Traffic associated with approved projects in the vicinity of the proposed project were combined and added to the Existing (2013) traffic conditions. A full inventory of these projects can be found in Appendix B.

  Next, five years of projected growth (as derived from the County's travel demand model output) was applied to the Existing (2013) traffic conditions. For this second condition, peak hour traffic volumes for the study area roadway segments were obtained from a representative of the County for the years 1998 and 2025.[11] Using the 1998 and 2025 model data, percent annual peak growth rates were determined for each roadway segment direction and were then extended to five-year growth rates.

  The study intersections' Existing (2013) Conditions peak hour traffic volumes were then increased by these five-year growth rates (by direction) to obtain forecasted (year 2018) traffic conditions. These two volume conditions were compared and for each intersection and each time period (AM peak hour and PM peak hour) the worst case traffic conditions were utilized. Details regarding the comparison of year 2018 traffic conditions are presented in Appendix B.
- Second, as directed by a representative of the County,[12] for the 6 study intersections that were evaluated in the 2010 traffic study for the US-50 interchange with Silva Valley Parkway,[13] year 2018 traffic volumes were developed by "back-casting" 2 percent per year from 2020 conditions.

For all study intersections, traffic volumes were balanced as deemed appropriate based on the presence of intermediate driveways and/or cross-streets.

Figure IV.C-3 indicates lane configurations assumed to be constructed for Existing Plus Approved Projects (2018) and Cumulative (2025) Conditions. As specified by a representative of the County,[14] the following capital improvement projects are anticipated to be completed at the time of this analysis scenario:

- US-50 HOV Lanes Phase 0 (El Dorado Hills Interchange) (CIP #53124)
- US-50/Silva Valley Parkway Interchange Phase 1 (CIP #71328)
- Eastbound Right-Turn Lane on Francisco Drive at El Dorado Hills Boulevard (CIP #71358)
- Left-turn pockets on Green Valley Road at Deer Valley Road West (CIP #76114)

[10] Dowling Associates, Inc., 2010. *Final Traffic Operations Study for: US-50 Silva Valley Interchange*. July 22.

[11] Ibid.

[12] Kittelson & Associates, Inc., 2012. Memorandum from Chirag Safi to Eileen Crawford and Natalie Porter, El Dorado County DOT. November 15.

[13] Dowling Associates, Inc., 2010. *Final Traffic Operations Study for: US-50 Silva Valley Interchange*. July 22.

[14] Kittelson & Associates, Inc., 2012. Memorandum from Chirag Safi to Eileen Crawford and Natalie Porter, El Dorado County DOT. November 15.

Table IV.C-5 (included in Section IV.C.2.b[5]) provides a summary of the intersection analysis and Figure IV.C-4 provides the AM and PM traffic volumes for this analysis scenario. As indicated in Table IV.C-5, the study intersections operate from LOS A to LOS F during the AM and PM peak hours. The analysis worksheets for this scenario are provided in Appendix B.

g. Cumulative (2025) Conditions. Two approaches were used in the development of background traffic volumes for this analysis scenario, as described below:

- First, for the 20 study intersections that were not evaluated in the 2010 traffic study for the US-50 interchange with Silva Valley Parkway,[15] a straight-line growth rate was calculated based on existing (1998) and 2025 model volumes. This growth rate was then applied to year 2013 volumes to approximate Cumulative (2025) Conditions for these intersections.
- Second, for the 6 intersections that are included in the 2010 traffic study for the US-50 interchange with Silva Valley Parkway,[16] year 2025 traffic volumes were developed by interpolating between year 2020 and year 2030 conditions.

For all study intersections, traffic volumes were balanced as deemed appropriate based on the presence of intermediate driveways and/or cross-streets. Furthermore, in the cases where the Cumulative (2025) Conditions traffic volumes were forecasted to be less than the Existing Plus Approved Projects (2018) volumes, the 2018 volumes were conservatively utilized.

Table IV.C-6 (included in Section IV.C.2.b[6]) provides a summary of the intersection analysis and Figure IV.C-5 provides the AM and PM traffic volumes for this analysis scenario. As indicated in Table IV.C-6, the study intersections operate from LOS A to LOS F during the AM and PM peak hours. The analysis worksheets for this scenario are provided in Appendix B.

h. Capital Improvement Program. General Plan Policy TC-Xb, and General Plan Implementation Measures TC-A and TC-B require the Transportation Division of the County to submit an updated Capital Improvement Program (CIP) for the West Slope Road/Bridge Program annually to the El Dorado County Board of Supervisors for adoption. The County is required to prepare and adopt a priority list of road and highway improvements for the CIP based on a horizon of ten years, pursuant to implementation of Measure TC-A, and to update the CIP every year, or more frequently as recommended by the responsible divisions. Additionally, the CIP shall be coordinated with the Five-Year Major Review of the General Plan and shall be included in the annual General Plan review. Policy TC-Xb requires the County to "at least every five years, prepare a CIP specifying expenditures for roadway improvements within the next 20 years. Each plan shall contain identification of funding sources sufficient to develop the improvements identified."

[15] Dowling Associates, Inc., 2010. *Final Traffic Operations Study for: US-50 Silva Valley Interchange*. July 22.

[16] Ibid.

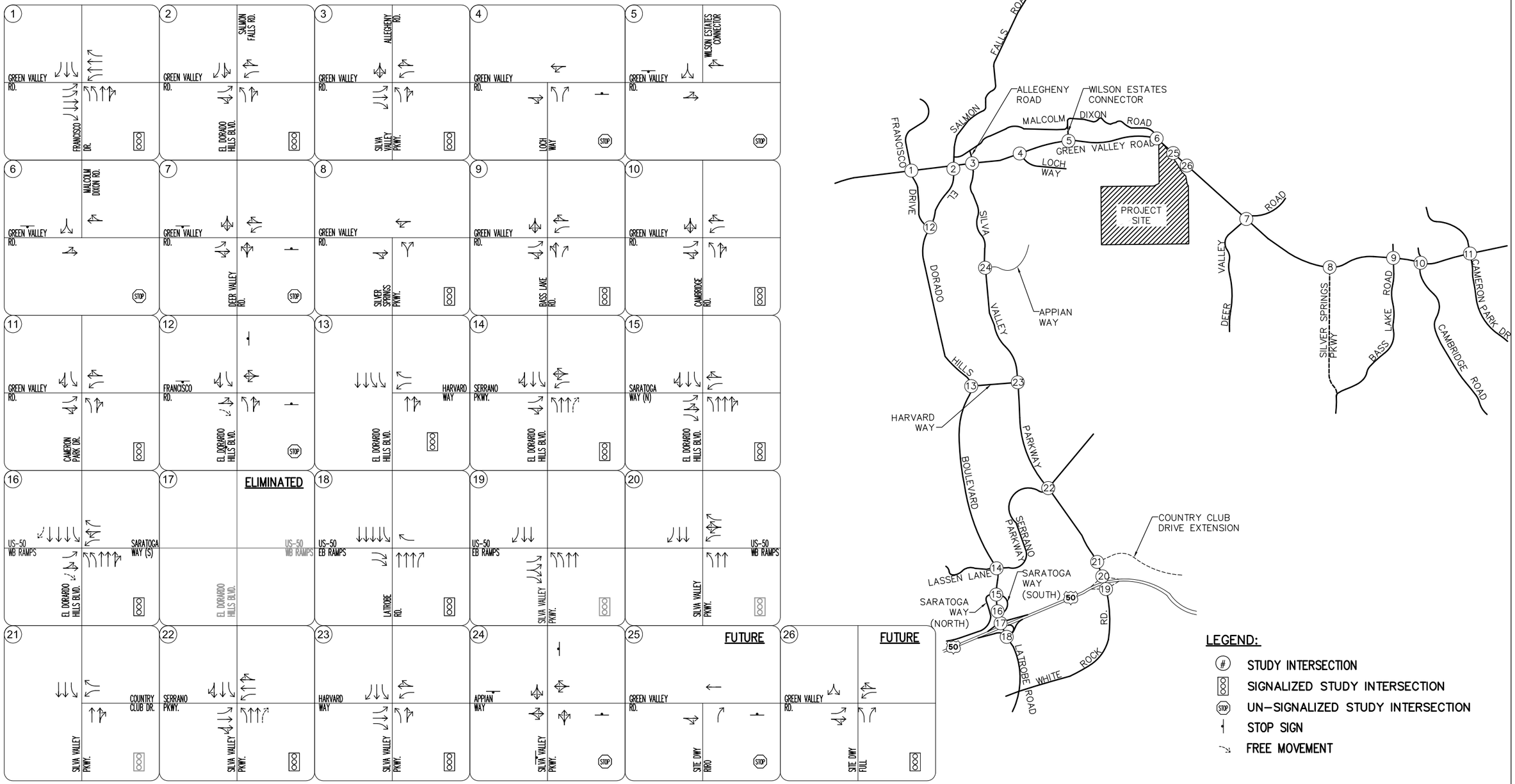

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FIGURE IV.C-3

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Dixon Ranch Residential Project EIR

Existing Plus Approved Projects (2018) and Cumulative (2025) Intersection Configurations

SOURCE: KIMLEY-HORN AND ASSOCIATES, INC., JUNE 2013.

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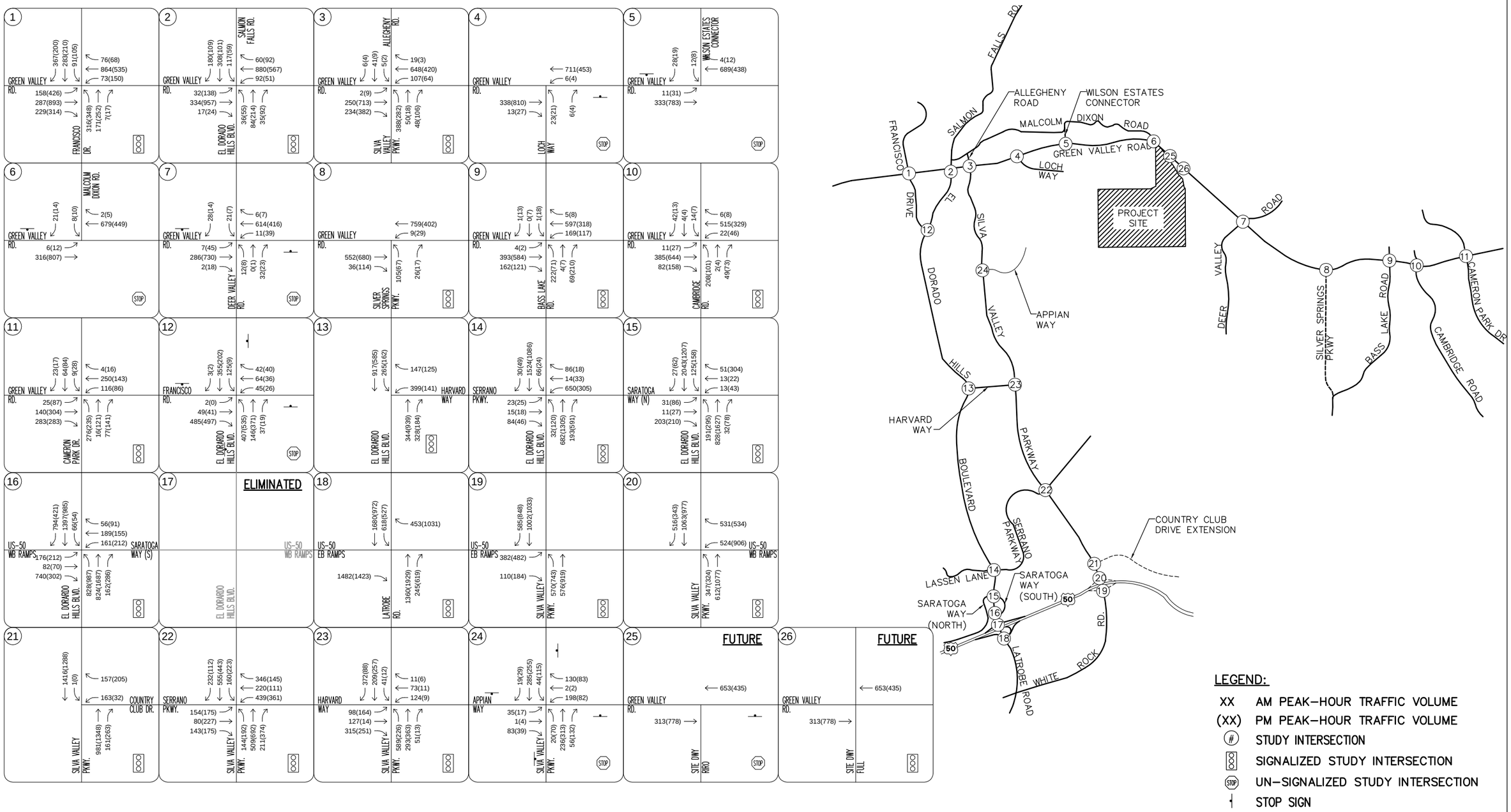

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FIGURE IV.C-4

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Dixon Ranch Residential Project EIR

Existing Plus Approved Projects (2018) Peak-Hour Traffic Volumes

SOURCE: KIMLEY-HORN AND ASSOCIATES, INC., JUNE 2013.

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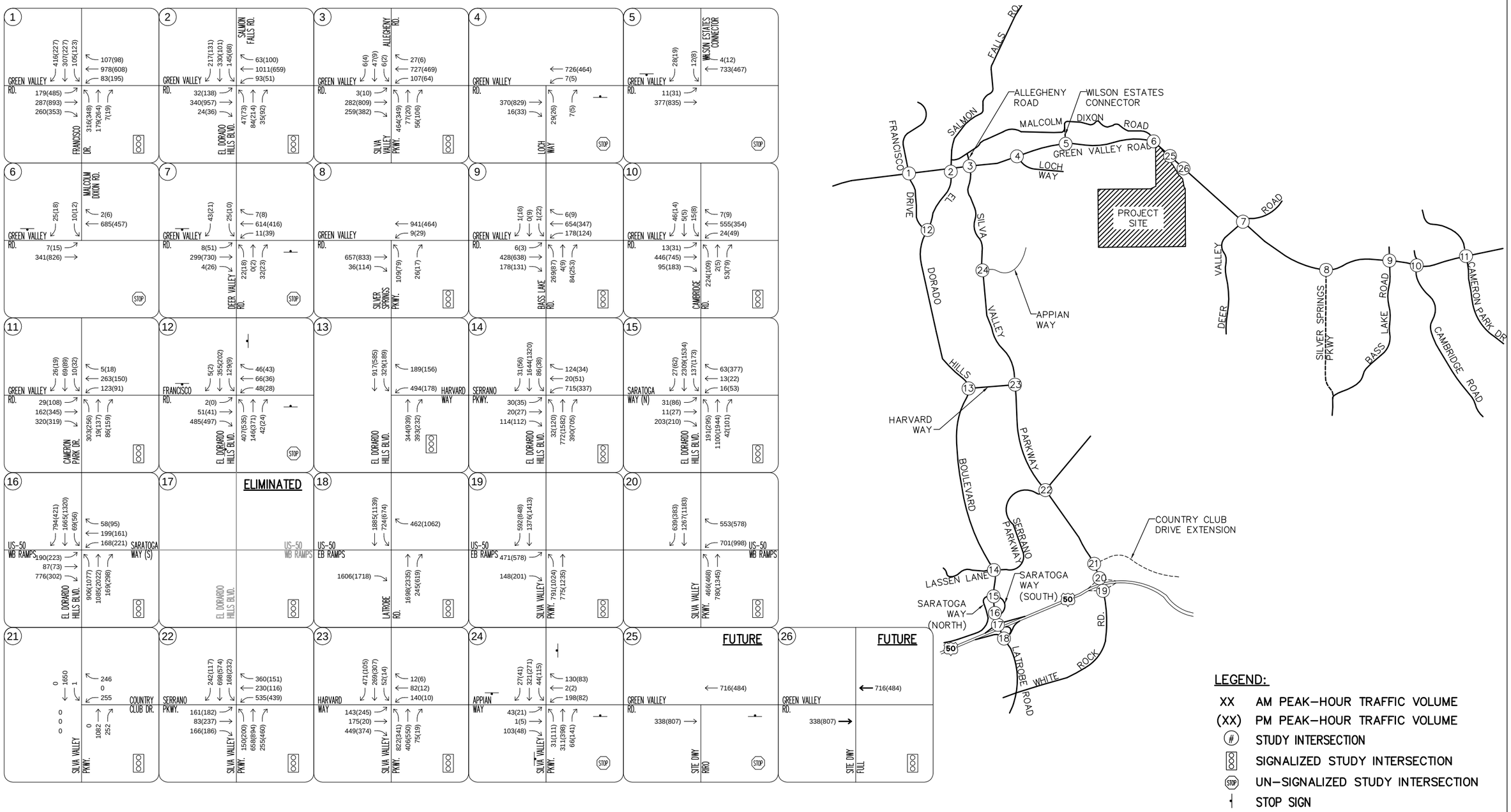

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FIGURE IV.C-5

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Dixon Ranch Residential Project EIR

Cumulative (2025) Peak-Hour Traffic Volumes

SOURCE: KIMLEY-HORN AND ASSOCIATES, INC., JUNE 2013.

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The CIP serves as a planning and implementation tool for the development, construction, rehabilitation and maintenance of the County's infrastructure. Capital improvements are projects that provide tangible long-term improvements or additions of a fixed or permanent nature, have value and can be depreciated. The CIP process includes identifying, prioritizing and developing funding for needed projects. The CIP includes ongoing projects started in previous years and new projects starting in the current fiscal year.

The primary source of funding for CIP projects is Traffic Impact Mitigation (TIM) fees collected at the time of issuance of building permits for new development. In order to ensure that adequate funding is available to ensure that CIP projects may be constructed in accordance with the schedule in the adopted CIP, the TIM fees are reviewed at the time of the annual and five year updates of the CIP discussed above. The TIM fees are adjusted as necessary to provide the level of funding to ensure that funding will be available to maintain the schedule of construction provided in the CIP. Through careful monitoring and implementation of the CIP and TIM Fee programs there is a high level of certainty that projects in the CIP will be constructed, making reliance on the implementation of CIP projects as mitigation for forecasted impacts reasonable.

2. Impacts and Mitigation Measures

This section discusses potential impacts to transportation and circulation that could result from the implementation of the proposed project. The section begins with the significance criteria, which establishes the thresholds and regulatory setting to determine whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, as appropriate. The project would have a significant impact on the environment if it meets or exceeds the thresholds of significance detailed below.

a. Significance Criteria. The following describes the significance criteria used to evaluate potential impacts associated with the proposed project.

(1) El Dorado County Criteria. Impacts for intersections are created when traffic from the proposed project forces the LOS to fall below a specific threshold. The County's standards[17] specify the following:

- "Level of Service (LOS) for County-maintained roads and State highways within the unincorporated areas of the County shall not be worse than *LOS E in the Community Regions* or *LOS D in the Rural Centers and Rural Regions*..." (El Dorado County General Plan Policy TC-Xd) The majority of the study facilities are located within the El Dorado Hills Community Region.
- "If a project causes the peak hour level of service…on a County road or State highway that would otherwise meet the County standards (without the project) to exceed the [given] values, then the impact shall be considered significant."
- "If any county road or state highway fails to meet the [given] standards for peak hour level of service…under existing conditions, and the project will 'significantly worsen' conditions on the road or highway, then the impact shall be considered significant." According to

[17] El Dorado County, 2008. Department of Transportation. *Traffic Impact Study Protocols and Procedures*. June.

General Plan Policy TC- Xe,[18] 'significantly worsen' is defined as "a 2 percent increase in traffic during the a.m. peak hour, p.m. peak hour, or daily, or the addition of 100 or more daily trips, or the addition of 10 or more trips during the a.m. peak hour or the p.m. peak hour."

(2) California Department of Transportation Significance Criteria. The Caltrans District 3 standard of significance was applied to intersections at the El Dorado Hills Boulevard and Silva Valley Parkway interchanges. The following LOS requirement was used for Caltrans facilities:

- "The District 3 standard for average delay at signalized intersections, in most areas, is LOS D on an hourly basis, or LOS E for the peak 15 minutes. For all-way stop intersections and roundabouts, this standard should be used for each approach… For signals in high speed areas, the standard is LOS C on an hourly basis, or LOS D for the peak 15 minutes."[19]

The freeway ramps are not located in high speed areas, therefore, the *LOS E* threshold for the peak 15 minutes is applied to Caltrans facilities for the purposes of this analysis.

b. Project Traffic Impact Analysis. This section provides a description of trip generation and distribution associated with the proposed project and evaluates traffic operations at the 26 study intersections in the vicinity of the project site under the following conditions:

- Scenario 2: Existing (2013) Plus Proposed Project Conditions
- Scenario 4: Existing Plus Approved Projects (2018) Plus Proposed Project Conditions
- Scenario 6: Cumulative (2025) Plus Proposed Project Conditions

(1) Project Land Use. The project site is proposed to be developed with 444 single-family detached dwelling units, 160 age-restricted single-family detached units, and a 3.5-acre soccer park. The existing residence on the site will remain. Primary access to the project will be provided via two driveways along Green Valley Road, one right-in/right-out, and one full access. All other access points are proposed to be for emergency use only.

(2) Project Trip Generation. The number of trips anticipated to be generated by the proposed project was derived using data included in Trip Generation Manual, 9th Edition, published by the Institute of Transportation Engineers (ITE). The anticipated trip generation characteristics for the proposed project are depicted in Table IV.C-2.

As shown in Table IV.C-2, the proposed project is estimated to generate 4,931 daily trips, with 379 trips occurring during the AM peak hour, and 484 trips occurring during the PM peak hour.

[18] El Dorado County, 2004. *General Plan, Transportation and Circulation Element*. July.

[19] Caltrans, 2008. Email from Teresa Limon to Jennifer Maxwell, El Dorado County DOT, September 3.

Table IV.C-2: Proposed Project Trip Generation

Land Use (ITE Code)	Size (units/ #fields)	Daily Trips	AM Peak Hour					PM Peak Hour				
			Total Trips	In		Out		Total Trips	In		Out	
				%	Trips	%	Trips		%	Trips	%	Trips
Single-Family Housing-Detached (210)	444	4,139	321	25%	80	75%	241	402	63%	253	37%	149
Senior Adult Housing-Detached (251)	160	720	57	35%	20	65%	37	64	61%	39	39%	25
Soccer Complex (488)	1	72	1	57%	1	43%	0	18	67%	12	33%	6
Net New External Trips		**4,931**	**379**		**101**		**278**	**484**		**304**		**180**

Source: Trip Generation Manual, 9th Edition, ITE.

(3) Proposed Project Trip Distribution. The distribution of project traffic was based on information approved and provided by a representative of the County.[20] The project trip distribution percentages for all analysis scenarios are illustrated in Figure IV.C-6. The resulting AM and PM peak hour traffic volumes attributed to the proposed project are illustrated in Figure IV.C-7 and Figure IV.C-8.

(4) Funding for Transportation Projects. The El Dorado County General Plan contains concurrency policies that preclude certain development from proceeding until needed roadway improvements have been made or financed. Policy TC-Xf of the General Plan provides:

> *At the time of approval of a tentative map for a single family residential subdivision of five or more parcels that worsens (defined as a project that triggers Policy TC-Xe[A] or [B] or [C]) traffic on the County road system, the County shall do one of the following: (1) condition the project to construct all road improvements necessary to maintain or attain Level of Service standards detailed in this Transportation and Circulation Element based on existing traffic plus traffic generated from the development plus forecasted traffic growth at 10-years from project submittal; or (2) ensure the commencement of construction of the necessary road improvements are included in the County's 10 year Capital Improvement Program (CIP).*

This policy thus provides two ways for a single-family residential project that worsens traffic to mitigate its impacts. First, the County can condition the project to construct all road improvements necessary to maintain or attain the specified level of service standards. Second, the County can ensure that construction of the necessary road improvements is in the 10-year CIP. In adopting Resolution 194-2008 authorizing the current Policy TC-Xf, the County recognized that allowing a project to rely on the 10-year CIP created the potential for short-term increases in traffic (since, theoretically, the residential project could be completed in Year 1, but the road improvements might not be constructed until Year 10). It was determined, however, that any such impacts would be offset by the ability to use additional financial resources to pay for necessary projects and by policies requiring more frequent CIP review.[21]

[20] Kittelson & Associates, Inc., 2013. Email from Chirag Safi. February 19.

[21] El Dorado County, 2014. *El Dorado County Targeted General Plan Amendment/Zoning Ordinance Update Draft Program EIR, March 2014*, page 3.9-11 through 3.9-12. Website: www.edcgov.us/Planning, April 17.

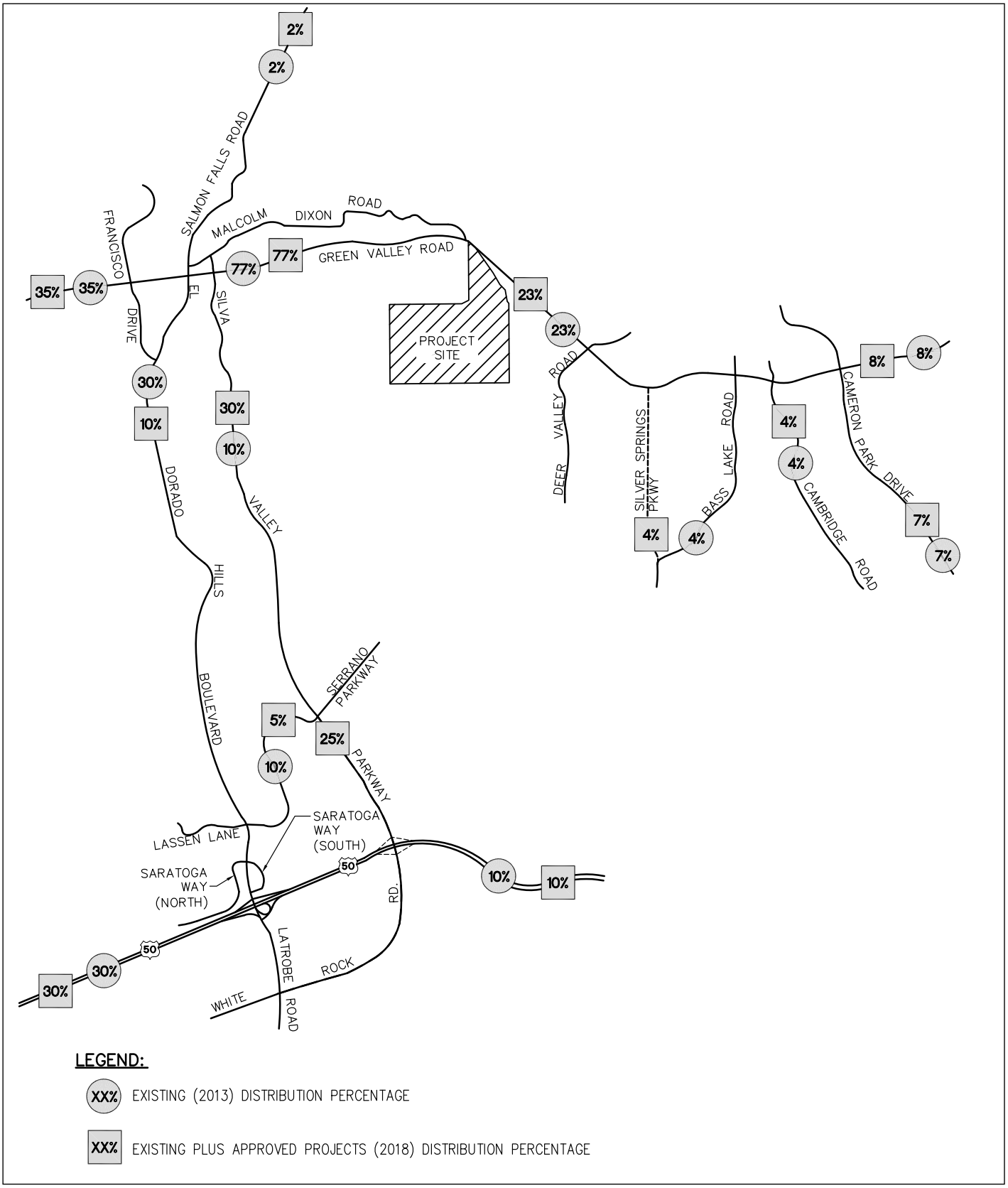

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FIGURE IV.C-6

Dixon Ranch Residential Project EIR

Proposed Project Trip Distribution

SOURCE: KIMLEY-HORN AND ASSOCIATES, INC., JUNE 2013.

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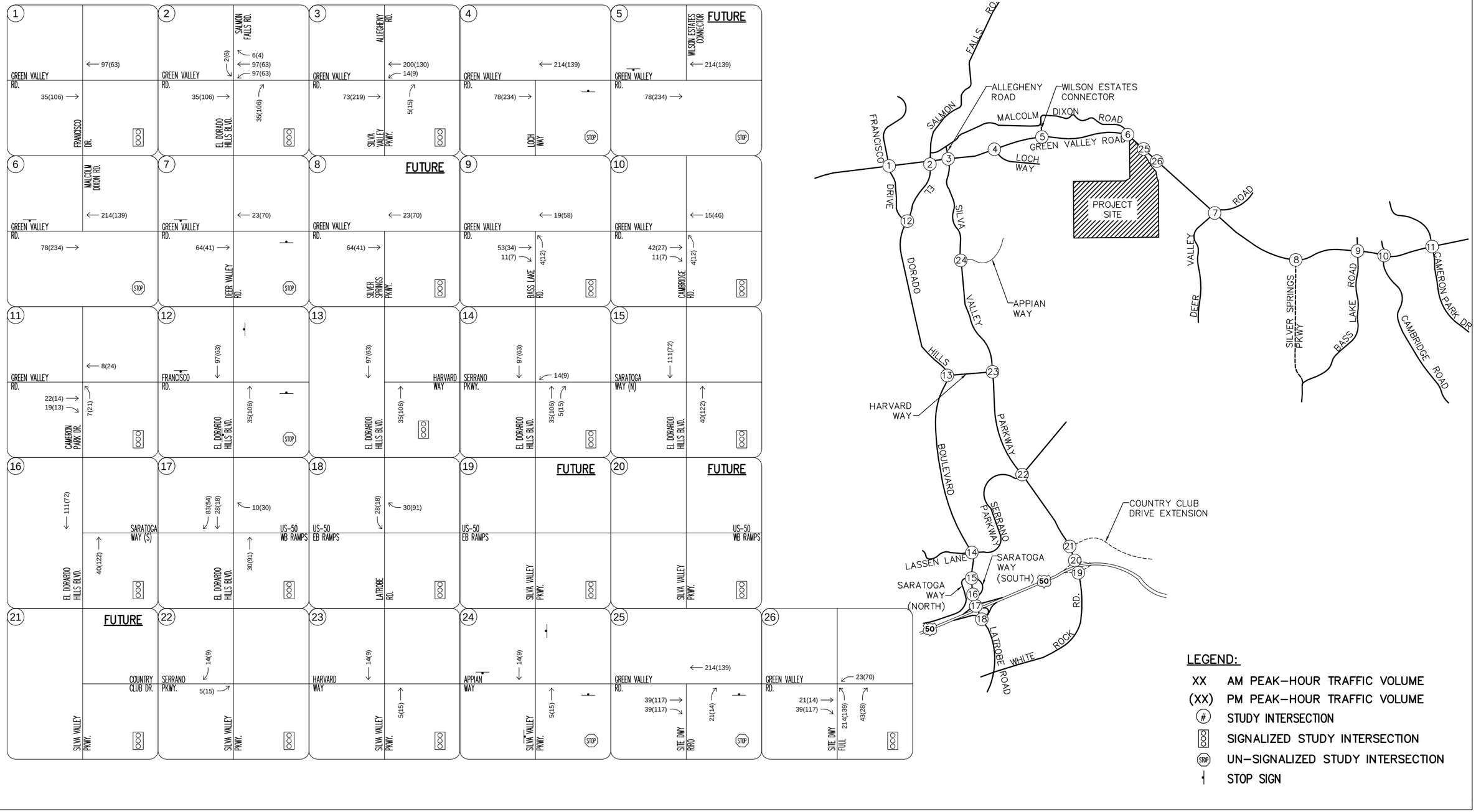

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FIGURE IV.C-7

NOT TO SCALE

SOURCE: KIMLEY-HORN AND ASSOCIATES, INC., JUNE 2013.

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Dixon Ranch Residential Project EIR

Proposed Project Trip Assignment (Existing (2013))

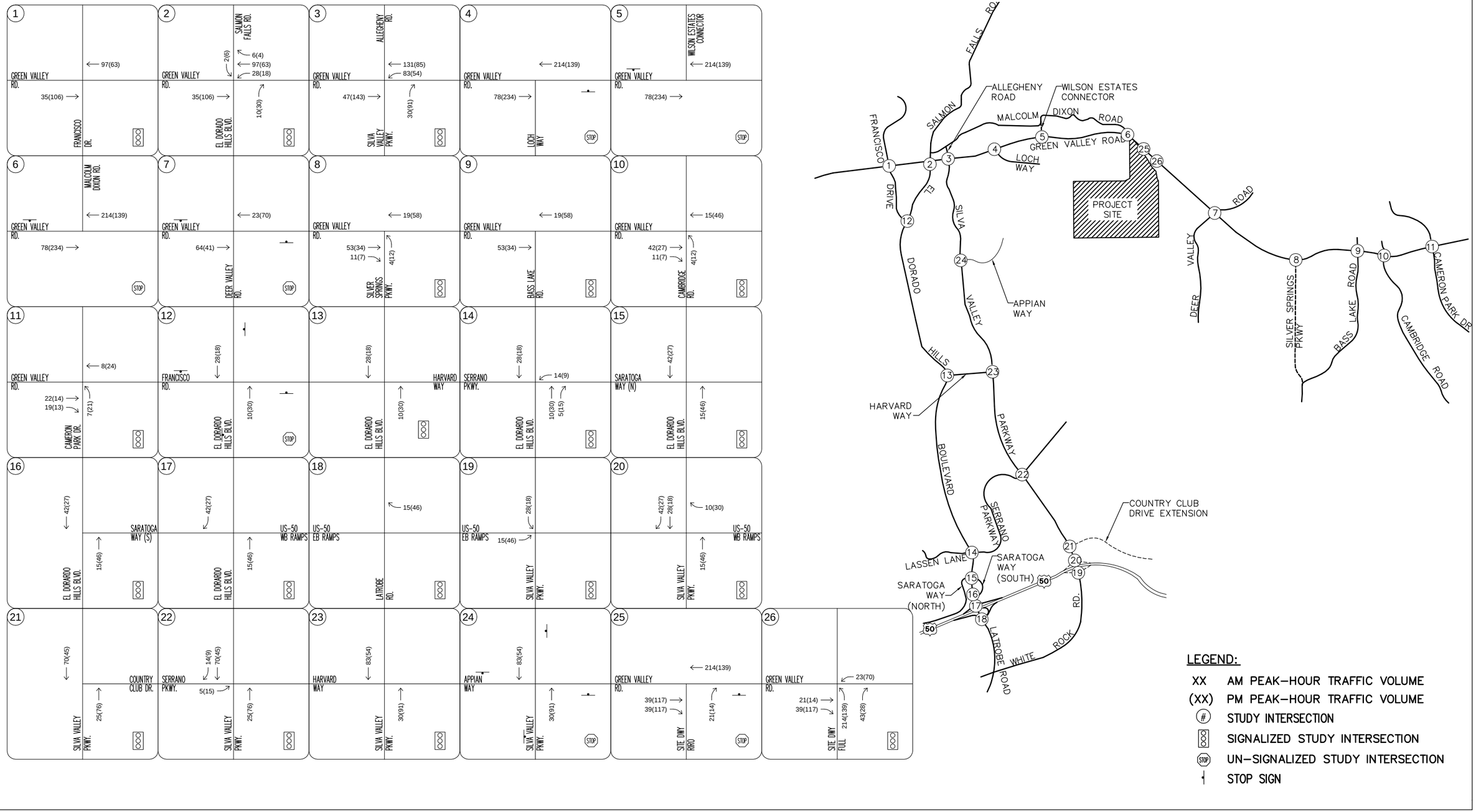

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FIGURE IV.C-8

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Dixon Ranch Residential Project EIR

Proposed Project Trip Assignment (Existing Plus Approved Projects (2018))

SOURCE: KIMLEY-HORN AND ASSOCIATES, INC., JUNE 2013.

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Consistent with Policy TC-Xf, for impacts of the Dixon Ranch project implicating the General Plan's concurrency requirements in the Existing Plus Proposed Project analysis, the Existing Plus Approved Projects (2018) Plus Proposed Project, and the Cumulative (2025) Plus Proposed Project analysis, the project is required by the County to either construct the identified improvements or, if the identified improvement is included in the County's 10-year CIP to begin construction, pay the County's traffic impact mitigation (TIM) fees. In either case, the project would be consistent with Policy TC-Xf. Payment of the TIM fees is considered to satisfy the project's proportionate fair share obligations for the required improvements. However, because of the possibility of interim impacts from the time the project is constructed to the time the transportation improvements are constructed, from a CEQA perspective, traffic operational impacts for which the project's mitigation measures allow the option of paying the TIM fee are considered significant and unavoidable until the identified improvement is constructed, at which point the impact would become less than significant.

If the project applicant opts to construct an identified improvement in advance of the CIP, the applicant may be entitled to reimbursement of any funds in excess of the project's fair share of such improvements. Furthermore, as allowed under State Law, the County and project may establish an Area of Benefit for improvements excluded from the County's TIM Fee Program, to equitably distribute costs of such improvements on a proportionate fair share basis. All public improvements are subject to review and approval by the County, and will be implemented through an encroachment permit or Road Improvement Agreement as determined by the County.

Finally, it should be noted that buildout of the project and the associated impacts on traffic operations will be dictated by market demands and could take several years. The traffic impact study prepared for this Draft EIR used the best information available to estimate the project's traffic in combination with existing, existing plus approved projects (2018), and cumulative (2025) conditions. It is possible that by the time future construction of the project occurs, however, that certain mitigation measures set forth in this Draft EIR may not be appropriate or necessary in light of completed construction, alternative funding program(s), obligations of another project to construct the identified improvements, or failure of other development projects to move forward to construction, resulting in less traffic than anticipated in the traffic impact study. As such, the project applicant may request an updated traffic analysis in conjunction with the review of a final map, tentative map, site plan review, or building permit application. The applicant shall be responsible for funding all costs associated with the preparation of the updated traffic analysis. Based on the supplemental traffic analysis provided, and at the discretion of the County, the timing of the improvements may be modified.

(5) Existing (2013) Plus Proposed Project Conditions. Peak hour traffic associated with the proposed project was added to the Existing (2013) Conditions traffic volumes, and levels of service were determined at the study intersections. Table IV.C-3 provides a summary of the intersection analysis and Figure IV.C-9 provides the AM and PM peak hour traffic volumes at the study intersections for this analysis scenario.

As indicated in Table IV.C-3, the study intersections operate from LOS A to LOS F with the addition of project traffic during the AM and PM peak hours. The analysis worksheets for this scenario are provided in Appendix B.

Table IV.C-3: Existing (2013) and Existing (2013) Plus Proposed Project Intersection Levels of Service

#	Intersection	Analysis Scenario[a]	Traffic Control	AM Peak Hour Delay (sec)	AM Peak Hour LOS	PM Peak Hour Delay (sec)	PM Peak Hour LOS
1	Green Valley Rd/ Francisco Dr	Existing	Signal	29.5	C	52.6	D
		Existing + PP		30.9	C	53.1	D
2	Green Valley Rd/El Dorado Hills Blvd/Salmon Falls Rd	Existing	Signal	63.8	E	43.4	D
		Existing + PP		**87.7**	**F**	77.8	E
3	Green Valley Rd/Silva Valley Pkwy/Allegheny Rd	Existing	Signal	31.5	C	19.0	B
		Existing + PP		37.3	D	22.7	C
4	Green Valley Rd/ Loch Wy	Existing	TWSC[b]	19.2 (NBL)	C	24.3 (NBL)	C
		Existing + PP		28.9 (NBL)	D	44.6 (NBL)	E
5	Green Valley Rd/ Wilson Estates Connector	Existing	*Not Studied in These Analysis Scenarios*[c]				
		Existing + PP					
6	Green Valley Rd/Malcolm Dixon Rd	Existing	TWSC[b]	14.3 (SB)	B	16.0 (SB)	C
		Existing + PP		19.2 (SB)	C	23.9 (SB)	C
7	Green Valley Road/ Deer Valley Rd	Existing	TWSC[b]	17.1 (SB)	C	21.9 (SB)	C
		Existing + PP		18.8 (SB)	C	25.3 (SB)	D
8	Green Valley Rd/ Silver Springs Pkwy	Existing	*Not Studied in These Analysis Scenarios*[c]				
		Existing + PP					
9	Green Valley Rd/ Bass Lake Rd	Existing	Signal	36.7	D	21.1	C
		Existing + PP		47.4	D	22.2	C
10	Green Valley Rd/ Cambridge Rd	Existing	Signal	22.5	C	20.4	C
		Existing + PP		24.0	C	21.3	C
11	Green Valley Rd/ Cameron Park Dr	Existing	Signal	32.4	C	30.4	C
		Existing + PP		36.8	D	32.6	C
12	El Dorado Hills Blvd/ Francisco Dr	Existing	AWSC	**87.5**	**F**	**68.9**	**F**
		Existing + PP		**110.7**	**F**	**78.5**	**F**
13	El Dorado Hills Blvd/ Harvard Wy	Existing	Signal	16.0	B	10.5	B
		Existing + PP		16.4	B	10.8	B
14	El Dorado Hills Blvd/ Serrano Pkwy	Existing	Signal	41.9	D	16.1	B
		Existing + PP		45.7	D	15.9	B
15	El Dorado Hills Blvd/ Saratoga Way (North)	Existing	Signal	14.5	B	20.2	C
		Existing + PP		14.4	B	20.2	C
16	El Dorado Hills Blvd/ Saratoga Way (South)	Existing	Signal	5.7	A	15.8	B
		Existing + PP		5.6	A	15.4	B
17	El Dorado Hills Blvd/ US-50 WB Ramps	Existing	Signal	44.6	D	36.5	D
		Existing + PP		51.8	D	44.6	D
18	Latrobe Rd/US-50 EB Ramps	Existing	Signal	12.4	B	11.1	B
		Existing + PP		12.4	B	11.2	B
19	Silva Valley Pkwy/ US-50 EB Ramps	Existing	*Not Studied in These Analysis Scenarios*[c]				
		Existing + PP					
20	Silva Valley Pkwy/ US-50 WB Ramps	Existing					
		Existing + PP					
21	Silva Valley Pkwy/ Country Club Dr	Existing					
		Existing + PP					
22	Silva Valley Pkwy/ Serrano Pkwy	Existing	Signal	38.8	D	35.0	D
		Existing + PP		39.0	D	36.4	D
23	Silva Valley Pkwy/ Harvard Wy	Existing	Signal	30.4	C	15.1	B
		Existing + PP		30.7	C	15.1	B
24	Silva Valley Pkwy/ Appian Wy	Existing	AWSC	22.5	C	13.6	B
		Existing + PP		24.7	C	14.3	B
25	Green Valley Rd/Site Access Driveway (Right-in/Right-out)	Existing	TWSC[b]	*Plus Project Scenarios Only*			
		Existing + PP		10.4 (NBR)	B	16.1 (NBR)	C
26	Green Valley Rd/ Site Access Driveway	Existing	Signal	*Plus Project Scenarios Only*			
		Existing + PP		8.5	A	7.9	A

[a] Existing = Existing (2013); Existing + PP = Existing (2013) Plus Proposed Project
[b] Control delay for worst minor approach (worst minor movement) for two-way stop controlled intersections.
[c] These intersections were not studied for the Existing (2013) scenarios because they do not currently exist.
TWSC = two-way stop controlled; AWSC = all-way stop controlled
NBL = northbound left-turn; NBR = northbound right-turn; SB = southbound
Bold = Substandard per County
Source: Kimley-Horn and Associates, 2013.

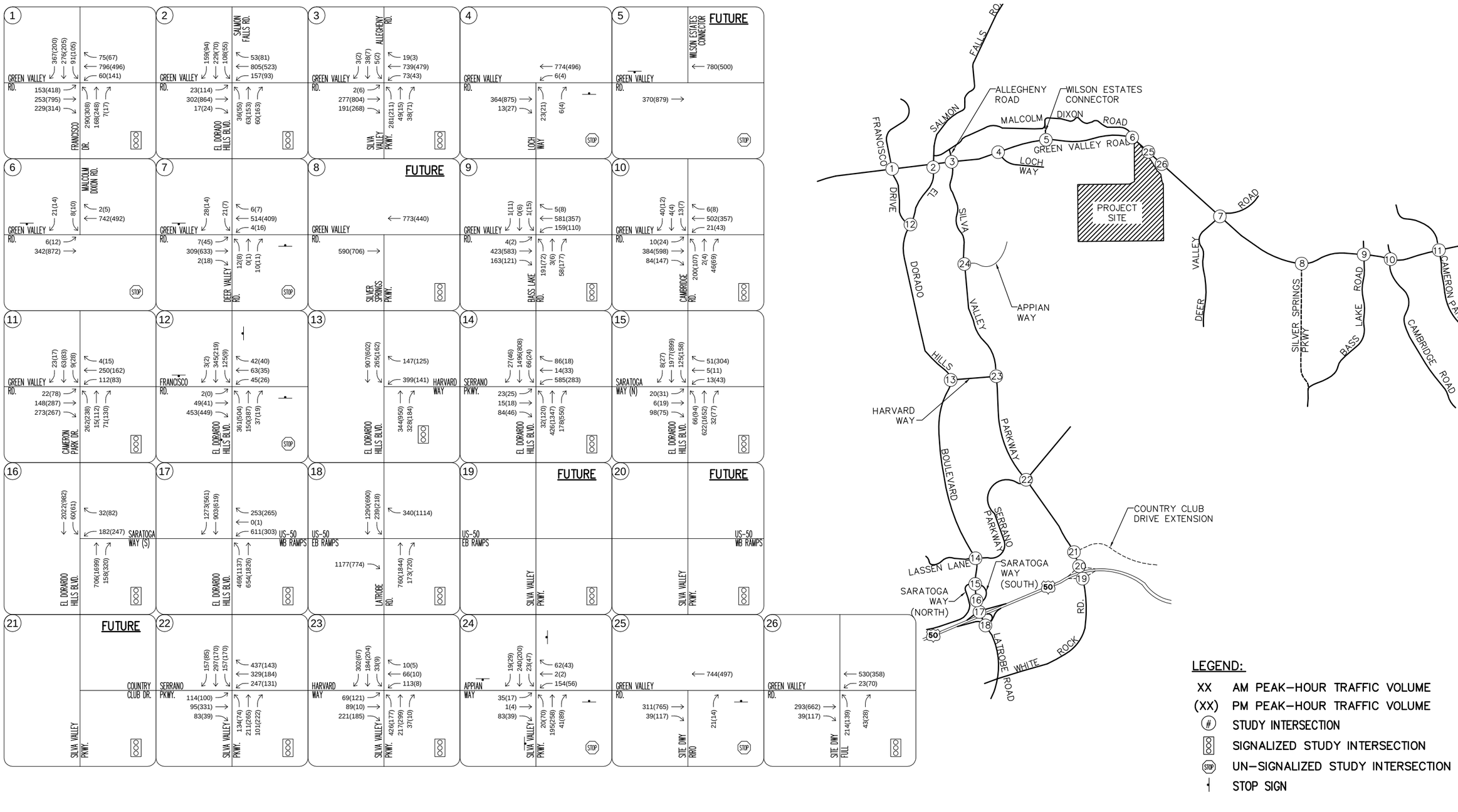

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FIGURE IV.C-9

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Dixon Ranch Residential Project EIR

Existing (2013) Plus Proposed Project Peak-Hour Traffic Volumes

SOURCE: KIMLEY-HORN AND ASSOCIATES, INC., JUNE 2013.

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Impact TRANS-1: Intersection #2, Green Valley Road/El Dorado Hills Boulevard/Salmon Falls Road, would operate at LOS F during the AM peak hour with the proposed project under the Existing (2013) Plus Proposed Project scenario. This is a significant impact. (S)

The significant impact at this intersection during the AM peak hours can be mitigated by modifying the lane configuration on the southbound approach.

> Mitigation Measure TRANS-1: The project applicant shall be responsible for modifying the lane configuration on the southbound approach to result in one left-turn lane, one through lane, and one right-turn lane. These improvements are subject to review and approval by the Community Development Agency, Transportation Division. (LTS)

As shown in Table IV.C-4, this mitigation measure results in the intersection operating at LOS D during the AM peak hour, and LOS E is acceptable within Community Regions. Implementation of the identified mitigation measure would reduce the impact to a less-than-significant level.

Table IV.C-4: Existing (2013) Plus Proposed Project Mitigated Conditions Intersection Levels of Service

#	Intersection	Analysis Scenario[a]	Traffic Control	AM Peak Hour		PM Peak Hour	
				Delay (sec)	LOS	Delay (sec)	LOS
2	Green Valley Rd/El Dorado Hills Blvd/Salmon Falls Rd	Existing	Signal	63.8	E	43.4	D
		Existing + PP		**87.7**	**F**	77.8	E
		Existing + PP (Mit)		45.3	D	61.8	E
12	El Dorado Hills Blvd/ Francisco Dr	Existing	Signal	**87.5**	**F**	**68.9**	**F**
		Existing + PP		**110.7**	**F**	**78.5**	**F**
		Existing + PP (Mit)		14.5	B	19.6	C

[a] Existing = Existing (2013); Existing + PP = Existing (2013) Plus Proposed Project; Existing + PP (Mit) = Mitigated
Bold = Substandard per County
Source: Kimley-Horn and Associates, 2013.

Impact TRANS-2: Intersection #12, El Dorado Hills Boulevard/Francisco Drive, would operate at LOS F during the AM and PM peak hours without the project, and the project contributes more than 10 peak hour trips to the intersection during both peak hours under the Existing (2013) Plus Proposed Project scenario. This is a significant impact. (S)

The significant impact at this intersection during the AM and PM peak hours can be mitigated by the County's planned 2013 intersection improvement project.

> Mitigation Measure TRANS-2: The project applicant shall pay TIM fees for the project consistent with the County's CIP program. Improvements to this intersection include the addition of an eastbound channelized right-turn lane on Francisco Drive and southbound receiving lane on El Dorado Hills Boulevard as identified in the County's CIP Project #71358 (Francisco Drive Right Turn Pocket). Completion is scheduled within the County's 10-year CIP. (SU [until the improvements are constructed] / LTS [after the improvements are constructed])

As shown in Table IV.C-4, this mitigation measure results in the intersection operating at LOS B and LOS C during the AM and PM peak hours, respectively. Implementation of the identified mitigation measure would reduce the impact to a less-than-significant level.

It should be noted that the aforementioned significant impacts and associated mitigation measures represent the effect of the full proposed project (604 new units) added to Existing (2013) Conditions. It is important to note that the necessity for and the timing of the various mitigations measures could differ from what is presented based on potential phased project implementation.

(6) Existing Plus Approved Projects (2018) Plus Proposed Project Conditions. Peak hour traffic associated with the proposed project was added to the Existing Plus Approved Projects (2018) Conditions traffic volumes and levels of service were determined at the study intersections. Table IV.C-5 provides a summary of the intersection operating conditions for this analysis scenario. Figure IV.C-10 provides the AM and PM traffic volumes for this analysis scenario.

Impact TRANS-3: Intersection #2, Green Valley Road/El Dorado Hills Boulevard/Salmon Falls Road operates at LOS F during the AM peak hour without the project, and the project contributes more than 10 peak hour trips to the intersection during the AM peak hour and results in LOS F during the PM peak hour under the Existing Plus Approved Projects (2018) Plus Proposed Project scenario. This is a significant impact. (S)

The significant impact at this intersection during the AM and PM peak hours can be mitigated by modifying the lane configuration on the southbound approach (per Mitigation Measures TRANS-1, above) and changing the northbound and southbound signal phasing from split-phased to concurrent protected left turns.

> Mitigation Measure TRANS-3: In addition to Mitigation Measure TRANS-1, the project applicant shall pay TIM fees for the project consistent with the County's CIP program. Additional improvements to this intersection include changing the northbound and southbound signal phasing from split-phased to concurrent protected left turns. This work is included in the County's CIP Project #73151 (Green Valley Road Traffic Signal Interconnect), and completion is scheduled within the County's 10-year CIP. (SU [until the improvements are constructed] / LTS [after the improvements are constructed])

As shown in Table IV.C-6, this mitigation measure results in the intersection operating at LOS E during the AM and PM peak hours. Implementation of the identified mitigation measure would reduce the impact to a less-than-significant level.

Impact TRANS-4: Intersection #4, Green Valley Road/Loch Way operates at LOS F during the PM peak hour with the project under the Existing Plus Approved Projects (2018) Plus Proposed Project scenario. This is a significant impact. (S)

The significant impact at this intersection during the PM peak hour can be mitigated by adding a two-way left-turn lane along Green Valley Road in the immediate vicinity of the intersection.

> Mitigation Measure TRANS-4: The project applicant shall be responsible for the addition of a two-way left-turn lane along Green Valley Road in the immediate vicinity of the intersection with Loch Way. This improvement would provide a left-turn lane for westbound traffic on Green Valley Road to turn left onto Loch Way and would allow for vehicles making a northbound left-turn movement from Loch Way onto Green Valley Road to clear eastbound traffic and wait for a gap in westbound traffic to merge onto westbound Green Valley Road. (LTS)

Table IV.C-5: Existing Plus Approved Projects (2018) and Existing Plus Approved Projects (2018) Plus Proposed Project Intersection Levels of Service

#	Intersection	Analysis Scenario[a]	Traffic Control	AM Peak Hour Delay (sec)	AM Peak Hour LOS	PM Peak Hour Delay (sec)	PM Peak Hour LOS
1	Green Valley Rd/ Francisco Dr	EPAP	Signal	33.0	C	32.8	C
		EPAP + PP		34.6	C	34.6	C
2	Green Valley Rd/El Dorado Hills Blvd/Salmon Falls Rd	EPAP	Signal	**83.7**	**F**	78.7	E
		EPAP + PP		**108.0**	**F**	**108.1**	**F**
3	Green Valley Rd/Silva Valley Pkwy/Allegheny Rd	EPAP	Signal	33.6	C	25.8	C
		EPAP + PP		46.7	D	42.9	D
4	Green Valley Rd/ Loch Wy	EPAP	TWSC[b]	24.0 (NBL)	C	32.3 (NBL)	D
		EPAP + PP		36.8 (NBL)	E	**60.6 (NBL)**	**F**
5	Green Valley Rd/ Wilson Estates Connector	EPAP	TWSC[b]	17.7 (SB)	C	17.6 (SB)	C
		EPAP + PP		24.8 (SB)	C	26.1 (SB)	D
6	Green Valley Rd/ Malcolm Dixon Rd	EPAP	TWSC[b]	16.5 (SB)	C	19.8 (SB)	C
		EPAP + PP		22.4 (SB)	C	30.8 (SB)	D
7	Green Valley Road/ Deer Valley Rd	EPAP	TWSC[b]	20.4 (SB)	C	25.2 (NB)	D
		EPAP + PP		22.7 (SB)	C	29.0 (NB)	D
8	Green Valley Rd/ Silver Springs Pkwy	EPAP	Signal	8.5	A	7.8	A
		EPAP + PP		8.9	A	8.1	A
9	Green Valley Rd/ Bass Lake Rd	EPAP	Signal	22.1	C	22.3	C
		EPAP + PP		23.3	C	23.0	C
10	Green Valley Rd/ Cambridge Rd	EPAP	Signal	18.6	B	21.0	C
		EPAP + PP		19.3	B	22.1	C
11	Green Valley Rd/ Cameron Park Dr	EPAP	Signal	27.6	C	31.7	C
		EPAP + PP		30.8	C	34.9	C
12	El Dorado Hills Blvd/ Francisco Dr	EPAP	AWSC	16.8	C	22.2	C
		EPAP + PP		17.8	C	23.0	C
13	El Dorado Hills Blvd/ Harvard Wy	EPAP	Signal	13.2	B	10.6	B
		EPAP + PP		13.3	B	10.7	B
14	El Dorado Hills Blvd/ Serrano Pkwy	EPAP	Signal	39.9	D	16.9	B
		EPAP + PP		40.9	D	17.1	B
15	El Dorado Hills Blvd/ Saratoga Way (North)	EPAP	Signal	31.2	C	25.0	C
		EPAP + PP		31.3	C	24.7	C
16	El Dorado Hills Blvd/ Saratoga Way (South)	EPAP	Signal	28.1	C	29.9	C
		EPAP + PP		29.0	C	30.2	C
17	El Dorado Hills Blvd/ US-50 WB Ramps	*Intersection Eliminated with Interchange Reconfiguration*					
18	Latrobe Rd/US-50 EB Ramps	EPAP	Signal	10.5	B	10.4	B
		EPAP + PP		10.5	B	10.4	B
19	Silva Valley Pkwy/ US-50 EB Ramps	EPAP	Signal	18.1	B	34.7	C
		EPAP + PP		18.5	B	37.7	D
20	Silva Valley Pkwy/ US-50 WB Ramps	EPAP	Signal	28.7	C	42.5	D
		EPAP + PP		29.8	C	41.5	D
21	Silva Valley Pkwy/ Country Club Dr	EPAP	Signal	9.7	A	7.7	A
		EPAP + PP		9.8	A	8.2	A
22	Silva Valley Pkwy/ Serrano Pkwy	EPAP	Signal	46.5	D	42.6	D
		EPAP + PP		49.0	D	44.0	D
23	Silva Valley Pkwy/ Harvard Wy	EPAP	Signal	36.0	D	17.3	B
		EPAP + PP		39.2	D	17.7	B
24	Silva Valley Pkwy/ Appian Wy	EPAP	AWSC	19.0	C	22.9	C
		EPAP + PP		28.9	D	42.5	E
25	Green Valley Rd/Site Access Driveway (Right-in/Right-out)	EPAP	TWSC[b]	*Plus Project Scenarios Only*			
		EPAP + PP		10.8 (NBR)	B	18.5 (NBR)	C
26	Green Valley Rd/Site Access Driveway	EPAP	Signal	*Plus Project Scenarios Only*			
		EPAP + PP		9.2	A	9.7	A

[a] EPAP = Existing Plus Approved Projects (2018); EPAP + PP = Existing Plus Approved Projects (2018) Plus Proposed Project
[b] Control delay for worst minor approach (worst minor movement) for two-way stop controlled intersections.
TWSC = two-way stop controlled; AWSC = all-way stop controlled
NBL = northbound left-turn; NBR = northbound right-turn; SB = southbound; NB = northbound
Bold = Substandard per County
Source: Kimley-Horn and Associates, 2013.

As shown in Table IV.C-6, this mitigation measure results in the intersection operating at LOS C during the PM peak hour. Implementation of the identified mitigation measure would reduce the impact to a less-than-significant level.

Table IV.C-6: Existing Plus Approved Projects (2018) Plus Proposed Project Mitigated Conditions Intersection Levels of Service

#	Intersection	Analysis Scenario[a]	Traffic Control	AM Peak Hour		PM Peak Hour	
				Delay (sec)	LOS	Delay (sec)	LOS
2	Green Valley Rd/El Dorado Hills Blvd/Salmon Falls Rd	EPAP	Signal	**83.7**	**F**	78.7	E
		EPAP + PP		**108.0**	**F**	**108.1**	**F**
		EPAP + PP (Mit)		59.8	E	77.8	E
4	Green Valley Rd/ Loch Way	EPAP	TWSC[b]	24.0 (NBL)	C	32.3 (NBL)	D
		EPAP + PP		36.8 (NBL)	E	**60.6 (NBL)**	**F**
		EPAP + PP (Mit)		17.4 (NBL)	C	20.2 (NBR)	C

[a] Existing = Existing (2013); Existing + PP = Existing (2013) Plus Proposed Project; Existing + PP (Mit) = Mitigated
[b] Control delay for worst minor approach (worst minor movement) for two-way stop controlled intersections.
NBL = northbound left-turn; NBR = northbound right-turn
Bold = Substandard per County
Source: Kimley-Horn and Associates, 2013.

It should be noted that the significant impacts and associated mitigation measures represent the effect of the full proposed project (604 new units) added to Existing Plus Approved Projects (2018) Conditions. It is important to note that the necessity for and the timing of the various mitigation measures could differ from what is presented based on potential phased project implementation.

(7) Cumulative (2025) Plus Proposed Project Conditions. As previously established, according to information provided by a representative of the County,[22] it was necessary to re-run the County's travel demand model by adding an additional 294 single-family dwelling units to the Traffic Analysis Zone (TAZ) in which the project is located to reflect the addition of the proposed project. As such, the County's travel demand model was updated to include the additional 294 single-family dwelling units within TAZ 335.

Due to the project's inclusion of age-restricted dwelling units, it was necessary to develop a rationale for determining the equivalent total single-family dwelling unit value for input into the travel demand model. As presented in Table IV.C-7, using the average ITE trip rates, the age-restricted units are anticipated to generate trips at a rate equal to 39 percent of the single-family rate (use of the Daily trip data is considered to be conservative as the AM and PM peak hour trip rates for the age-restricted units are less than 30 percent of the single-family rates).

Because ITE guidance[23] recommends the use of specific land use data regression equations for types of proposed residential land uses, Table IV.C-8 demonstrates that the age-restricted units are anticipated to generate trips at a rate equal to 49 percent of the single-family rate based on the regression equation data.

[22] Kittelson & Associates, Inc., 2013. Email from Chirag Safi. February 28.

[23] ITE Trip Generation Handbook, 2nd Edition, Figure 3.1, Page 10.

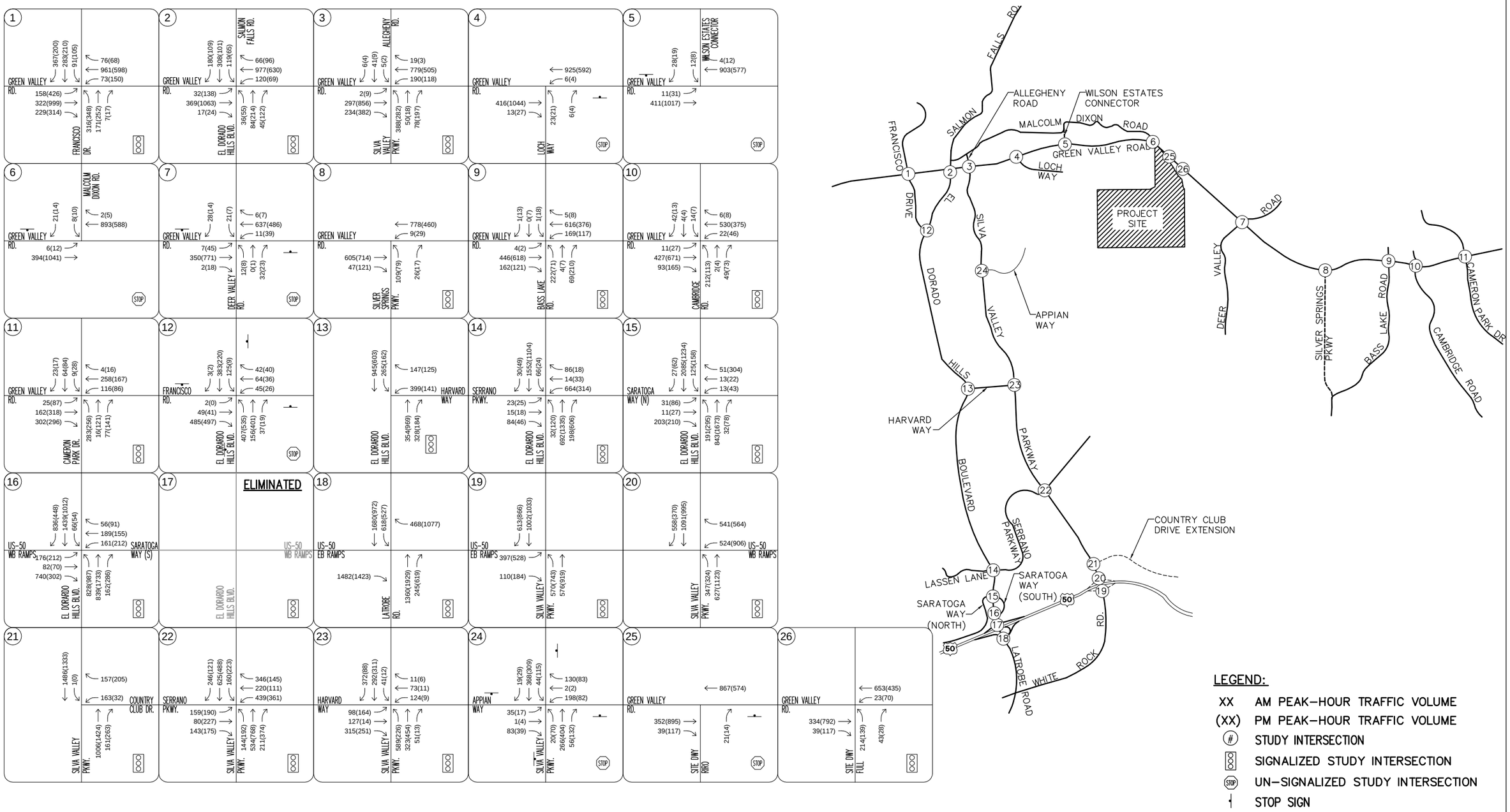

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FIGURE IV.C-10

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Dixon Ranch Residential Project EIR

Existing Plus Approved Projects (2018)
Plus Proposed Project Peak-Hour Traffic Volumes

SOURCE: KIMLEY-HORN AND ASSOCIATES, INC., JUNE 2013.

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It is acknowledged that previous documentation[24] on the topic illustrates that age-restricted single-family homes "generate 63% fewer trips than standard single-family homes…". Nevertheless, this report utilized more recent, conservative data. As such, using a 50 percent equivalency factor (based on the regression equation generated trip rate, rounded up from 49 percent to 50 percent), each age-restricted dwelling unit would equate to 0.50 single-family dwelling units, resulting in consideration for up to 524 single-family dwelling units (444+0.5*160). Based on this logic, it was determined that 294 single-family dwelling units were required to be added to TAZ 335.[25]

Table IV.C-7: Trip Rate Comparison – Average Rate

Land Use (ITE Code)	ITE Trip Rates		
	Daily	AM	PM
Single-Family Detached Housing (210)	9.52	0.75	1.00
Senior Adult Housing-Detached (251)	3.68	0.22	0.27
% of Single-Family (210)	39%	29%	27%

Source: Kimley-Horn and Associates, 2013.

Table IV.C-8: Trip Rate Comparison – Regression Equation

Land Use (ITE Code)	ITE Trip Rates		
	Daily	AM	PM
Single-Family Detached Housing (210)	9.23	0.72	0.91
Senior Adult Housing-Detached (251)	4.50	0.36	0.40
% of Single-Family (210)	49%	49%	44%

Source: Kimley-Horn and Associates, 2013.

Model runs both without and with these additional units were generated, and the difference between the runs was added to the Cumulative (2025) traffic volumes to establish conditions for this analysis scenario. Levels of service were then determined at the study intersections. Table IV.C-9 provides a summary of the intersection analysis and Figure IV.C-11 provides the AM and PM traffic volumes for this analysis scenario.

As indicated in Table IV.C-9, the study intersections operate from LOS A to LOS F during the AM and PM peak hours. The analysis worksheets for this scenario are provided in Appendix B.

<u>Impact TRANS-5</u>: Intersection #2, Green Valley Road/El Dorado Hills Boulevard/Salmon Falls Road, operates at LOS F during the AM and PM peak hours without the project, and the project contributes more than 10 peak hour trips to the intersection during both peak hours under the Cumulative (2025) Plus Proposed Project scenario. This is a significant impact. (S)

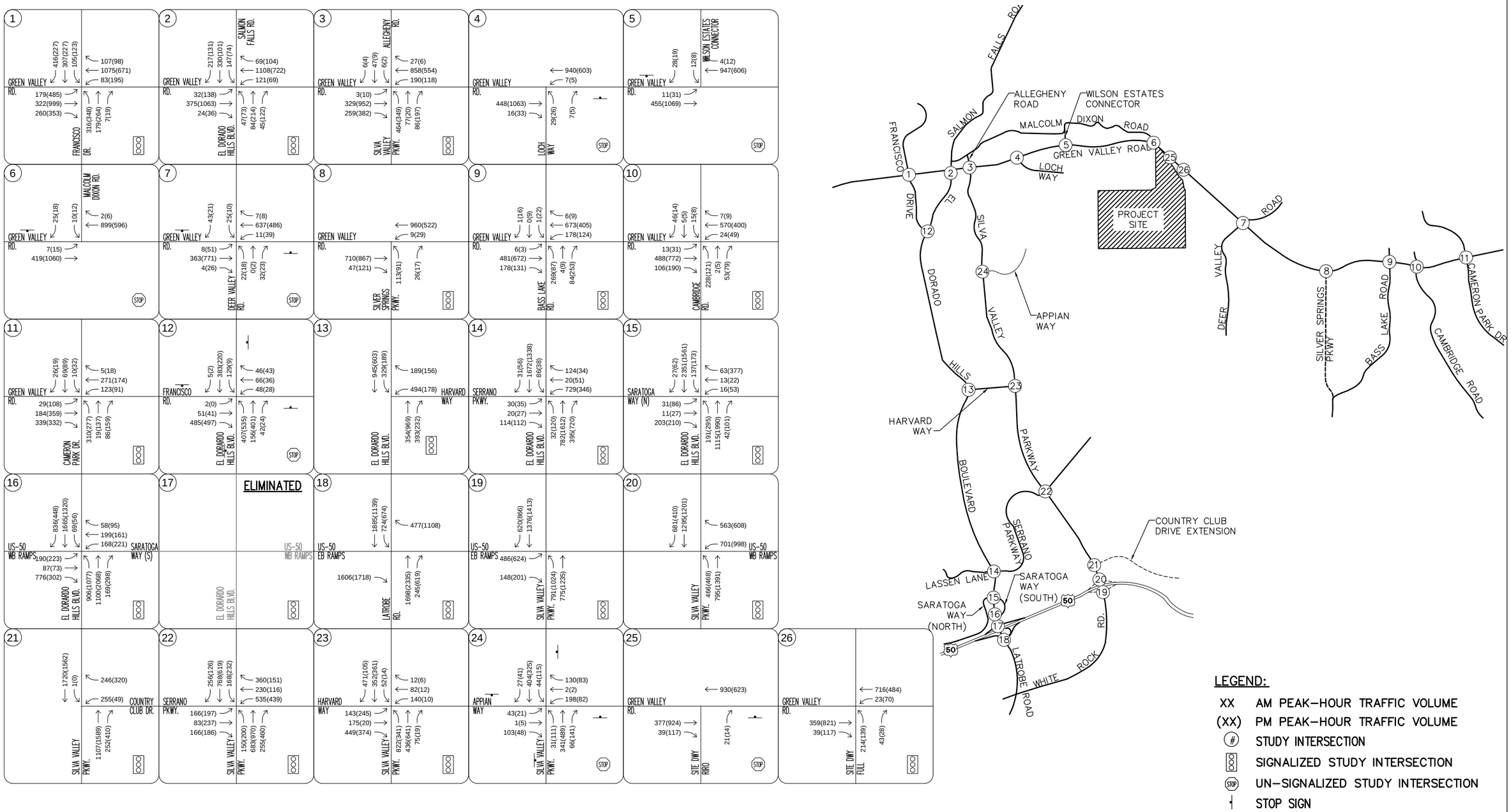
[24] MJM Properties, 2008. Letter from Michael McDougall to El Dorado County Board of Supervisors, September 16.

[25] Kittelson & Associates, Inc., 2013. Email from Chirag Safi. February 28.

Table IV.C-9: Cumulative (2025) and Cumulative (2025) Plus Proposed Project Intersection Levels of Service

#	Intersection	Analysis Scenario[a]	Traffic Control	AM Peak Hour Delay (sec)	AM Peak Hour LOS	PM Peak Hour Delay (sec)	PM Peak Hour LOS
1	Green Valley Rd/ Francisco Dr	Cum	Signal	35.9	D	37.7	D
		Cum + PP		37.9	D	40.5	D
2	Green Valley Rd/El Dorado Hills Blvd/Salmon Falls Rd	Cum	Signal	**120.5**	**F**	**90.6**	**F**
		Cum + PP		**145.4**	**F**	**120.9**	**F**
3	Green Valley Rd/Silva Valley Pkwy/Allegheny Rd	Cum	Signal	45.9	D	35.6	C
		Cum + PP		65.8	E	53.4	D
4	Green Valley Rd/ Loch Wy	Cum	TWSC[b]	26.5 (NBL)	D	35.4 (NBL)	E
		Cum + PP		42.3 (NBL)	E	**70.3 (NBL)**	**F**
5	Green Valley Rd/ Wilson Estates Connector	Cum	TWSC[b]	19.2 (SB)	C	19.0 (SB)	C
		Cum + PP		27.4 (SB)	D	28.8 (SB)	D
6	Green Valley Rd/ Malcolm Dixon Rd	Cum	TWSC[b]	17.2 (SB)	C	20.6 (SB)	C
		Cum + PP		23.7 (SB)	C	32.7 (SB)	D
7	Green Valley Road/ Deer Valley Rd	Cum	TWSC[b]	21.1 (SB)	C	**37.2 (NB)**	**E**
		Cum + PP		23.6 (SB)	C	**46.1 (NB)**	**E**
8	Green Valley Rd/ Silver Springs Pkwy	Cum	Signal	10.3	B	9.3	A
		Cum + PP		11.0	B	10.4	A
9	Green Valley Rd/ Bass Lake Rd	Cum	Signal	26.8	C	25.8	C
		Cum + PP		28.7	C	26.5	C
10	Green Valley Rd/ Cambridge Rd	Cum	Signal	21.7	C	25.3	C
		Cum + PP		22.2	C	27.9	C
11	Green Valley Rd/ Cameron Park Dr	Cum	Signal	32.1	C	38.4	D
		Cum + PP		35.6	D	43.0	D
12	El Dorado Hills Blvd/ Francisco Dr	Cum	AWSC	17.3	C	22.5	C
		Cum + PP		18.5	C	23.3	C
13	El Dorado Hills Blvd/ Harvard Wy	Cum	Signal	16.1	B	10.4	B
		Cum + PP		16.2	B	10.5	B
14	El Dorado Hills Blvd/ Serrano Pkwy	Cum	Signal	51.3	D	19.9	B
		Cum + PP		54.1	D	20.3	C
15	El Dorado Hills Blvd/ Saratoga Way (North)	Cum	Signal	32.4	C	51.8	D
		Cum + PP		34.2	C	51.5	D
16	El Dorado Hills Blvd/ Saratoga Way (South)	Cum	Signal	33.9	C	43.9	D
		Cum + PP		33.5	C	43.9	D
17	El Dorado Hills Blvd/ US-50 WB Ramps	*Intersection Eliminated with Interchange Reconfiguration*					
18	Latrobe Rd/US-50 EB Ramps	Cum	Signal	17.0	B	24.4	C
		Cum + PP		17.0	B	24.3	C
19	Silva Valley Pkwy/ US-50 EB Ramps	Cum	Signal	28.4	C	53.2	D
		Cum + PP		28.9	C	70.5	E
20	Silva Valley Pkwy/ US-50 WB Ramps	Cum	Signal	56.4	E	70.6	E
		Cum + PP		59.8	E	74.6	E
21	Silva Valley Pkwy/ Country Club Dr	Cum	Signal	16.1	B	16.2	B
		Cum + PP		15.4	B	17.5	B
22	Silva Valley Pkwy/ Serrano Pkwy	Cum	Signal	53.8	D	60.1	E
		Cum + PP		57.4	E	63.0	E
23	Silva Valley Pkwy/ Harvard Wy	Cum	Signal	69.9	E	24.1	C
		Cum + PP		77.1	E	25.5	C
24	Silva Valley Pkwy/ Appian Wy	Cum	AWSC	35.6	E	**54.3**	**F**
		Cum + PP		**62.4**	**F**	**95.1**	**F**
25	Green Valley Rd/Site Access Driveway (Right-in/Right-out)	Cum	TWSC[b]	*Plus Project Scenarios Only*			
		Cum + PP		11.0 (NBR)	B	19.2 (NBR)	C
26	Green Valley Rd/Site Access Driveway	Cum	Signal	*Plus Project Scenarios Only*			
		Cum + PP		10.9	B	12.6	B

[a] Cum = Cumulative (2025); Cum + PP = Cumulative (2025) Plus Proposed Project
[b] Control delay for worst minor approach (worst minor movement) for two-way stop controlled intersections.
TWSC = two-way stop controlled; AWSC = all-way stop controlled
NBL = northbound left-turn; NBR = northbound right-turn; SB = southbound; NB = northbound
Bold = Substandard per County
Source: Kimley-Horn and Associates, 2013.



LSA

NOT TO SCALE

SOURCE: KIMLEY-HORN AND ASSOCIATES, INC., JUNE 2013.

I:\EDC1101 Dixon Ranch\figures\EIR\Fig_IVC11 11x17.ai (9/3/13)

FIGURE IV.C-11

Dixon Ranch Residential Project EIR

Cumulative (2025) Plus Proposed Project Peak-Hour Traffic Volumes

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In addition to the improvements identified in Mitigation Measures TRANS-1 and TRANS -3, the significant impact at this intersection can be mitigated by adding one additional through lane in each direction on Green Valley Road consistent with County standards for intersection improvements.

> Mitigation Measure TRANS-5: In addition to implementation of Mitigation Measures TRANS-1 and TRANS-3, the project applicant shall pay TIM fees towards the installation of an additional through lane in each direction along Green Valley Road if this improvement is included in the 10-year County CIP. Payment of TIM fees is considered to be the project's proportionate fair share towards mitigation of this impact. If the additional through lanes are not included in the 10-year CIP prior to this impact being triggered (issuance of the first building permit), the applicant shall construct the improvements and may be eligible for reimbursement of costs in excess of the project's fair share, subject to a reimbursement agreement with the County. (SU [until the improvements are constructed] / LTS [after the improvements are constructed])

As shown in Table IV.C-10, this mitigation measure results in the intersection operating at LOS C and LOS D during the AM and PM peak hours, respectively. Implementation of the identified mitigation measure would reduce the impact to a less-than-significant level.

Table IV.C-10: Cumulative (2025) Plus Proposed Project Mitigated Conditions Intersection Levels of Service

#	Intersection	Analysis Scenario[a]	Traffic Control	AM Peak Hour		PM Peak Hour	
				Delay (sec)	LOS	Delay (sec)	LOS
2	Green Valley Rd/El Dorado Hills Blvd/Salmon Falls Rd	Cum	Signal	**120.5**	**F**	**90.6**	**F**
		Cum + PP		**145.4**	**F**	**120.9**	**F**
		Cum + PP (Mit)		34.2	C	36.8	D
4	Green Valley Rd/ Loch Way	Cum	TWSC[b]	26.5 (NBL)	D	35.4 (NBL)	E
		Cum + PP		42.3 (NBL)	E	**70.3 (NBL)**	**F**
		Cum + PP (Mit)		18.1 (NBL)	C	20.8 (NBR)	C
7	Green Valley Road/ Deer Valley Rd	Cum	TWSC[b]	21.1 (SB)	C	**37.2 (NB)**	**E**
		Cum + PP		23.6 (SB)	C	**46.1 (NB)**	**E**
		Cum + PP (Mit)	Signal	4.5	A	3.5	A
24	Silva Valley Pkwy/ Appian Wy	Cum	AWSC	35.6	E	**54.3**	**F**
		Cum + PP		**62.4**	**F**	**95.1**	**F**
		Cum + PP (Mit)	Signal	11.5	B	9.1	A

[a] Cum = Cumulative (2025); Cum + PP = Cumulative (2025) Plus Proposed Project; Cum + PP (Mit) = Mitigated
[b] Control delay for worst minor approach (worst minor movement) for two-way stop controlled intersections.
TWSC = two-way stop controlled; AWSC = all-way stop controlled
NBL = northbound left-turn; NBR = northbound right-turn; SB = southbound; NB = northbound
Bold = Substandard per County
Source: Kimley-Horn and Associates, 2013.

It should be noted that the "Green Valley Road Widening from Salmon Falls Road to Deer Valley Road" project is identified in the current County Capital Improvement Program (CIP) as a "Future" project that "will be built beyond fiscal year 2020/2021."

Impact TRANS-6: Intersection #4, Green Valley Road/Loch Way, would operate at LOS F during the PM peak hour with the project under the Cumulative (2025) Plus Proposed Project scenario. This is a significant impact. (S)

The significant impact at this intersection during the PM peak hour can be mitigated by adding a two-way left-turn lane along Green Valley in the immediate vicinity of the intersection.

Mitigation Measure TRANS-6: Implement Mitigation Measure TRANS-4. (LTS)

As shown in Table IV.C-10, this mitigation measure results in the intersection operating at LOS C during the PM peak hour. Implementation of the identified mitigation measure would reduce the impact to a less-than-significant level.

Impact TRANS-7: Intersection #7, Green Valley Road/Deer Valley Road, operates at LOS E during the PM peak hour without the project, and the project contributes more than 10 peak hour trips to the intersection during the PM peak hour under the Cumulative (2025) Plus Proposed Project scenario. This is a potentially significant impact. (S)

The significant impact at this intersection during the PM peak hour can be mitigated with the addition of traffic signal control.

Mitigation Measure TRANS-7: In order to ensure proper timing for the installation of the traffic signal control, the applicant shall be responsible to perform traffic signal warrants and LOS analysis at this intersection with each final map in accordance with the Manual on Uniform Traffic Control Devices (version in effect at the time of application). If traffic signal warrants are met, or LOS E reached at the intersection at the time of application for final map (including the lots proposed by that final map), the applicant shall construct the improvements prior to issuance of the first certificate of occupancy for any lot within that final map.

If traffic signal warrants are not met or LOS E is not reached upon application for the last final map within the project, the project applicant shall pay its TIM fees toward the installation of a traffic signal control at this intersection. Payment of TIM fees is considered to be the project's proportionate fair share towards mitigation of this impact.

If the traffic signal control at this intersection is constructed by the County or others prior to triggering of mitigation by the project, payment of TIM fees is considered to be the project's proportionate fair share towards mitigation of this impact.

Traffic signal controls constructed by the project applicant may be eligible for reimbursement of costs in excess of the project's fair share, subject to a reimbursement agreement with the County. (LTS)

As shown in Table IV.C-10, this mitigation measure results in the intersection operating at LOS A during the PM peak hour. Implementation of the identified mitigation measure would reduce the impact to a less-than-significant level.

Impact TRANS-8: Intersection #24, Silva Valley Parkway/Appian Way, operates at LOS F during the PM peak hour without the project, and the project contributes more than 10 peak hour trips to the intersection during the PM peak hour and results in LOS F during the AM peak hour under the Cumulative (2025) Plus Proposed Project scenario. This is a significant impact. (S)

The significant impact at this intersection during the PM peak hour can be mitigated by the addition of traffic signal control.

> Mitigation Measure TRANS-8: In order to ensure proper timing for the installation of the traffic signal control, the applicant shall be responsible to perform traffic signal warrants and LOS analysis at this intersection with each final map in accordance with the Manual on Uniform Traffic Control Devices (version in effect at the time of application). If traffic signal warrants are met, or LOS F reached at the intersection at the time of application for final map (including the lots proposed by that final map), the applicant shall construct the improvements prior to issuance of the first certificate of occupancy for any lot within that final map.
>
> If traffic signal warrants are not met or LOS F is not reached upon application for the last final map within the project, the project shall pay its TIM fees toward the installation of a traffic signal control at this intersection. Payment of TIM fees is considered to be the project's proportionate fair share towards mitigation of this impact.
>
> If the traffic signal control at this intersection is constructed by the County or others prior to triggering of mitigation by the project, payment of TIM fees is considered to be the projects proportionate fair share towards mitigation of this impact.
>
> Traffic signal controls constructed by the project may be eligible for reimbursement of costs in excess of the project's fair share, subject to a reimbursement agreement with the County. (LTS)

As shown in Table IV.C-10, this mitigation measure results in the intersection operating at LOS B and LOS A during the AM and PM peak hours, respectively. Implementation of the identified mitigation measure would reduce the impact to a less-than-significant level.

(8) Peak Hour Traffic Signal Warrant Evaluation. A planning level assessment of the need for traffic signalization was performed for the un-signalized study intersections. This evaluation was performed consistently with the peak hour warrant methodologies noted in Section 4C of the *California Manual on Uniform Traffic Control Devices (CMUTCD), 2012 Edition*. A summary of the peak hour warrant results are presented in Table IV.C-11. As shown in Table IV.C-11, the addition of the proposed project does not result in the peak hour signal warrant being satisfied. Detailed results of this analysis are presented in Appendix B.

Table IV.C-11: Traffic Signal Warrant Analysis Results

#	Intersection	Analysis Scenario					
		Existing (2013)	Existing (2013) Plus PP	EPAP (2018)	EPAP (2018) Plus PP	Cumu-lative (2025)	Cumu-lative (2025) Plus PP
4	Green Valley Rd/Loch Way	No/No	No/No	No/No	No/No	No/No	No/No
5	Green Valley Rd/Wilson Connector	No/No	No/No	No/No	No/No	No/No	No/No
6	Green Valley Rd/Malcolm Dixon Rd	No/No	No/No	No/No	No/No	No/No	No/No
7	Green Valley Road/Deer Valley Rd	No/No	No/No	No/No	No/No	No/No	No/No
12	El Dorado Hills Blvd/Francisco Dr	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes	Yes/Yes
24	Silva Valley Pkwy/Appian Way	No/No	No/No	Yes/No	Yes/No	Yes/No	Yes/Yes
25	Green Valley Rd/Site Access Driveway		No/No		No/No		No/No
26	Green Valley Rd/Site Access Driveway		No/No		No/Yes		Yes/Yes

Notes:
– Results are presented in AM/PM format.
– Peak-hour warrant is satisfied if Condition A or B is satisfied.
EPAP = Existing Plus Approved Projects; PP = Proposed Project
Source: Kimley-Horn and Associates, 2013.

(9) Site Plan, Access, and On-site Circulation Evaluation. The site plan for the proposed project was qualitatively reviewed for general access and on-site circulation. According to the site plan, primary access to the site will be provided via two driveways along Green Valley Road: one right-in/right-out and one full access. All other access points are proposed to be emergency use only. Detailed level of service and delay data were previously reported for the Green Valley Road intersections (Intersections #25 and #26). The combination of these access points, as well as the on-site circulation system, would provide adequate access to/from Green Valley Road.

As shown in Tables IV.C-3, IV.C-5 and IV.C-10, the site access points along Green Valley Road (Intersections #25 and #26) are anticipated to operate at LOS A or B for all analysis scenarios. The analyses assumed the following baseline intersection geometry at the full access driveway (Intersection #26): traffic signal control, a westbound left-turn. As demonstrated in Table IV.C-11, Intersection #25 (right-in/right-out site driveway) does not satisfy the peak hour traffic signal warrant under any scenario.

In addition, Fire Safe Regulations[26] state that on-site roadways shall "provide for safe access for emergency wildland fire equipment and civilian evacuation concurrently, and shall provide unobstructed traffic circulation during a wildfire emergency…" All project roadways shall be designed and constructed in accordance with these requirements.

(10) Preliminary Traffic Safety Evaluation. According to the County's *2011 Accident Location Study* (Study);[27] several study area sites (i.e., intersections and roadway segments) experienced three or more accidents during a three-year period between January 1, 2009, and December 31, 2011. According to the Study, these sites were selected for investigation and determination of

[26] El Dorado County, 1992. Community Development Agency, Development Services Division – Building Services. *Fire Safe Regulations, Title 14 Natural Resources, Division 1.5 Department of Forestry, Chapter 7 – Fire Protection, Subchapter 2 SRA Safe Regulations, Article 2 Emergency Access*.

[27] El Dorado County, 2012. Department of Transportation. *Annual Accident Location Study 2011*. May 18.

corrective action(s). Table IV.C-12 provides a summary of the study area sites and their selected actions.

Table IV.C-12: Project Area Sites Selected for Investigation

Site #	Location Description	Accident Rate[a]	Identified Action
13	El Dorado Hills Blvd, US 50 On/Off Ramps	1.07	Pending Improvements
14	El Dorado Hills Blvd, North of Lassen/Serrano Pkwy	0.25	None Required
15	El Dorado Hills Blvd, South of Wilson Blvd	0.12	None Required
16	El Dorado Hills Blvd, at Crown Dr	0.24	None Required
23	Green Valley Rd, vicinity of Silva Valley Pkwy	0.68	None Required
24	Green Valley Rd, vicinity of Deer Valley Rd (west)	0.67	None Required
25	Green Valley Rd, vicinity of Bass Lake Rd	0.33	None Required
59	Silva Valley Pkwy, vicinity of Darwin Wy	0.60	None Required

[a] # Accidents per Million Vehicles (MV) for single sites (intersections/curves), # Accidents per Million Vehicle Miles (MVM) for roadway sections

Source: *Annual Accident Location Study 2011,* County of El Dorado Department of Transportation, May 18, 2012.

The County's *2011 Annual Accident Location* Study, dated May 18, 2012, noted "A benchmark of 1.00 Acc/MEV is the accepted state-wide accident rate for single sites, such as an intersection or an individual curve. Any site with an accident rate of 1.00 or above will be considered for additional action." In addition, the *Accident Location* Study is "limited to those accident locations having three (3) or more reported accidents." According to the Study, seven sites "do not require further review at this time. However, these sites will continue to be monitored and any subsequent increase in the frequency of accidents may necessitate further review and analysis." One site has a pending improvement and it is anticipated that, "upon completion, [this] improvement will substantially reduce the number of accidents."

(11) Intersection Queuing Evaluation. As presented in the Table IV.C-13, additional queuing analysis was prepared to evaluate the intersections that were previously identified as having a significant impact during the operational analyses, to determine if additional impacts related to queuing would be realized. For this supplemental evaluation, at locations where the addition of the proposed project traffic is anticipated to cause the vehicle queues to exceed the available storage capacity, improvements to decrease the vehicle queues and/or increase the available storage length are recommended. The following summarizes intersection queues that exceed capacity and corresponding improvements that are recommended:

- **Intersection #2, Green Valley Road/El Dorado Hills Boulevard/Salmon Falls Road.** This intersection was previously identified as having significant LOS impacts for Existing (2013), Existing plus Approved Projects (2018), and Cumulative (2025) Conditions.
    - **WBL:** The westbound left-turn pocket at this intersection should be extended to 250 feet (from 105 feet) to accommodate future traffic projections. This extension would require widening Green Valley Road between El Dorado Hills Boulevard and Silva Valley Parkway. The documented queuing currently is utilizing the entire storage space between intersections, but is not exceeding it. This queuing would exceed the storage capacity with future traffic, as well as with the addition of the proposed project. The project increases traffic volumes for this movement and should contribute its proportionate share toward this improvement.

- **WBT/R:** To accommodate the westbound through queue, an additional westbound through lane should be provided between El Dorado Hills and Silva Valley Parkway that is long enough to accommodate the anticipated queuing and other operational considerations. This mitigation was specified during the operational analysis for Cumulative (2025) conditions. It is important to note that the "Green Valley Road Widening from Salmon Falls Road to Deer Valley Road" project is identified in the current County Capital Improvement Program (CIP) as a "Future" project that "will be built beyond fiscal year 2020/2021." With the widening improvements identified, queuing for the westbound through-lane would be resolved. The queuing impacts currently exist and would continue to worsen with future traffic and the addition of the proposed project. Similar to the operational mitigation discussion for Cumulative (2025) conditions, the project should contribute its proportionate share toward these improvements.
- **EBL:** The eastbound left-turn pocket at this intersection should be extended to 275 feet (from 85 feet) to accommodate future traffic projections. This extension would require widening Green Valley Road. The project does not increase traffic volumes for this movement and is not responsible for any additional improvements beyond what was identified in the intersection operation analysis.
- **NBT/R:** The northbound through queue extends beyond the next intersection to the south, Timberline Ridge Drive. To prevent blocking of traffic entering and exiting Timberline Ridge Drive, "Keep Clear" markings should be added to northbound El Dorado Hills Boulevard lanes in front of the Timberline Ridge Drive intersection. There is approximately 960-feet beyond Timberline Ridge Drive until the next intersection to the south that would accommodate the queue. The project increases traffic volumes for this movement and should contribute its proportionate share toward these improvements.

- **Intersection #12, El Dorado Hills Boulevard/Francisco Drive.** This intersection was previously identified as having significant LOS impacts for Existing (2013), Conditions.
  - **NBL:** The northbound left-turn pocket at this intersection should be extended to 500 feet (from 95 feet) to accommodate future traffic projections. This extension would require widening of El Dorado Hills Boulevard. The project does not increase traffic volumes for this movement and is not responsible for any additional improvements beyond what was identified in the intersection LOS analysis.
  - **SBL:** The southbound left-turn pocket is constrained by the adjacent intersection's northbound left turn pocket. Queues were found to exceed the storage length by approximately 10 feet, which would still be within the taper area of the storage pocket. No change is recommended. Further, the project does not increase traffic volumes for this movement and is not responsible for any additional improvements beyond what was identified in the intersection operation analysis.
  - **SBT:** The southbound through queue extends beyond the next intersection to the north, Telegraph Hill Road. To prevent blocking of traffic entering and exiting Telegraph Hill Road, "Keep Clear" markings should be added to southbound El Dorado Hills Boulevard lanes in front of the Telegraph Hill Road intersection. There is approximately 440 feet beyond Telegraph Hill Road until the next intersection to the north that would accommodate the queue.

- **WBL/T/R:** The westbound approach queue extends beyond the next intersection to the east, Hoffman Court. The volume on Hoffman Court is extremely low as it provides access to ten houses and terminates in a cul-de-sac. There is an additional 250 feet east along Francisco Drive until the next intersection that would accommodate the queue. No improvements are recommended at this location.

- **Intersection #18, Latrobe Road/US-50 EB Ramps.** The southbound left-turn queue extends beyond the storage length by over 200 feet. The project does not increase traffic volumes for this movement and is not responsible for any additional improvements beyond what was identified in the intersection LOS analysis.
- **Intersection #19, Silva Valley Parkway/US-50 EB Ramps.** The northbound left-turn queue extends beyond the storage length by over 200 feet. The project does not increase traffic volumes for this movement and is not responsible for any additional improvements beyond what was identified in the intersection LOS analysis.

Impact TRANS-9: Implementation of the proposed project would add additional queue lengths to various intersections. This would result in a significant impact. (S)

This potential impact can be reduced to less-than-significant with implementation of the following mitigation measure:

Mitigation Measure TRANS-9: The applicant shall construct intersection improvements as described below:

- **Intersection #2, Green Valley Road/El Dorado Hills Boulevard/Salmon Falls Road**
  - **WBL:** If this improvement is not constructed with TRANS-5 prior to issuance of the project's first building permit, the westbound left-turn pocket at this intersection from Green Valley Road to El Dorado Hills Boulevard shall be extended to 250 feet (from 105 feet) to accommodate future traffic projections. This extension would require widening Green Valley Road between El Dorado Hills Boulevard and Silva Valley Parkway. The documented queuing currently is utilizing the entire storage space between intersections, but is not exceeding it. This queuing would exceed the storage capacity with future traffic, as well as with the addition of the proposed project. To the extent the cost of this improvement exceeds the project's proportionate fair share, the applicant may be eligible for reimbursement. (SU [until the improvement is constructed] / LTS [after construction of the improvement is completed])
  - **WBT/R:** If this improvement is not constructed with TRANS-5 prior to issuance of the project's first building permit, to accommodate the westbound through queue, an additional westbound through lane shall be provided on Green Valley Road between El Dorado Hills Boulevard and Silva Valley Parkway that is long enough to accommodate the anticipated queuing and other operational considerations. To the extent the cost of this improvement exceeds the project's proportionate fair share, the applicant may be eligible for reimbursement. (SU [until the improvement is constructed] / LTS [after construction of the improvement is completed])
  - **NBT/R:** The northbound through queue extends beyond the next intersection to the south, Timberline Ridge Drive. To prevent blocking of traffic entering and exiting Timberline Ridge Drive, "Keep Clear" markings shall be added to northbound El Dorado Hills Boulevard lanes in front of the Timberline Ridge Drive intersection.

There is approximately 960 feet beyond Timberline Ridge Drive until the next intersection to the south that would accommodate the queue. (LTS)

- **Intersection #12, El Dorado Hills Boulevard/Francisco Drive**
  - **SBT:** The southbound through queue extends beyond the next intersection to the north, Telegraph Hill Road. To prevent blocking of traffic entering and exiting Telegraph Hill Road, "Keep Clear" markings shall be added to southbound El Dorado Hills Boulevard lanes in front of the Telegraph Hill Road intersection. There is approximately 440 feet beyond Telegraph Hill Road until the next intersection to the north that would accommodate the queue. (LTS)

Table IV.C-13: Intersection Queuing Evaluation Results for Select Locations

Intersection/Analysis Scenario	Movement	AM Peak Hour Available Storage (ft)	AM Peak Hour 95th % Queue (ft)	PM Peak Hour Available Storage (ft)	PM Peak Hour 95th % Queue (ft)
#2, Green Valley Road/El Dorado Hills Blvd	**WBL**				
Existing (2013)			99		75
Existing plus Proposed Project (2013)			**276**		**212**
Existing plus Proposed Project (2013) (Mitigated)			**233**		**208**
EPAP (2018)			**169**		**150**
EPAP plus Proposed Project (2018)		105	**242**	105	**203**
EPAP plus Proposed Project (2018) (Mitigated)			**185**		**191**
Cumulative (2025)			**156**		**162**
Cumulative plus Proposed Project (2025)			**210**		**215**
Cumulative plus Proposed Project (2025) (Mitigated)			**131**		**116**
	WBT/R				
Existing (2013)			**996**		514
Existing plus Proposed Project (2013)			**1254**		706
Existing plus Proposed Project (2013) (Mitigated)			**1083**		639
EPAP (2018)			**1390**		764
EPAP plus Proposed Project (2018)		800	**1615**	800	**954**
EPAP plus Proposed Project (2018) (Mitigated)			**1428**		799
Cumulative (2025)			**1660**		**914**
Cumulative plus Proposed Project (2025)			**1885**		**1094**
Cumulative plus Proposed Project (2025) (Mitigated)			**550**		312
	EBL				
Existing (2013)			49		**194**
Existing plus Proposed Project (2013)			50		**239**
Existing plus Proposed Project (2013) (Mitigated)			63		**196**
EPAP (2018)			**93**		**272**
EPAP plus Proposed Project (2018)		85	**93**	85	**272**
EPAP plus Proposed Project (2018) (Mitigated)			**98**		**264**
Cumulative (2025)			**93**		**291**
Cumulative plus Proposed Project (2025)			**93**		**291**
Cumulative plus Proposed Project (2025) (Mitigated)			69		**179**
	EBT				
Existing (2013)			262		870
Existing plus Proposed Project (2013)			319		1289
Existing plus Proposed Project (2013) (Mitigated)			319		1190
EPAP (2018)			351		1386
EPAP plus Proposed Project (2018)		1820	392	1820	1616
EPAP plus Proposed Project (2018) (Mitigated)			358		1515
Cumulative (2025)			373		1333
Cumulative plus Proposed Project (2025)			417		1564
Cumulative plus Proposed Project (2025) (Mitigated)			160		464

Table IV.C-13: Intersection Queuing Evaluation Results for Select Locations

Intersection/Analysis Scenario	Movement	AM Peak Hour Available Storage (ft)	AM Peak Hour 95th % Queue (ft)	PM Peak Hour Available Storage (ft)	PM Peak Hour 95th % Queue (ft)
	NBL				
Existing (2013)		165	58	165	77
Existing plus Proposed Project (2013)			58		91
Existing plus Proposed Project (2013) (Mitigated)			72		92
EPAP (2018)			72		96
EPAP plus Proposed Project (2018)			72		96
EPAP plus Proposed Project (2018) (Mitigated)			74		100
Cumulative (2025)			89		126
Cumulative plus Proposed Project (2025)			89		126
Cumulative plus Proposed Project (2025) (Mitigated)			62		80
	NBT/R				
Existing (2013)		460	107	460	263
Existing plus Proposed Project (2013)			133		**513**
Existing plus Proposed Project (2013) (Mitigated)			170		**517**
EPAP (2018)			179		**570**
EPAP plus Proposed Project (2018)			190		**638**
EPAP plus Proposed Project (2018) (Mitigated)			178		**611**
Cumulative (2025)			179		**633**
Cumulative plus Proposed Project (2025)			190		**699**
Cumulative plus Proposed Project (2025) (Mitigated)			117		364
	SBR				
Existing (2013)		590	67	590	29
Existing plus Proposed Project (2013)			70		53
Existing plus Proposed Project (2013) (Mitigated)			67		52
EPAP (2018)			107		58
EPAP plus Proposed Project (2018)			107		58
EPAP plus Proposed Project (2018) (Mitigated)			70		34
Cumulative (2025)			145		63
Cumulative plus Proposed Project (2025)			146		63
Cumulative plus Proposed Project (2025) (Mitigated)			55		37
	SBT				
Existing (2013)		590	532	590	147
Existing plus Proposed Project (2013)			559		195
Existing plus Proposed Project (2013) (Mitigated)			360 (SBT)		117 (SBT)
EPAP (2018)			703		240
EPAP plus Proposed Project (2018)			708		248
EPAP plus Proposed Project (2018) (Mitigated)			506 (SBT)		163 (SBT)
Cumulative (2025)			837		253
Cumulative plus Proposed Project (2025)			841		261
Cumulative plus Proposed Project (2025) (Mitigated)			295 (SBT)		98 (SBT)
	SBL				
Existing plus Proposed Project (2013) (Mitigated)		240	165	240	98
EPAP plus Proposed Project (2018) (Mitigated)			185		121
Cumulative plus Proposed Project (2025) (Mitigated)			142		81
#3, Green Valley Road/Silva Valley Pkwy	**WBL**				
Existing (2013)		350	96	350	62
Existing plus Proposed Project (2013)			112		74
EPAP (2018)			136		118
EPAP plus Proposed Project (2018)			285		218
Cumulative (2025)			170		173
Cumulative plus Proposed Project (2025)			**357**		286

Table IV.C-13: Intersection Queuing Evaluation Results for Select Locations

Intersection/Analysis Scenario	Movement	AM Peak Hour Available Storage (ft)	AM Peak Hour 95th % Queue (ft)	PM Peak Hour Available Storage (ft)	PM Peak Hour 95th % Queue (ft)
#4, Green Valley Road/Loch Way	**NBL**				
Existing (2013)		380	12	380	11
Existing plus Proposed Project (2013)			20		21
EPAP (2018)			10		13
EPAP plus Proposed Project (2018)			16		24
EPAP plus Proposed Project (2018) (Mitigated)			6		7
Cumulative (2025)			14		17
Cumulative plus Proposed Project (2025)			23		33
Cumulative plus Proposed Project (2025) (Mitigated)			9		9
	NBR				
Existing (2013)		60	1	60	1
Existing plus Proposed Project (2013)			1		1
EPAP (2018)			1		1
EPAP plus Proposed Project (2018)			1		1
EPAP plus Proposed Project (2018) (Mitigated)			1		1
Cumulative (2025)			1		1
Cumulative plus Proposed Project (2025)			1		2
Cumulative plus Proposed Project (2025) (Mitigated)			1		2
#7, Green Valley Road/Deer Valley Road	**NBLTR**				
Existing (2013)		215	8	215	10
Existing plus Proposed Project (2013)			9		12
EPAP (2018)			10		14
EPAP plus Proposed Project (2018)			11		17
Cumulative (2025)			17		29
Cumulative plus Proposed Project (2025)			20		36
Cumulative plus Proposed Project (2025) (Mitigated)			28		29
	SBLTR				
Existing (2013)		645	17	645	11
Existing plus Proposed Project (2013)			19		13
EPAP (2018)			17		9
EPAP plus Proposed Project (2018)			19		11
Cumulative (2025)			24		14
Cumulative plus Proposed Project (2025)			27		17
Cumulative plus Proposed Project (2025) (Mitigated)			32		23
	EBL				
Cumulative plus Proposed Project (2025) (Mitigated)		100	4	100	12
	EBTR				
Cumulative plus Proposed Project (2025) (Mitigated)		1865	71	1865	211
	WBL				
Cumulative plus Proposed Project (2025) (Mitigated)		100	5	100	11
	WBTR				
Cumulative plus Proposed Project (2025) (Mitigated)		3130	157	3130	93
#12, El Dorado Hills Blvd/Francisco Drive	**NBL**				
Existing (2013)		95	**300**	95	**447**
Existing plus Proposed Project (2013)			**327**		**447**
Existing plus Proposed Project (2013) (Mitigated)			**327**		**457**
EPAP (2018)			**368**		**485**
EPAP plus Proposed Project (2018)			**368**		**485**
Cumulative (2025)			**368**		**485**
Cumulative plus Proposed Project (2025)			**368**		**485**

Table IV.C-13: Intersection Queuing Evaluation Results for Select Locations

Intersection/Analysis Scenario	Movement	AM Peak Hour		PM Peak Hour	
		Available Storage (ft)	95th % Queue (ft)	Available Storage (ft)	95th % Queue (ft)
NBT					
Existing (2013)			96		265
Existing plus Proposed Project (2013)			169		360
Existing plus Proposed Project (2013) (Mitigated)			169		368
EPAP (2018)		890	166	890	353
EPAP plus Proposed Project (2018)			175		381
Cumulative (2025)			170		357
Cumulative plus Proposed Project (2025)			179		385
SBL					
Existing (2013)			104		9
Existing plus Proposed Project (2013)			**139**		9
Existing plus Proposed Project (2013) (Mitigated)			**113**		8
EPAP (2018)		105	**113**	105	8
EPAP plus Proposed Project (2018)			**113**		8
Cumulative (2025)			**117**		8
Cumulative plus Proposed Project (2025)			**117**		8
SBT					
Existing (2013)			207		157
Existing plus Proposed Project (2013)			**387**		219
Existing plus Proposed Project (2013) (Mitigated)			**315**		200
EPAP (2018)		300	**324**	300	185
EPAP plus Proposed Project (2018)			**350**		201
Cumulative (2025)			**326**		185
Cumulative plus Proposed Project (2025)			**352**		201
EBLTR					
Existing (2013)		2285	488	2285	459
Existing plus Proposed Project (2013)			488		459
EBLT					
Existing plus Proposed Project (2013) (Mitigated)			46		38
EPAP (2018)			46		38
EPAP plus Proposed Project (2018)		100	46	100	38
Cumulative (2025)			48		38
Cumulative plus Proposed Project (2025)			48		38
EBR					
Existing plus Proposed Project (2013) (Mitigated)			410		407
EPAP (2018)			439		450
EPAP plus Proposed Project (2018)		2285	439	2285	450
Cumulative (2025)			439		450
Cumulative plus Proposed Project (2025)			439		450
WBL/T/R					
Existing (2013)			**240**		**140**
Existing plus Proposed Project (2013)			**240**		**140**
Existing plus Proposed Project (2013) (Mitigated)			**136**		92
EPAP (2018)		110	**137**	110	93
EPAP plus Proposed Project (2018)			**137**		93
Cumulative (2025)			**145**		97
Cumulative plus Proposed Project (2025)			**145**		97

Table IV.C-13: Intersection Queuing Evaluation Results for Select Locations

Intersection/Analysis Scenario	Movement	AM Peak Hour Available Storage (ft)	AM Peak Hour 95th % Queue (ft)	PM Peak Hour Available Storage (ft)	PM Peak Hour 95th % Queue (ft)
#17, El Dorado Hills Blvd/US-50 WB Ramps	**WBR[a]**				
Existing (2013)		185	57	185	**360**
Existing plus Proposed Project (2013)			63		**431**
Existing plus Proposed Project (2013) (Mitigated)			95		**336**
EPAP (2018) [a]					
EPAP plus Proposed Project (2018) [a]					
Cumulative (2025) [a]					
Cumulative plus Proposed Project (2025) [a]					
	SBR				
Existing (2013)		100[c]	**123**	100[c]	**201**
Existing plus Proposed Project (2013)			**204**		**107**
Existing plus Proposed Project (2013) (Mitigated)			0 (free)		0 (free)
EPAP (2018) [b]			0 (free)		0 (free)
EPAP plus Proposed Project (2018) [b]			0 (free)		0 (free)
Cumulative (2025) [b]			0 (free)		0 (free)
Cumulative plus Proposed Project (2025) [b]			0 (free)		0 (free)
#18, Latrobe Road/US/50 EB Ramps	**SBL**				
Existing (2013)		350	140	350	88
Existing plus Proposed Project (2013)			161		98
EPAP (2018)			312		259
EPAP plus Proposed Project (2018)			301		250
Cumulative (2025)			181		**579**
Cumulative plus Proposed Project (2025)			181		**579**
#19, Silva Valley Pkwy/US-50 EB Ramps	**EBL**				
Existing (2013)		750		750	
Existing plus Proposed Project (2013)					
EPAP (2018)			183		349
EPAP plus Proposed Project (2018)			204		390
Existing plus Proposed Project (2018) (Mitigated)			204		402
Cumulative (2025)			305		455
Cumulative plus Proposed Project (2025)			318		503
	NBL				
Existing (2013)		350		350	
Existing plus Proposed Project (2013)					
EPAP (2018)			207		**390**
EPAP plus Proposed Project (2018)			207		**390**
Existing plus Proposed Project (2018) (Mitigated)			N/A		N/A
Cumulative (2025)			**375**		**584**
Cumulative plus Proposed Project (2025)			**375**		**584**
#20, Silva Valley Pkwy/US-50 WB Ramps	**WBR**				
Existing (2013)		700		700	
Existing plus Proposed Project (2013)					
EPAP (2018)			121		465
EPAP plus Proposed Project (2018)			132		496
Cumulative (2025)			304		637
Cumulative plus Proposed Project (2025)			314		663
	SBR				
Existing (2013)		85		85	
Existing plus Proposed Project (2013)					
EPAP (2018)			24		**132**
EPAP plus Proposed Project (2018)			36		**133**
Cumulative (2025)			0 (free)		0 (free)
Cumulative plus Proposed Project (2025)			0 (free)		0 (free)

Table IV.C-13: Intersection Queuing Evaluation Results for Select Locations

Intersection/Analysis Scenario	Movement	AM Peak Hour Available Storage (ft)	AM Peak Hour 95th % Queue (ft)	PM Peak Hour Available Storage (ft)	PM Peak Hour 95th % Queue (ft)
#24, Silva Valley Pkwy/Appian Way	**NBLTR**				
Existing (2013)			332		394
Existing plus Proposed Project (2013)			338		409
EPAP (2018)			283		467
EPAP plus Proposed Project (2018)		1665	310	1665	549
Cumulative (2025)			369		589
Cumulative plus Proposed Project (2025)			397		671
Cumulative plus Proposed Project (2025) (Mitigated)			203		436
	SBLTR				
Existing (2013)			323		262
Existing plus Proposed Project (2013)			341		271
EPAP (2018)			315		362
EPAP plus Proposed Project (2018)		3500	390	3500	410
Cumulative (2025)			355		387
Cumulative plus Proposed Project (2025)			430		436
Cumulative plus Proposed Project (2025) (Mitigated)			233		564
	EBLTR				
Existing (2013)			146		63
Existing plus Proposed Project (2013)			146		63
EPAP (2018)			108		54
EPAP plus Proposed Project (2018)		390	108	390	54
Cumulative (2025)			133		67
Cumulative plus Proposed Project (2025)			133		67
Cumulative plus Proposed Project (2025) (Mitigated)			41		36
	WBLTR				
Existing (2013)			259		97
Existing plus Proposed Project (2013)			259		97
EPAP (2018)			299		152
EPAP plus Proposed Project (2018)		2025	299	2025	152
Cumulative (2025)			299		152
Cumulative plus Proposed Project (2025)			299		152
Cumulative plus Proposed Project (2025) (Mitigated)			154		76
#26, Green Valley Road/Site Access Dwy	**WBL**				
Existing (2013)					
Existing plus Proposed Project (2013)			12		35
EPAP (2018)		100[a]		100[a]	
EPAP plus Proposed Project (2018)			12		56
Cumulative (2025)					
Cumulative plus Proposed Project (2025)			12		77

[a] Assumed initial geometry.
[b] Becomes SBR at Intersection #16 with interchange reconfiguration.
[c] Intersection approach with available storage length equal to segment length.

Source: *Highway Capacity Manual (HCM) 2000*, methodology per Synchro© v8.

(12) Bicycle and Pedestrian Facilities Evaluation. According to Chapter 5 of the *El Dorado County Bicycle Transportation Plan*,[28] Class II Bike Lanes are proposed for Green Valley Road, Francisco Drive, and El Dorado Hills Boulevard in the vicinity of the project site. In addition, Class III Bike Routes are proposed for Francisco Drive and Salmon Falls Road/Lakehills Drive north of Green Valley Road. A Class I Bike Path is also proposed for El Dorado Hills Boulevard, south of Francisco Drive.

While the project will not result in removal of a bikeway/bike lane or prohibition of implementation of the facilities identified in the Plan, it is required to include pedestrian/bicycle paths connecting to adjacent commercial, research and development, or industrial projects and any schools, parks, or other public facilities. The proposed project will be required to construct on-site roadway and pedestrian facilities in accordance with County design guidelines. These on-site pedestrian and bicycle facilities will connect the project with the future adjacent Class II Bike Lanes along Green Valley Road (by others). Through this connection to the proposed bike lane network, the project will provide continuity with adjacent projects, schools, parks, and other public facilities. Potential project-related impacts to the provision of bicycle and pedestrian facilities would be less than significant.

(13) Secondary Impacts. Secondary impacts associated with the transportation mitigation measures included in this section could occur depending on the final location and design of the improvements. Many mitigation measures described in other sections of this EIR would be applicable to the off-site transportation improvement measures identified within this section. Mitigation Measures AIR-1, AIR-2, and NOI-1 would be applicable to address potential construction-related impacts. Should tree removal be required, Mitigation Measure BIO-1 would require that a qualified biologist survey the area prior to construction. Should cultural resources be discovered during improvement construction, Mitigation Measures CULT-1, CULT-2 and CULT-3 would reduce impacts to a less-than-significant level. With implementation of all mitigation measures identified in this EIR, off-site transportation improvements described in this section would not result in significant environmental impacts.

[28] *El Dorado County Bicycle Transportation Plan*, 2010.

D. AIR QUALITY

This section evaluates potential air quality impacts associated with implementation of the proposed project. It has been prepared using methodologies, assumptions and significance thresholds recommended in the adopted air quality guidelines of the El Dorado County Air Quality Management District (AQMD).[1] In keeping with these guidelines, this section describes existing air quality, impacts of the project on local carbon monoxide (CO) levels, impacts of vehicular emissions that have regional effects, and exposure of sensitive receptors to toxic air contaminants (TACs). Mitigation measures to reduce or eliminate potentially significant air quality impacts are identified, where appropriate. Air quality modeling results are included in Appendix C.

1. Setting

The following discussion provides an overview of existing air quality conditions in the region and El Dorado County. Ambient air quality standards and the regulatory framework are summarized and climate, air quality conditions, and typical air pollutant types and sources are also described.

a. Air Pollutants and Health Effects. Both State and federal governments have established health-based Ambient Air Quality Standards for six criteria air pollutants:[2] carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter (PM). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Long-term exposure to elevated levels of criteria pollutants may result in adverse health effects. However, emission thresholds established by an air district are used to manage total regional emissions within an air basin based on the air basin's attainment status for criteria pollutants. These emission thresholds were established for individual projects that would contribute to regional emissions and pollutant concentrations and could adversely affect or delay the projected attainment target year for certain criteria pollutants.

Because of the conservative nature of the thresholds, and the basin-wide context of individual project emissions, there is no direct correlation between a single project and localized air quality-related health effects. One individual project that generates emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like nitrogen oxides (NO_x) and reactive organic gases (ROG).

Occupants of facilities such as schools, day care centers, parks and playgrounds, hospitals, and nursing and convalescent homes are considered to be more sensitive than the general public to air pollutants because these population groups have increased susceptibility to respiratory disease. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions, compared to commercial and industrial areas, because people generally spend longer periods of time at their residences, with

[1] El Dorado County Air Pollution Control District, 2002. *Guide to Air Quality Assessment*. February.

[2] Criteria pollutants are defined as those pollutants for which the federal and State governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health.

greater associated exposure to ambient air quality conditions. Recreational uses are also considered sensitive compared to commercial and industrial uses due to greater exposure to ambient air quality conditions associated with exercise.

Air pollutants and their health effects, and other air pollution-related considerations are summarized in Table IV.D-1 and are described in more detail below.

Table IV.D-1: Sources and Health Effects of Air Pollutants

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	• Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust. • Natural events, such as decomposition of organic matter.	• Reduced tolerance for exercise. • Impairment of mental function. • Impairment of fetal development. • Death at high levels of exposure. • Aggravation of some heart diseases (angina).
Nitrogen Dioxide (NO_2)	• Motor vehicle exhaust. • High temperature stationary combustion. • Atmospheric reactions.	• Aggravation of respiratory illness. • Reduced visibility. • Reduced plant growth. • Formation of acid rain.
Ozone (O_3)	• Atmospheric reaction of organic gases with nitrogen oxides in sunlight.	• Aggravation of respiratory and cardiovascular diseases. • Irritation of eyes. • Impairment of cardiopulmonary function. • Plant leaf injury.
Lead (Pb)	• Contaminated soil.	• Impairment of blood functions and nerve construction. • Behavioral and hearing problems in children.
Suspended Particulate Matter ($PM_{2.5}$ and PM_{10})	• Stationary combustion of solid fuels. • Construction activities. • Industrial processes. • Atmospheric chemical reactions.	• Reduced lung function. • Aggravation of the effects of gaseous pollutants. • Aggravation of respiratory and cardiorespiratory diseases. • Increased cough and chest discomfort. • Soiling. • Reduced visibility.
Sulfur Dioxide (SO_2)	• Combustion of sulfur-containing fossil fuels. • Smelting of sulfur-bearing metal ores. • Industrial processes.	• Aggravation of respiratory diseases (asthma, emphysema). • Reduced lung function. • Irritation of eyes. • Reduced visibility. • Plant injury. • Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: California Air Resources Board (ARB), 2012.

(1) Ozone. Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving ROG and NO_x. The main sources of ROG and NO_x, often referred to as ozone precursors, are combustion processes (including combustion in motor vehicle engines) and the evaporation of solvents, paints, and fuels. In El Dorado County, automobiles are the single largest source of ozone precursors. Ozone is referred to as a regional air pollutant because its precursors are transported and diffused by wind concurrently with ozone production through the photochemical reaction process. Ozone causes eye irritation, airway constriction, and shortness of breath and can aggravate existing respiratory diseases such as asthma, bronchitis, and emphysema.

(2) Carbon Monoxide. CO is an odorless, colorless gas usually formed as the result of the incomplete combustion of fuels. The single largest source of CO is motor vehicles. While CO transport is limited, it disperses with distance from the source under normal meteorological conditions. However, under certain extreme meteorological conditions, CO concentrations near congested roadways or intersections may reach unhealthful levels that adversely affect local sensitive receptors (e.g., residents, schoolchildren, the elderly, and hospital patients). Typically, high CO concentrations are associated with roadways or intersections operating at unacceptable levels of service (LOS) or with extremely high traffic volumes. Exposure to high concentrations of CO reduces the oxygen-carrying capacity of the blood and can cause headaches, nausea, dizziness, and fatigue, impair central nervous system function, and induce angina (chest pain) in persons with serious heart disease. Extremely high levels of CO, such as those generated when a vehicle is running in an unventilated garage, can be fatal.

(3) Particulate Matter. Particulate matter is a class of air pollutants that consists of heterogeneous solid and liquid airborne particles from manmade and natural sources. Particulate matter is categorized in two size ranges: PM_{10} for particles less than 10 microns in diameter and $PM_{2.5}$ for particles less than 2.5 microns in diameter. In El Dorado County, motor vehicles generate about half of the air basin's particulates, through tailpipe emissions as well as brake pad and tire wear. Wood burning in fireplaces and stoves, industrial facilities, and ground-disturbing activities such as construction are other sources of such fine particulates. These fine particulates are small enough to be inhaled into the deepest parts of the human lung and can cause adverse health effects. According to the California Air Resources Board (ARB), studies in the United States and elsewhere have demonstrated a strong link between elevated particulate levels and premature deaths, hospital admissions, emergency room visits, and asthma attacks, and studies of children's health in California have demonstrated that particle pollution may significantly reduce lung function growth in children. The ARB also reports that Statewide attainment of particulate matter standards could prevent thousands of premature deaths, lower hospital admissions for cardiovascular and respiratory disease and asthma-related emergency room visits, and avoid hundreds of thousands of episodes of respiratory illness in California.[3]

(4) Nitrogen Dioxide. NO_2 is a reddish brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. NO_2 may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. NO_2 decreases lung function and may reduce resistance to infection. On January 22, 2010, the U.S. Environmental Protection Agency (U.S. EPA) strengthened the health-based National Ambient Air Quality Standards (NAAQS) for NO_2.

(5) Sulfur Dioxide. SO_2 is a colorless acidic gas with a strong odor. It is produced by the combustion of sulfur-containing fuels such as oil, coal, and diesel. SO_2 has the potential to damage materials and can cause health effects at high concentrations. It can irritate lung tissue and increase the risk of acute and chronic respiratory disease. SO_2 also reduces visibility and the level of sunlight at the ground surface.

[3] California Air Resources Board, 2011. *Fact Sheets*. Website: www.arb.ca.gov/htm/fslist.htm#Health.pdf. October.

(6) Lead. Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery factories.

Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the U.S. EPA established national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. The U.S. EPA banned the use of leaded gasoline in highway vehicles in December 1995. As a result of the U.S. EPA's regulatory efforts to remove lead from gasoline, emissions of lead from the transportation sector and overall levels of lead in the air decreased dramatically.

(7) Odors. Odors are also an important element of local air quality conditions. Specific activities can raise concerns related to odors on the part of nearby neighbors. Major sources of odors include restaurants and manufacturing plants. Other odor producers include the industrial facilities within the region. While sources that generate objectionable odors must comply with air quality regulations, the public's sensitivity to locally-produced odors often exceeds regulatory thresholds.

(8) Toxic Air Contaminants. In addition to the criteria pollutants discussed above, Toxic Air Contaminants (TACs) are another group of pollutants of concern. Some examples of TACs include: benzene, butadiene, formaldehyde, and hydrogen sulfide. Potential human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

TACs do not have ambient air quality standards, but are regulated by the U.S. EPA, ARB, and the El Dorado County AQMD. In 1998, ARB identified particulate matter from diesel-fueled engines as a TAC. ARB has completed a risk management process that identified potential cancer risks for a range of activities and land uses that are characterized by use of diesel-fueled engines.[4] High-volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (distribution centers, truck stops) were identified as posing the highest risk to adjacent receptors. Other facilities associated with increased risk include warehouse distribution centers, large retail or industrial facilities, high volume transit centers, and schools with a high volume of bus traffic. Health risks from TACs are a function of both concentration and duration of exposure.

It is important to note that TACs are not considered criteria air pollutants and thus are not specifically addressed through the setting of ambient air quality standards. Instead, the U.S. EPA and the ARB regulate TACs through statutes and regulations that generally require the use of the maximum or best available control technology to limit emissions.

[4] California Air Resources Board, 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October.

(9) Naturally Occurring Asbestos. In addition to criteria pollutants, a pollutant of concern in the vicinity of the project site is naturally occurring asbestos (NOA). Emissions of NOA have been attributed to soil-disturbing activities, including construction activities. Naturally occurring asbestos has been identified as a TAC by the ARB, however, a quantitative significance thresholds for NOA has not been established.

The El Dorado County AQMD issued a map that can be used as a screening-level indicator of the likelihood of NOA being present on any given project site. The Asbestos Review Areas map shows the location of individual parcels and areas within the following four categories considered to be subject to elevated risk of containing NOA: 1) Found Area of NOA; 2) Quarter Mile Buffer for Found Area of NOA; 3) More Likely to Contain Asbestos; and 4) Quarter Mile Buffer for More Likely to Contain Asbestos or Fault Line. The AQMD Asbestos Review Areas map, as it applies to the project site, can be seen in Figure IV.D-1.

If a project site is located outside of all four areas listed above, it may be considered to have a relatively lower probability of containing NOA and will be considered to have a less-than-significant impact. However, if the project is located within one of the above categories, the El Dorado County AQMD Rule 223-2 requires an Asbestos Dust Mitigation Plan when more than 20 cubic yards of earth will be moved at a site identified as being in an Asbestos Review Area.

As previously described, El Dorado County AQMD has regulations applicable to NOA, while the State regulates NOA through the State of California Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations,[5] which addresses asbestos-containing fugitive dust generated by construction and construction-related activities at the State level.

(10) High Volume Roadways. Air pollutant exposures and their associated health burdens vary considerably within places in relation to sources of air pollution. Motor vehicle traffic is perhaps the most important source of intra-urban spatial variation in air pollution concentrations. Air quality research consistently demonstrates that pollutant levels are substantially higher near freeways and busy roadways, and human health studies have consistently demonstrated that children living within 100 to 200 meters (328 to 656 feet) of freeways or busy roadways have reduced lung function and higher rates of respiratory disease. At present, it is not possible to attribute the effects of roadway proximity on non-cancer health effects to one or more specific vehicle types or vehicle pollutants. Engine exhaust, from diesel, gasoline, and other combustion engines, is a complex mixture of particles and gases, with collective and individual toxicological characteristics.

Federal and State regulations control air pollutants at the regional level by limiting vehicle and stationary source emissions. However, air quality regulations have not limited the use of vehicles and generally have not protected sensitive land uses from air pollution "hot spots" associated with proximity to transportation facilities.

[5] California Air Resources Board, 2008. *State of California Asbestos Airborne Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations.* July 29.

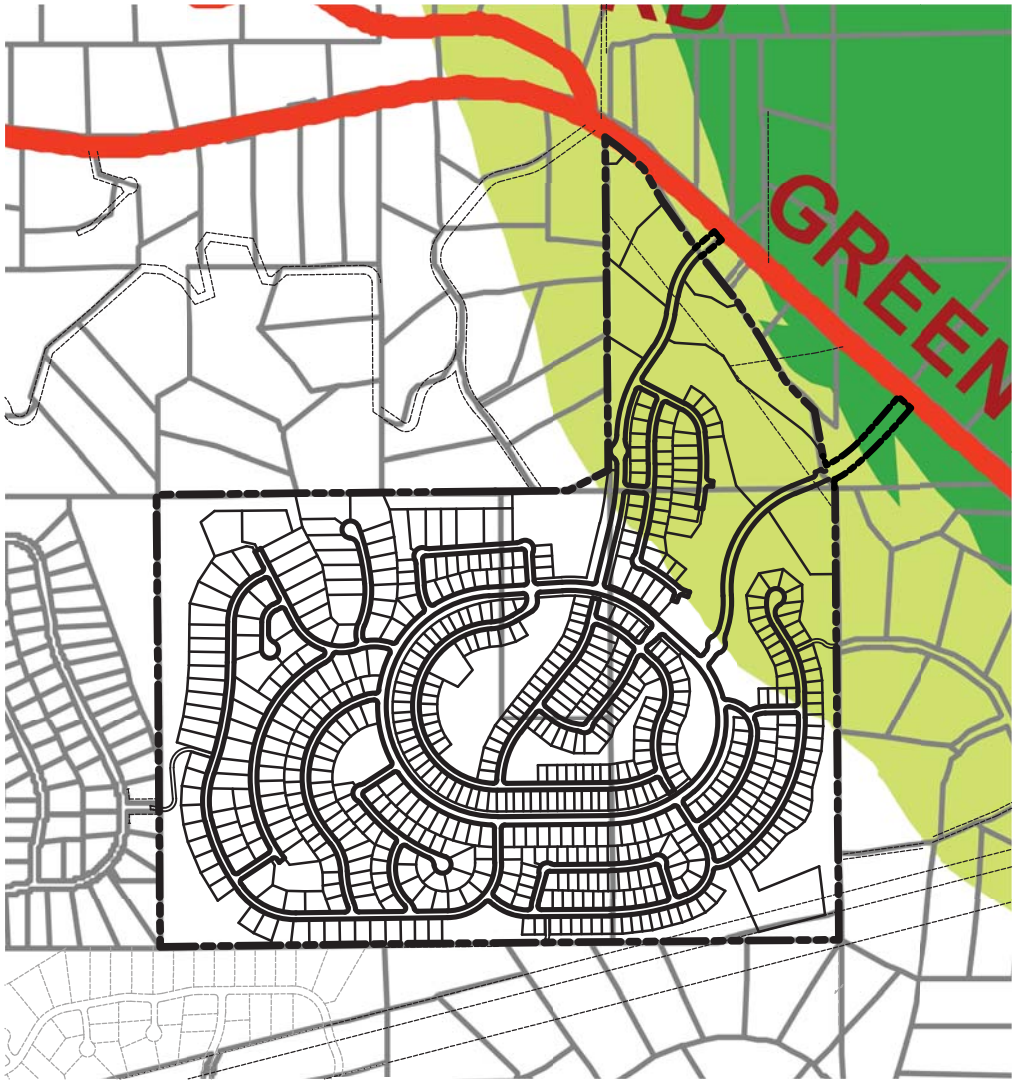
b. Existing Climate and Air Quality. The following provides a discussion of the local and regional air quality and climate in the El Dorado County area.

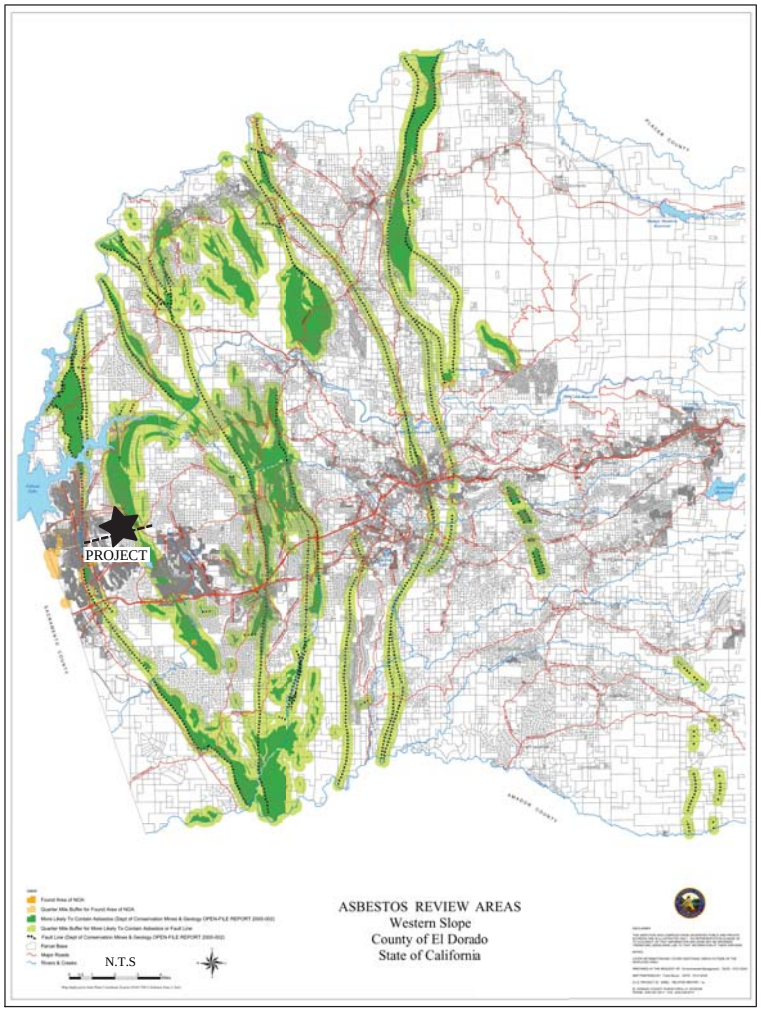
(1) Local and Regional Air Quality and Climate. El Dorado County has two distinct air quality settings, which have been recognized formally by the division of the County into two separate air basins, the Mountain Counties Air Basin and the Lake Tahoe Air basin. The Mountain Counties Air Basin (MCAB) is comprised of Plumas, Sierra, Nevada, Placer (middle portion), El Dorado (western portion), Amador, Calaveras, Tuolumne, and Mariposa counties. The Dixon Ranch Residential Project is located in El Dorado Hills in western El Dorado County and is therefore, within the MCAB.

The basin lies along the northern Sierra Nevada mountain range, close to or contiguous with the Nevada border, and covers an area of roughly 11,000 square miles. The western slope of El Dorado County, from Lake Tahoe on the east to the Sacramento County boundary on the west, lies within the MCAB. Elevations range from over 10,000 feet at the Sierra crest down to several hundred feet above sea level at the Sacramento County boundary. Throughout the County, the topography is highly variable, and includes rugged mountain peaks and valleys with extreme slopes and differences in altitude in the Sierras, as well as rolling foothills to the west.

The general climate of the MCAB varies considerably with elevation and proximity to the Sierra ridge. The terrain features of the basin make it possible for various climates to exist in relatively close proximity. The pattern of mountains and hills causes a wide variation in rainfall, temperature, and localized winds throughout the basin. Temperature variations have an important influence on basin wind flow, dispersion along mountain ridges, vertical mixing, and photochemistry. The Sierra Nevada receives large amounts of precipitation from storms moving in from the Pacific in the winter, with lighter amounts from intermittent “Monsoonal” moisture flows from the south and cumulus buildup in the summer. Precipitation levels are high in the highest mountain elevations but decline rapidly toward the western portion of the basin. Winter temperatures in the mountains can be below freezing for weeks at a time, and substantial depths of snow can accumulate, but in the western foothills, winter temperatures usually dip below freezing only at night and precipitation is mixed as rain or light snow. In the summer, temperatures in the mountains are mild, with daytime peaks in the 70s to low 80s F, but the western end of the County can routinely exceed 100 degrees Fahrenheit.

From an air quality perspective, the topography and meteorology of the MCAB combine such that local conditions predominate in determining the effect of emissions in the basin. Regional airflows are affected by the mountains and hills, which direct surface air flows, cause shallow vertical mixing, and create areas of high pollutant concentrations by hindering dispersion. Inversion layers, where warm air overlays cooler air, frequently occur and trap pollutants close to the ground. In the winter, these conditions can lead to CO “hotspots” along heavily traveled roads and at busy intersections. During summer’s longer daylight hours, stagnant air, high temperatures, and plentiful sunshine provide the conditions and energy for the photochemical reaction between reactive organic compounds (ROG) and oxides of nitrogen (NO_x) that results in the formation of ozone. Because of its long formation time, ozone is a regional pollutant rather than a local hotspot problem.





LSA

FIGURE IV.D-1

Found Area of NOA
Quarter Mile Buffer for Found Area of NOA
More Likely To Contain Asbestos (Dept of Conservation Mines & Geology OPEN-FILE REPORT 2000-002)
Quarter Mile Buffer for More Likely To Contain Asbestos or Fault Line
Fault Line (Dept of Conservation Mines & Geology OPEN-FILE REPORT 2000-002)
Parcel Base
Major Roads
Rivers & Creeks

0 400 800
FEET

N

SOURCE: CTA, MARCH 2014.

Dixon Ranch Residential Project EIR
Asbestos Areas, El Dorado County

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In the summer, the strong upwind valley air flowing into the basin from the Central Valley to the west is an effective transport medium for ozone precursors and ozone generated in the Bay Area and the Sacramento and San Joaquin Valleys. These transported pollutants predominate as the cause of ozone in the MCAB and are largely responsible for the exceedances of the State and federal ozone AAQS in the MCAB. The ARB has officially designated the MCAB as "ozone impacted" by transport from those areas.

(2) Monitoring Data. The ARB operates the regional air quality monitoring network that regularly measures the concentrations of the five major criteria air pollutants.

Pollutant monitoring results for the years 2010 to 2012 at the El Dorado County and Mountain Counties Air Basin air quality monitoring stations indicate that air quality in the project area has generally been moderate. Table IV.D-2 summarizes the last three years of published data from this monitoring station. There were 7 recorded exceedances of the State 1-hour ozone standard in 2010, 13 recorded exceedances in both 2011, and 9 exceedances in 2012 in El Dorado County. There were 28 exceedances of the State 8-hour ozone standard recorded in 2010, 41 exceedances in 2011, and 62 exceedances in 2012. Also, the federal 8-hour ozone standard was exceeded 10 times in 2010, 25 times in 2011, and 22 times in 2012. There were 2 exceedances of the State PM_{10} standard recorded in 2010, 1 exceedance in 2011, but no exceedances in 2012. However, there was an exceedance of the State annual arithmetic standard for PM_{10} recorded in 2010. Additionally, there were 3 exceeedances recorded in 2010, 5 recorded in 2011, and 4 recorded in 2012 of the federal $PM_{2.5}$ standard. There was also an exceedance of the State and federal annual arithmetic standard for $PM_{2.5}$ in 2012. Finally, there were no recorded exceedances of standards for CO, SO_2, and NO_2 in this area during the 3-year period.

c. Air Quality Standards, Attainment Status and Regulatory Framework. This section describes State and federal air quality standards for criteria air pollutants and describes the air regulatory framework. It also describes the region's attainment status.

(1) Air Quality Standards. Both the State and federal governments have established health-based Ambient Air Quality Standards for six air pollutants: CO, ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter (PM). Pursuant to the FCAA of 1970, the U.S. EPA established the National Ambient Air Quality Standards (NAAQS). The NAAQS were established for major pollutants, termed "criteria" pollutants. Criteria pollutants are defined as those pollutants for which the federal and State governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health.
In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. These ambient air quality standards are levels of contaminants that avoid specific adverse health effects associated with each pollutant.

Federal standards include both primary and secondary standards. Primary standards establish limits to protect public health, including the health of sensitive populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, and damage to animals, crops, vegetation and buildings. State and federal standards for the criteria air pollutants are listed in Table IV.D-3.

California Ambient Air Quality Standards (CAAQS) and National Ambient Air Quality Standards (NAAQS) for the criteria air pollutants are listed in Table IV.D-3.

Table IV.D-2: Ambient Air Quality at the El Dorado and Mountain Counties Air Basin Monitoring Stations

Pollutant	Standard	2010	2011	2012
Carbon Monoxide (CO)[a]				
Maximum 1 hour concentration (ppm)		3.1	2.3	2.1
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8 hour concentration (ppm)		1.2	1.9	1.7
Number of days exceeded:	State: > 9 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Ozone (O_3)				
Maximum 1 hour concentration (ppm)		0.112	0.108	0.117
Number of days exceeded:	State: > 0.09 ppm	7	13	9
Maximum 8 hour concentration (ppm)		0.102	0.094	0.096
Number of days exceeded:	State: > 0.07 ppm	28	41	62
	Federal: > 0.075 ppm	10	25	22
Coarse Particulates (PM_{10})				
Maximum 24 hour concentration ($\mu g/m^3$)		74.3	54.3	43.8
Number of days exceeded:	State: > 50 $\mu g/m^3$	2	1	0
	Federal: > 150 $\mu g/m^3$	0	0	0
Annual arithmetic average concentration ($\mu g/m^3$)		20.3	ND	13.7
Exceeded for the year:	State: > 20 $\mu g/m^3$	Yes	ND	No
	Federal: > 50 $\mu g/m^3$	No	ND	No
Fine Particulates ($PM_{2.5}$)				
Maximum 24 hour concentration ($\mu g/m^3$)		38.2	58.6	44.8
Number of days exceeded:	Federal: > 35 $\mu g/m^3$	3	5	4
Annual arithmetic average concentration ($\mu g/m^3$)		14	14	23.0
Exceeded for the year:	State: > 12 $\mu g/m^3$	Yes	Yes	Yes
	Federal: > 12 $\mu g/m^3$	No	No	Yes
Nitrogen Dioxide (NO_2)				
Maximum 1 hour concentration (ppm)		0.033	0.028	ND
Number of days exceeded:	State: > 0.25 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.004	ND	ND
Exceeded for the year:	Federal: > 0.053 ppm	No	No	No
Sulfur Dioxide (SO_2)[b]				
Maximum 1 hour concentration (ppm)		0.003	0.005	0.004
Number of days exceeded:	State: > 0.25 ppm	0	0	0
Maximum 3 hour concentration (ppm)		ND	ND	ND
Number of days exceeded:	Federal: > 0.5 ppm	ND	ND	ND
Maximum 24 hour concentration (ppm)		0.002	0.001	0.001
Number of days exceeded:	State: > 0.04 ppm	0	0	0
	Federal: > 0.14 ppm	0	0	0
Annual arithmetic average concentration (ppm)		ND	ND	ND
Exceeded for the year:	Federal: > 0.030 ppm	ND	ND	ND

[a] Monitoring results are taken from the 7823 Blackfoot Way, North Highlands, Sacramento monitoring station.
[b] Monitoring results are taken from the Del Paso-2701 Avalon Drive, Sacramento monitoring station.

ppm = parts per million
$\mu g/m^3$ = micrograms per cubic meter
ND = No data. There was insufficient (or no) data to determine the value.

Source: California ARB and U.S. EPA, 2013.

Table IV.D-3: State and Federal Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]		Federal Standards[b]		
		Concentration[c]	Method[d]	Primary[c,e]	Secondary[c,f]	Method[g]
Ozone (O_3)	1-Hour	0.09 ppm (180 µg/m^3)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.070 ppm (137 µg/m^3)		0.075 ppm (147 µg/m^3)		
Respirable Particulate Matter (PM_{10})[h]	24-Hour	50 µg/m^3	Gravimetric or Beta Attenuation	150 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m^3		–		
Fine Particulate Matter ($PM_{2.5}$)[h]	24-Hour	No Separate State Standard		35 µg/m^3	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m^3	Gravimetric or Beta Attenuation	12.0 µg/m^3	15 µg/m^3	
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m^3)	None	Non-Dispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m^3)		35 ppm(40 mg/m^3)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		–	–	–
Nitrogen Dioxide (NO_2)[i]	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	Gas Phase Chemiluminescence	0.053 ppm (100 µg/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1-Hour	0.18 ppm (339 µg/m^3)		100 ppb (188 µg/m^3)	–	
Sulfur Dioxide (SO_2)[j]	Annual Arithmetic Mean	–	Ultraviolet Fluorescence	0.030 ppm (for certain areas)[i]	–	Ultraviolet Fluorescence; Spectrophotometry (Pararosaniline Method)
	24-Hour	0.04 ppm (105 µg/m^3)		0.14 ppm (for certain areas)[i]	–	
	3-Hour	–		–	0.5 ppm (1300 µg/m^3)	
	1-Hour	0.25 ppm (655 µg/m^3)		75 ppb (196 µg/m^3)	–	
Lead[k,l]	30-Day Average	1.5 µg/m^3	Atomic Absorption	–	–	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 µg/m^3	Same as Primary Standard	
	Rolling 3-Month Average[k]	–		0.15 µg/m^3		
Visibility-Reducing Particles[m]	8-Hour	See footnote m	Beta Attenuation and Transmittance through Filter Tape	**No Federal Standards**		
Sulfates	24-Hour	25 µg/m^3	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[k]	24-Hour	0.01 ppm (26 µg/m^3)	Gas Chromatography			

[a] California standards for O_3; CO (except Lake Tahoe); SO_2 (1- and 24-hour); NO_2; suspended particulate matter – PM_{10}, $PM_{2.5}$ and visibility reducing particles – are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than O_3, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once per year. The O_3 standard is attained when the fourth-highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the EPA for further clarification and current Federal policies.

Table notes continued on next page.

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

[d] Any equivalent procedure which can be shown to the satisfaction of ARB to give equivalent results at or near the level of the air quality standard may be used.

[e] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

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

[g] Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

[h] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 $\mu g/m^3$ to 12.0 $\mu g/m^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 $\mu g/m^3$, as was the annual secondary standard of 15 $\mu g/m^3$. The existing 24-hour PM_{10} standards (primary and secondary) of 150 $\mu g/m^3$ also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[i] To attain the 1-hour standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum 1-hour average at each monitor within an area must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[j] On June 2, 2010, the new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

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

[l] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 $\mu g/m^3$ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standards are approved.

[m] In 1989, the ARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basins, respectively.

°C = degrees Celsius
ARB = California Air Resources Board
EPA = United States Environmental Protection Agency
$\mu g/m^3$ = micrograms per cubic meter
mg/m^3 = milligrams per cubic meter
ppm = parts per million
ppb = parts per billion
Source: California Air Resources Board, June 2013.

(2) Attainment Status Designation. The ARB is required to designate areas of the State as attainment, non-attainment or unclassified for any State standard. An "attainment" designation for an area signifies that pollutant concentrations did not violate pollutant standards. A "non-attainment" designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An "unclassified" designation signifies that data does not support either an attainment or nonattainment status. The law divides districts into moderate, serious and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The U.S. EPA designates areas for ozone, CO, and NO_2 as either "does not meet the primary standards," or "cannot be classified" or "is better than national standards." For SO_2, areas are designated as "does not meet the primary standards," "does not meet the secondary standards," "cannot be classified" or "is better than national standards." In 1991, new nonattainment designations were assigned to areas for PM_{10} based on the likelihood that they would violate national PM_{10} standards. All other areas are designated "unclassified." Table IV.D-4 provides a summary of the attainment status for El Dorado County with respect to national and State ambient air quality standards. The table indicates that the El Dorado County AQMD does not meet CAAQS or NAAQS for ground level ozone, nor State standards for PM_{10} and national standards for $PM_{2.5}$.

(3) Regulatory Framework. Air quality standards, the regulatory framework, and State and federal attainment status are discussed below. The U.S. EPA and ARB regulate direct emissions from motor vehicles. The El Dorado County AQMD is primarily responsible for regulating air pollution emissions from stationary sources (e.g., factories) and indirect sources (e.g., traffic associated with new development), as well as for monitoring ambient pollutant concentrations.

United States Environmental Protection Agency. At the federal level, the U.S. EPA has been charged with implementing national air quality programs. U.S. EPA's air quality mandates are drawn primarily from the Federal Clean Air Act (FCAA), which was enacted in 1963. The FCAA was amended in 1970, 1977, and 1990.

The FCAA required U.S. EPA to establish primary and secondary NAAQS and required each State to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The Federal Clean Air Act Amendments of 1990 (FCAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. U.S. EPA has responsibility to review all state SIPs to determine conformity with the mandates of the FCAAA and determine if implementation will achieve air quality goals. If the U.S. EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area, which imposes additional control measures. Failure to submit an approvable SIP, or to implement the plan within the mandated timeframe, may result in sanctions on transportation funding and stationary air pollution sources in the air basin.

The U.S. EPA is also required to develop National Emission Standards for Hazardous Air Pollutants, which are defined as those which may reasonably be anticipated to result in increased deaths or serious illness and which are not already regulated. An independent science advisory board reviews the health and exposure analyses conducted by the U.S. EPA on suspected hazardous pollutants prior to regulatory development.

Table IV.D-4: El Dorado County Attainment Status

Pollutant	Averaging Time	California Standards [a]		National Standards [b]	
		Concentration	Attainment Status	Concentration[c,g]	Attainment Status
Ozone (O_3)	8-Hour	0.070 ppm (137µg/m^3)	Nonattainment[f]	0.075 ppm	Nonattainment
	1-Hour	0.09 ppm (180 µg/m^3)	Nonattainment	Not Applicable	Not Applicable[d]
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Unclassified	9 ppm (10 mg/m^3)	Unclassified/ Attainment
	1-Hour	20 ppm (23 mg/m^3)	Unclassified	35 ppm (40 mg/m^3)	Unclassified/ Attainment
Nitrogen Dioxide (NO_2)	1-Hour	0.18 ppm (339 µg/m^3)	Attainment	0.100 ppm	Unclassified/ Attainment
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	Not applicable	0.053 ppm (100 µg/m^3)	Unclassified/ Attainment
Sulfur Dioxide (SO_2)	24-Hour	0.04 ppm (105 µg/m^3)	Attainment	0.14 ppm (365 µg/m^3)	Unclassified
	1-Hour	0.25 ppm (655 µg/m^3)	Attainment	Not applicable	Not Applicable
	Annual Arithmetic Mean	Not Applicable	Not applicable	0.030 ppm (80 µg/m^3)	Unclassified
Particulate Matter - Coarse (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	Nonattainment[e]	Not Applicable	Not Applicable
	24-Hour	50 µg/m^3	Nonattainment	150 µg/m^3	Unclassified
Particulate Matter - Fine ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	Unclassified[e]	15 µg/m^3	Nonattainment
	24-Hour	Not Applicable	Not applicable	35 µg/m^3	Nonattainment

[a] California standards for ozone, carbon monoxide (except in the Lake Tahoe air basin), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter – PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM_{10} annual standard), then some measurements may be excluded. In particular, measurements are excluded that ARB determines would occur less than once per year on average. The Lake Tahoe CO standard is 6.0 ppm, a level one-third the national standard and two-thirds the State standard.

[b] National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent 3-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than 1. The 8-hour ozone standard is attained when the 3-year average of the fourth highest daily concentrations is 0.075 ppm (75 ppb) or less. The 24-hour PM_{10} standard is attained when the 3-year average of the 99th percentile of monitored concentrations is less than 150 µg/m^3. The 24-hour $PM_{2.5}$ standard is attained when the 3-year average of 98th percentiles is less than 35 µg/m^3. Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM_{10} is met if the 3-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the 3-year average of annual averages spatially-averaged across officially-designed clusters of sites falls below the standard.

[c] National air quality standards are set by U.S. EPA at levels determined to be protective of public health with an adequate margin of safety.

[d] The national 1-hour ozone standard was revoked by U.S. EPA on June 15, 2005.

Table notes continued on next page.

[e] In June 2002, ARB established new annual standards for $PM_{2.5}$ and PM_{10}.

[f] The 8-hour California ozone standard was approved by the ARB on April 28, 2005 and became effective on May 17, 2006.

[g] To attain this standard, the 3-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010).

Lead (Pb) is not listed in the above table because it has been in attainment since the 1980s.
ppm = parts per million
mg/m^3 = milligrams per cubic meter
$\mu g/m^3$ = micrograms per cubic meter

Source: Air Resources Board, 2013.

California Air Resources Board. The ARB is the agency responsible for the coordination and oversight of State and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA), adopted in 1988. The CCAA requires that all air districts in the State achieve and maintain the California Ambient Air Quality Standards (CAAQS) by the earliest practical date. The CCAA specifies that districts should focus on reducing the emissions from transportation and air-wide emission sources, and provides districts with the authority to regulate indirect sources.

ARB is also primarily responsible for developing and implementing air pollution control plans to achieve and maintain the NAAQS. ARB is primarily responsible for Statewide pollution sources and produces a major part of the SIP. Local air districts provide additional strategies for sources under their jurisdiction. ARB combines this data and submits the completed SIP to U.S. EPA.

Other ARB duties include monitoring air quality (in conjunction with air monitoring networks maintained by air pollution control and air quality management districts), establishing CAAQS (which in many cases are more stringent than the NAAQS), determining and updating area designations and maps, and setting emissions standards for mobile sources, consumer products, small utility engines, and off-road vehicles. The ARB's Diesel Risk Reduction Plan[6] is intended to substantially reduce diesel particulate matter emissions and associated health risks through introduction of ultra-low-sulfur diesel fuel – a step already implemented – and cleaner-burning diesel engines.

Because of the robust evidence relating proximity to roadways and a range of non-cancer and cancer health effects, the ARB also created guidance for avoiding air quality conflicts in land use planning in its Air Quality and Land Use Handbook: A Community Health Perspective.[7] In its guidance, the ARB advises that new sensitive uses (e.g. residences, schools, day care centers, playgrounds, and hospitals) not be located within 500 feet of a freeway or urban roads carrying 100,000 vehicles per day, or within 1,000 feet of a distribution center (warehouse) that accommodates more than 100 trucks or more than 90 refrigerator trucks per day.

[6] California Air Resources Board, 2000. Stationary Source Division and Mobile Source Control Division. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.* October.

[7] California Environmental Protection Agency and Air Resources Board, 2005. *Air Quality and Land Use Handbook: A Community Health Perspective*. Website: www.arb.ca.gov/ch/landuse.htm.

ARB guidance suggests that the use of these guidelines be customized for individual land use decisions, and take into account the context of development projects. The Air Quality and Land Use Handbook specifically states that these recommendations are advisory and acknowledges that land use agencies must balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.

El Dorado County Air Quality Management District. El Dorado County AQMD is tasked with achieving and maintaining healthful air quality for its residents by establishing programs, plans, and regulations enforcing air pollution control rules in order to attain all State and federal ambient air quality standards and to minimize public exposure to airborne toxins and nuisance odors. El Dorado County AQMD encourages local jurisdictions to include General Plan policies or elements that, when implemented, would improve air quality.

El Dorado County AQMD has adopted several attainment plans to achieve State and federal air quality standards and comply with California and federal CAA requirements. El Dorado County AQMD continuously monitors its progress in implementing attainment plans and must periodically report to ARB and the U.S. EPA. El Dorado County AQMD, in partnership with the five air districts in the Sacramento Metropolitan Area, ARB, and the Sacramento Area Council of Governments (SACOG), periodically revises its attainment plans to reflect new conditions and requirements in accordance with schedules mandated by the California and federal CAAs.

The California CAA requires a triennial assessment of the extent of air quality improvements and emissions reductions achieved with control measures. The 2006 and 2009 Triennial Assessment and Plan Update developed by El Dorado County AQMD was prepared pursuant to ARB guidance, complies with plan revision requirements, and compares and incorporates updated population, industry, and vehicle-related projections, as necessary. The 2009 Assessment Plan provided emissions projections for the years 2010, 2015, and 2020 for stationary, area, and on- and off-road mobile sources.

The 2013 Revisions to the Sacramento Regional 8-Hour Ozone Attainment Plan is the current air plan for the El Dorado County AQMD, and sets out stationary source control programs and statewide mobile source control programs for attainment of the 8-hour ozone standard.

El Dorado County AQMD's primary means of implementing air quality plans is by adopting rules and regulations. Relevant El Dorado County AQMD rules include but are not limited to the following:[8]

- **Rule 205 - Nuisance**: To restrict discharge from any source whatsoever such quantities of air contaminants or other material which causes injury, detriment, nuisance or annoyance to any considerable number of persons, or to the public, or which endanger the comfort, response, health or safety of any such persons, or the public, or which cause to have a natural tendency to cause injury or damage to business or property.

[8] El Dorado County Air Quality Management District, 2012. *El Dorado County AQMD List of Current Rules.* September 21.

- **Rule 207 - Particulate Matter**: To limit release or discharge into the atmosphere from any source or single processing unity, exclusive of sources emitting combustion contaminants only, particulate matter emissions in excess of 0.1 grains per cubic foot of dry exhaust gas at standard conditions.
- **Rule 215 - Architectural Coatings**: To limit the quantity of volatile organic compounds (VOC) in architectural coatings supplied, sold, offered for sale, applied, solicited for application, or manufactured for use within the El Dorado County AQMD.
- **Rule 223-1 - Fugitive Dust, Construction, Bulk Material Handling, Blasting, Other Earth Moving Activities, Carryout and Trackout Prevention**: To reduce fugitive dust generated by construction and construction-related activities.
- **Rule 223-2 - Fugitive Dust, Asbestos Hazard Mitigation**: To reduce the amount of asbestos particulate matter entrained in the ambient air as a result of any construction or construction related activities, that disturbs or potentially disturbs naturally occurring asbestos by requiring actions to prevent, reduce or mitigate asbestos emissions.
- **Rule 224 - Cutback and Emulsified Asphalt Paving Materials**: To restrict discharge to the atmosphere volatile organic compounds (VOC's) caused by the use or manufacture, mixing, storage and application of Cutback or Emulsified asphalt for paving, road construction or road maintenance.
- **Rule 300 - Open Burning**: To limit emissions to the atmosphere from open burning.
- **Rule 501.1 - General Permit Requirements**: To provide an orderly procedure for the review of new sources of air pollution and the orderly review of the modification and operation of existing sources through the issuance of permits.

El Dorado County General Plan. The following presents guiding and implementing policies from the current El Dorado County General Plan relevant to air quality and contained within the Public Health, Safety, and Noise Element.[9]

Public Health, Safety, and Noise Element

- *Goal 6.7: Air Quality Maintenance*

  A. Strive to achieve and maintain ambient air quality standards established by the U.S. Environmental Protection Agency and the California Air Resources Board.

  B. Minimize public exposure to toxic or hazardous air pollutants and air pollutants that create unpleasant odors.

- Policy 6.7.4.4: All discretionary development applications shall be reviewed to determine the need for pedestrian/bike paths connecting to adjacent development and to common service facilities (e.g., clustered mail boxes, bus stops).
- Policy 6.7.4.6: The County shall regulate wood-burning fireplaces and stoves in all new development. Environmental Protection Agency (EPA)-approved stoves and fireplaces burning

[9] El Dorado County. 2004. *El Dorado County General Plan*. July.

natural gas or propane are allowed. The County shall discourage the use of non-certified wood heaters and fireplaces during periods of unhealthy air quality.

- Policy 6.7.4.7: The County shall inform the public regarding the air quality effects associated with the use of wood for home heating. The program should address proper operation and maintenance of wood heaters, proper wood selection and use, the health effects of wood smoke, weatherization methods for homes, and determining the proper size of heaters needed before purchase and professional installation. The County shall develop an incentive program to encourage homeowners to replace high-pollution emitting non-EPA-certified wood stoves that were installed before the effective date of the applicable EPA regulation with newer cleaner-burning EPA-certified wood stoves.
- Policy 6.7.6.1: Ensure that new facilities in which sensitive receptors are located (e.g., schools, child care centers, playgrounds, retirement homes, and hospitals) are sited away from significant sources of air pollution.
- Policy 6.7.6.2: New facilities in which sensitive receptors are located (e.g. residential subdivisions, schools, childcare centers, playgrounds, retirement homes, and hospitals) shall be sited away from significant sources of air pollution.
- Policy 6.7.7.1: The County shall consider air quality when planning the land uses and transportation systems to accommodate expected growth, and shall use the recommendations in the most recent version of the El Dorado County AQMD's Guide to Air Quality Assessment: Determining Significance of Air Quality Impacts Under the California Environmental Quality Act, to analyze potential air quality impacts (e.g., short-term construction, long-term operations, toxic and odor-related emissions) and to require feasible mitigation requirements for such impacts.

2. Impacts and Mitigation Measures

This section analyzes air quality impacts that could result from implementation of the proposed project. The subsection begins with the criteria of significance, which establish the thresholds for determining whether an impact is significant. The latter part of this subsection presents the potential air quality impacts associated with the proposed project, and recommends mitigation measures, as appropriate.

a. Criteria of Significance. The proposed project would have significant air quality impacts if it would:

- Conflict with or obstruct implementation of an applicable air quality plan;
- Violate any air quality standard or contribute to an existing violation;
- Result in a cumulatively considerable net increase of any criteria pollutant or a precursor to that pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions, which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to pollutants (including asbestos) and/or as defined by federal or State air quality standards; or
- Create objectionable odors (defined as odors that are so strong they can be detected by the average person)

It should be noted that the emission thresholds were established based on the attainment status of the air basin for specific criteria pollutants. Because the concentration standards were set at a level that

protects public health with an adequate margin of safety according to the U.S. EPA, these emission thresholds are regarded as conservative and would tend to overstate an individual project's contribution to health risks.

b. Project Impacts. Air quality impacts associated with the proposed project are described below.

(1) Clean Air Plan (CAP) Consistency. Regional air quality plans are developed to meet requirements of both the federal and California CAAs. The federal CAA requires that areas not attaining the air quality standards develop an attainment plan demonstrating how control strategies help the area meet reasonable further progress goals and attain the air quality standard. The California CAA also requires a triennial assessment of the extent of air quality improvements and emissions reductions achieved with control measures.

Air quality plan projections, including the Sacramento Regional 8 Hour Ozone Attainment Draft Report and the 2009 Triennial Assessment and Plan Update, are based on analysis and forecasts of air pollutant emissions throughout the entire region. These forecasts rely on projections of VMT, population, and employment made by Sacramento Area Council of Governments (SACOG), which are based on land use projections made by local jurisdictions (e.g. through the General Plan update process).

The Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan was prepared using population and employment data assumptions based on El Dorado County's current General Plan, as adopted in 2004 and amended through 2009. As discussed in Section IV.A, Land Use and Planning, the proposed project is located within the Community Region (urban limit line) of El Dorado Hills. The site is therefore identified as a location that is appropriate for residential development in the County's General Plan. The extension of infrastructure to the project site, including roadways and utilities that would only serve the proposed development, would not contribute to or cause additional growth to occur outside of the Community Region boundaries or elsewhere within the vicinity. Therefore, the proposed project would not induce substantial population growth in this area of the County, either directly or indirectly, beyond what has been considered by the General Plan.

The Air Plan also includes local regulatory measures including architectural coating, automotive refinishing, degreasing/solvent cleaning, graphic arts, natural gas production, and large water heaters. The measures outlined in the Plan are not specifically applicable to the proposed project. The project would however be subject to all architectural coatings measures included in the Plan. Therefore, the proposed project would not be in conflict with the region's clean air plan, and the impact would be less than significant.

The 2009 Triennial Assessment and Plan Update includes control measures that focus on emission sources that are regulated by El Dorado County AQMD, including stationary sources and some area-wide sources. The Plan includes rules and regulations to reduce emissions from agricultural sources, industrial sources, and from vehicle emissions. The measures are not specifically applicable to the proposed project. Through commitments in the Plan, in order to achieve a reduction in ozone precursor emissions, the El Dorado County AQMD is committed to implementing feasible measures to obtain future emission reductions. Similar to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan, these commitments include controls on architectural coatings,

industrial and commercial boilers, steam generators and heaters, graphic arts, internal combustion engines, and large water heaters. Implementation of the proposed Dixon Ranch Residential Project would not conflict with the fulfillment of these commitments. The project would contribute to a reduction in air emissions by implementing all applicable measures such as those related to architectural coatings. Therefore, the project would not conflict with plans adopted for the purpose of reducing air pollutant emissions, and the impact would be less than significant.

(2) Project Emissions. The following discussion includes an analysis of both construction and operational emissions.

Construction Emissions. During construction, short-term degradation of air quality may occur from particulate emissions generated by excavation, grading, hauling, and other activities. In addition, areas that contain naturally occurring asbestos (NOA)-containing rock formations, asbestos can be released into the air and pose a health hazard.

The El Dorado County AQMD has prepared the parcel-based map "Asbestos Review Areas, Western Slope" which shows areas of known NOA and areas likely to have NOA, as well as 0.25-mile buffers around known and likely NOA areas.[10]

The Asbestos Review Areas Western Slope map was reviewed to determine if the project site was located within a found NOA, within a 0.25 mile of a found NOA, within an area "more likely to contain asbestos," or within a 0.25 mile of an area "more likely to contain asbestos or fault line." The area north of Green Spring Creek and a portion of the area south of the creek on the project site are located within 0.25 miles of an area "more likely to contain asbestos or fault line"; therefore, it is foreseeable that disturbance of soils in these areas of the project site could increase airborne asbestos. Additionally, depending on the final design of off-site mitigation measures, implementation of these measures could increase airborne asbestos. The potential for asbestos-related impacts is considered significant.

Impact AIR-1: Construction activities could result in increased airborne asbestos. (S)

Per El Dorado County AQMD, an Asbestos Dust Mitigation Plan would be required for this project as it is located on a site identified as being in an Asbestos Review Area and more than 20 cubic yards of earth will be moved at the site during construction. Implementation of Mitigation Measures AIR-1a would require compliance with Rule 223-2 and would reduce asbestos emissions to a less than significant level.

> Mitigation Measures AIR-1: The project applicant shall comply with El Dorado County AQMD Rule 223-2 Fugitive Dust – Asbestos Hazard Mitigation. The project sponsor shall prepare an Asbestos Dust Mitigation Plan Application, including an outline of the areas of disturbance that are located in the area designated "more likely to contain asbestos or fault line", which shall be submitted to and approved by the El Dorado County AQMD prior to the start of project construction. (LTS)

[10] El Dorado County Air Quality Management District. 2005. *El Dorado County Asbestos Review Areas, Western Slope*.

Equipment Emissions. Site preparation and project construction would involve clearing, cut-and-fill activities, grading, and building activities. Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase because most engine emissions are associated with the excavation, handling, and transport of soils on the site. If not properly controlled, these activities would temporarily generate PM_{10}, $PM_{2.5}$, and to a lesser extent CO, SO_2, NO_x, and volatile organic compounds. Sources of fugitive dust would include disturbed soils at the construction sites and trucks carrying uncovered loads of soils. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, the silt content of soil, wind speed, and the number of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site. These emissions would be temporary and limited to the immediate area surrounding the construction sites.

Construction emissions were estimated for the project site using the California Emissions Estimator Model (CalEEMod v.2013.2). Construction-related emissions are presented in Table IV.D-5. Detailed calculations are provided in Appendix C.

The effects of construction activities related to construction of the project and any identified off-site improvements would increase dust and locally elevated levels of PM_{10} downwind of construction activity. Construction dust would be generated at levels that could create an annoyance to occupants of nearby properties. As shown in Table IV.D-5, construction emissions of ozone precursors (ROG and NO_x) would exceed the El Dorado County threshold for daily construction emissions.

Table IV.D-5: Project Construction Emissions in Pounds Per Day

Project Construction	**ROG**	**NO_x**	**PM_{10}**	**$PM_{2.5}$**
Maximum Daily Emissions	89.7	125.7	26.2	15.8
El Dorado County AQMD Threshold	82.0	82.0	DSM	DSM
Exceed Threshold?	**Yes**	**Yes**	**NA**	**NA**

Note: According to the El Dorado County AQMD, for fugitive dust emissions, the threshold is based on specific dust suppression measures that will prevent visible emissions beyond the boundaries of the project. If measures are incorporated further analysis is not necessary.
DSM = Dust Suppression Measure.

Source: LSA Associates, 2013.

<u>Impact AIR-2</u>: Construction of the proposed project would generate air pollutant emissions that could violate air quality standards. (S)

<u>Mitigation Measure AIR-2</u>: Consistent with guidance from the El Dorado County AQMD, the following actions shall be required in relevant construction contracts and specifications for the project:

- Conduct watering as necessary for visible emissions not to exceed more than 25 feet beyond the active cut areas or beyond the property line in any direction (Rule 223-2.4.A).
- For all disturbed surface areas (except completed grading areas), apply dust suppression in a sufficient quantity and frequency to maintain a stabilized surface; any areas which cannot

be stabilized, as evidenced by wind driven dust, must have an application of water at least twice per day to at least 80 percent of the unstabilized area.

- Water all unpaved roads used for any vehicular traffic at least once per every two hours of active operations and restrict vehicle speed to 15 mph (Rule 223-2.4 B).
- Pave or apply chemical stabilization at sufficient concentration and frequency to maintain a stabilized surface starting from the point of intersection with the public paved surface, and extending for a centerline distance of at least 100 feet and width of at least 20 feet or pave from the point of intersection with the public paved road surface, and extending for a centerline distance of at least 25 feet and width of at least 20 feet, and install a track-out control device immediately adjacent to the paved surface such that exiting vehicles do not travel on any unpaved road surface after passing through the track-out control device.
- The project's prime contractor shall provide the El Dorado County APCD an approved plan demonstrating that heavy-duty (i.e., greater than 50 horsepower) off-road vehicles to be used in the construction project, and operated by either the prime contractor or any subcontractor, will achieve, at a minimum a fleet-averaged 15 percent NO_x reduction compared to the most recent ARB fleet average. Successful implementation of this measure requires the prime contractor to submit a comprehensive inventory of all off-road construction equipment, equal to or greater than 50 horsepower, that will be used an aggregate of 40 or more hours during the construction project. The inventory shall include the horsepower rating, engine production year, and hours of use or fuel throughput for each piece of equipment. The inventory list shall be updated and submitted monthly throughout the duration of when the construction activity occurs.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure, Title 13, Section 2485 of the California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.
- All construction equipment shall be maintained and properly tuned in accordance with the manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.
- During construction, all self-propelled diesel-fueled engines greater than 25 horsepower shall be in compliance with the ARB Regulation for In-Use Off-Road Diesel Fueled Fleets[11]. (SU)

Implementation of the above measures would minimize construction emissions (as shown in Table IV.D-6), but not to a less-than-significant level, and this impact would remain significant and unavoidable.

Operational Emissions. The following describes air quality impacts associated with operation of the proposed project.

[11] California Air Resources Board. 2007. *Regulation for In-Use Off-Road Diesel Fueled Fleets*. July 26.

Table IV.D-6: Mitigated Project Construction Emissions in Pounds Per Day

Project Construction	ROG	NO_x	PM_{10}	$PM_{2.5}$
Maximum Mitigated Daily Emissions	84.2	103.8	14.3	9.2
El Dorado County AQMD Threshold	82.0	82.0	DSM	DSM
Exceed Threshold?	**Yes**	**Yes**	**NA**	**NA**

Notes: According to the El Dorado County AQMD, for fugitive dust emissions, the threshold is based on specific dust suppression measures that will prevent visible emissions beyond the boundaries of the project. If measures are incorporated further analysis is not necessary.

DSM = Dust Suppression Measure.

Source: LSA Associates, 2013.

Localized CO Impacts. Vehicular traffic generated by development would emit CO into the air along roadway segments and near intersections. As previously described, areas of vehicle congestion can create pockets of high CO concentrations, called "hot spots," affecting local sensitive receptors (e.g., residents, school children, the elderly, and hospital patients). High CO concentrations are typically associated with roadways or intersections operating with extremely high traffic volumes. According to El Dorado County AQMD, streets and intersections operating at level of service (LOS) E and F have the "potential" to create a violation of the CO standard (see Section IV.C, Transportation and Circulation, for a discussion of traffic LOS).

El Dorado County is currently an attainment area for State and federal CO air quality standards. Monitoring data at the closest monitoring station indicate that CO concentrations are currently less than 10 percent of the State standard and projected to decline over time. A screening analysis of CO concentrations was performed to determine CO levels for roadways in the project vicinity. The results of the analysis are shown in Table IV.D-7. It should be noted that these results include an existing background concentration of 3.1 ppm for the 1-hour concentration and 1.9 ppm for the 8-hour concentration. As demonstrated in Table IV.D-7, CO levels for intersections with high traffic volumes in the year 2018 would be below State and federal standards. Results indicate that future traffic conditions with the project in the year 2018 and associated vehicular emissions are not expected to result in any CO concentrations exceeding the 1-hour or 8-hour State CO standards. Roadway-related CO concentrations would be well below State standards and would not exceed standards even with increased traffic in 2018. Because State CO standards are more stringent than the federal standards, concentrations would also not exceed the federal standards. As a result, any impacts to air quality as measured by the 1- and 8-hour standards for CO concentrations would be less than significant.

Table IV.D-7: CO Concentrations in Project Vicinity

Intersection	Existing 1-Hour CO Concentration (ppm)	Existing 8-Hour CO Concentration (ppm)	Exceeds State Standards	
			1-Hr	8-Hr
Green Valley Road/El Dorado Hills Blvd	3.3	2.1	No	No
Silva Valley Parkway/US 50 Westbound Ramp	3.2	2.0	No	No
Silva Valley Parkway/Appian Way	3.4	2.2	No	No

Source: LSA Associates, Inc. 2013.

Regional Emissions. The project would generate long-term air emissions such as those associated with changes in permanent usage of the project site. These long-term emissions are primarily mobile source emissions that would result from vehicle trips associated with the proposed project. The proposed project is expected to generate approximately 4,931 trips per day. Area sources, such as natural gas heaters, landscape equipment, and use of consumer products, would also result in pollutant emissions.

To determine pollutant emissions associated with the proposed project, the CalEEMod computer program, which is the most current air quality model available in California for estimating emissions associated with land use development projects, was used to calculate long-term mobile and area source emissions. Results are shown in Table IV.D-8 and CalEEMod output sheets are included in Appendix C of this EIR.

The ROG emissions from mobile sources include emissions from different automobile operating modes, including running emissions and evaporation from engine running and resting. These emissions also include those resulting from incomplete combustion when a car is initially started. NO_x emissions comprise running exhaust and are increased during the initial engine running periods.

Table IV.D-8: Project Operational Regional Emissions in Pounds Per Day

	Reactive Organic Gases	Nitrogen Oxides	PM_{10}	$PM_{2.5}$
Area Source	960	13	161	161
Mobile Source	65	42	30	8
Energy Source	0.6	5	.4	.4
Total Emissions	1,025.6	60	191	169
El Dorado County AQMD Significance Threshold w/Mitigation	82	82	NA	NA
Exceed Thresholds?	**Yes**	**No**	**NA**	**NA**

Notes: NA = Not Applicable. No threshold for this pollutant.
Source: LSA Associates, Inc., 2013.

PM_{10} emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emission processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles. Since much of the project traffic fleet would be made up of light-duty gasoline-powered vehicles (i.e., light vehicles typically driven by residents in El Dorado County), a majority of the PM_{10} emissions would result from entrainment of roadway dust from vehicle travel.

Area source emissions associated with the project would include water heating, the use of landscaping equipment, and fireplace emissions. The daily emissions associated with project operational trip generation and area sources are identified in Table IV.D-8 for ROG, NO_x, PM_{10}, and $PM_{2.5}$. The results indicate the project would exceed the criteria for the ozone precursor ROG, primarily due to the use of wood burning fireplaces; therefore, the proposed project would have a significant effect on regional air quality and mitigation would be required. Implementation of Mitigation Measure AIR-3 would reduce project emissions to the extent feasible.

<u>Impact AIR-3</u>: Operation of the proposed project would generate air pollutant emissions that would exceed the El Dorado AQMD criteria and could contribute substantially to a violation of air quality standards. (S)

Mitigation Measure AIR-3: The project shall incorporate the following design elements into the project:

- The project shall only permit natural gas fireplaces.
- Design of the project shall improve the pedestrian network both on the project site and through connections adjacent to the project.
- Design of the project shall not restrict resident access to public transit.
- Garages included as part of the project shall be electric vehicle charging compatible through inclusion of a dedicated electrical outlet.
- The project shall install Energy Star or ground source heat pumps.
- The project sponsor shall consult the El Dorado County AQMD on the installation of ozone destruction catalysts on air conditioning systems.
- The project sponsor shall provide the option of roof-mounted photovoltaic energy systems on new homes. (SU)

As shown in Table IV.D-9, even with mitigation, the project would continue to exceed the maximum daily emission threshold. This impact would be significant and unavoidable.

Table IV.D-9: Mitigated Project Operational Regional Emissions in Pounds Per Day

	Reactive Organic Gases	Nitrogen Oxides	PM_{10}	$PM_{2.5}$
Area Source	35	1	1	1
Mobile Source	59	38	27	8
Energy Source	1	5	1	1
Total Emissions	95	44	29	10
El Dorado County AQMD Significance Threshold w/Mitigation	82	82	NA	NA
Exceed Thresholds?	**Yes**	**No**	**NA**	**NA**

Notes: NA = Not Applicable. No threshold for this pollutant.
Source: LSA Associates, Inc., 2013.

The primary emissions associated with the project are regional in nature, meaning that air pollutants are rapidly dispersed on emission or, in the case of vehicle emissions associated with the project, emissions are released in other areas of the air basin. Because the resulting emissions would be dispersed rapidly and contribute only a small fraction of the region's air pollution, air quality in the immediate vicinity of the project site would not substantially change compared to existing conditions or the air quality monitoring data reported in Table IV.D-2.

Cumulative Emissions. The El Dorado County AQMD CEQA Guidelines states that projects in the Mountain Counties Air Basin would have a less-than-significant impact for cumulative conditions, if:

- The project does not require a change in the existing land use designation (i.e., general plan amendment, rezone), and projected emissions (ROG, NO_x, CO, or PM_{10}) are not greater than the emissions anticipated for the site if developed under the existing land use designation;
- The project would not individually exceed any significance criteria in the El Dorado County AQMD Guide to Air Quality Assessment;
- The lead agency for the project requires the project to implement the emissions reduction measures contained in and/or derived from the Air Quality Attainment Plan; or
- The project complies with all applicable El Dorado County AQMD rules and regulations.

The project would comply with all applicable El Dorado County AQMD rules and regulations and would implement applicable measures from the Air Quality Attainment Plan. However, the project site is currently designated as Open Space (OS) and Low Density Residential (LDR). The project would require a General Plan Amendment to allow for a combination of Low Density Residential (LDR), High Density Residential (HDR) and Medium Density Residential (MDR) and OS. The amended General Plan designations would allow for an increased number of housing units which would ultimately result in an increase in regional emissions over those projected for the strictly LDR and OS designations. Additionally, as shown in Table IV.D-7 and Table IV.D-8, the project would result in significant project level air quality impacts even with implementation of all feasible mitigation measures. Therefore, implementation of the proposed project would result in a significant cumulative air quality impact.

Impact AIR-4: Operation of the proposed project would result in a significant cumulative net increase in criteria pollutant emissions. (S)

Mitigation Measure AIR-4: Implement Mitigation Measure AIR-3. As shown in Table IV.D-8, even with mitigation, the project would continue to exceed the maximum daily emission threshold. This impact would be significant and unavoidable. (SU)

(3) Odors. Heavy-duty construction equipment on the project site would emit odors from fuel and exhaust. However, construction activity would be short-term and odors would end after construction is completed. Once constructed, the proposed residential uses would not be expected to generate odors nor would the surrounding existing residential uses be expected to contribute odors to the project site. The project includes a proposed lift station to be located within the proposed EID lot (Lot Z) at the north end of Lot 2, adjacent to Green Valley Road. The connection to the sewer line would be enclosed and odors associated with the lift station would not be expected. Additionally, no known wastewater treatment plants or other known odor sources in the vicinity of the project site that would affect sensitive receptors. Therefore, the project would not generate odor impacts and would also not be expected to expose people to objectionable odors. This impact would be considered a less-than-significant impact.

(4) Exposure of Sensitive Receptors. During project construction, some portions of the project will be built out before all construction is complete; therefore, new residents of the project may be residing in units before other phases of the development are complete. Implementation of Mitigation Measures AIR-1 and AIR-2 would ensure that future residents of the project site are not exposed to substantial toxic air contaminants during the construction period.

The proposed project is not located near any high volume roadways or other sources of toxic air contaminants. Consistent with ARB guidelines for toxic air contaminants, the project would not have located sensitive uses within the following distances:

- Within 500 feet of a freeway, urban roads with 100,000 vehicles/day, or rural roads with 50,000 vehicles/day;
- Within 1,000 feet of a major service and maintenance rail yard;
- Immediately downwind of ports (in the most heavily impacted zones) and petroleum refineries;

- Within 300 feet of any dry cleaning operation (for operations with two or more machines, provide 500 feet); or
- Within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater).

Therefore, the potential for the project to expose sensitive receptors or the general public to substantial levels of TACs would be considered a less-than-significant impact.

c. Pollutants and Public Health. Despite great progress in air quality improvement, approximately 146 million people nationwide lived in counties with pollution levels above the national standards in 2002. Out of the 230 non-attainment areas identified during the 1990 Clean Air Act Amendment designation process, 124 areas remain under non-attainment status or designation today. In these non-attainment areas, however, the severity of air pollution episodes has decreased. Air quality in the Mountain Counties Air Basin in the past 20 years has improved steadily, even with increase in population.

As shown in Table IV.D-2, long-term exposure to elevated levels of criteria pollutants could result in potential health effects. However, as stated in the thresholds of significance, emission thresholds established by the air district are used to manage total regional emissions within an air basin, based on the air basin attainment status for criteria pollutants. These emission thresholds were established for individual projects that would contribute to regional emissions and pollutant concentrations that may affect or delay the projected attainment target year for certain criteria pollutants.

Because of the conservative nature of the thresholds and the basin-wide context of individual project emissions, there is no direct correlation of a single project to localized health effects. One individual project does not necessarily result in adverse health effects for residents in the project vicinity. Based on the above discussion, the potential for an individual project to significantly deteriorate regional air quality or contribute to significant health risk is small, especially when the emission thresholds are not exceeded by the project.

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E. GREENHOUSE GAS EMISSIONS

This section summarizes existing greenhouse gas (GHG) emissions and discusses global climate change, its causes, and the contribution of human activities. The section estimates the likely GHG emissions that would result from construction and operational activities including vehicular traffic, energy consumption and other emission sources and describes the criteria for determining the significance of climate change impacts. Mitigation measures are recommended where appropriate to reduce project-related impacts to a less-than-significant level. The analysis performed for this section is based on the El Dorado County Air Quality Management District's (AQMD) *Guide to Air Quality Assessment: Determining Significance of Air Quality Impacts under the California Environmental Quality Act*.[1]

1. Setting

The following discussion provides an overview of the science associated with climate change.

a. Description of Global Climate Change. Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other significant changes in climate (such as precipitation or wind) that last for an extended period of time **(**decades or longer). The term "global climate change" is often used interchangeably with the term "global warming," but "global climate change" is preferred to "global warming" because it helps convey that there are other changes, such as rain fall patterns, in addition to rising temperatures.

Cumulative GHG emissions are believed to contribute to an increased greenhouse effect and global climate change, which may result in a sea level rise, changes in precipitation, habitat, temperature, wildfires, air pollution levels, and changes in the frequency and intensity of weather-related events.

Changes to the global climate system include higher sea levels, drier or wetter weather, changes in ocean salinity, changes in wind patterns or more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold and increased intensity of tropical cyclones. Ocean acidity levels have increased by about 30 percent from high levels of CO_2 being absorbed by the sea. Specific effects already seen in California include a decline in the Sierra Nevada snowpack with negative affects on late summer hydroelectric production. Also forecast is an increase in the number of wildfires and their intensity, increased stream sedimentation, diminished ground water recharge, erosion of the Pacific coastline, and seawater intrusion in the Delta. The southern part of the State will also likely move toward a drier condition, with a 30 percent average reduction in precipitation.[2]

(1) Greenhouse Gases (GHG). GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases

[1] El Dorado County Air Quality Management District, 2002. *Guide to Air Quality Assessment: Determining Significance of Air Quality Impacts under the California Environmental Quality Act.* February.

[2] Koopman, Marni E., Richard S. Nauman, and Jessica L. Leonard, 2010. *Projected Future Climatic and Ecological Conditions in San Luis Obispo County*. The National Center for Conservation Science and Policy. April.

that are widely seen as the principal contributors to human-induced global climate change are described below and shown in Table IV.E-1.[3]

Table IV.E-1: Global Warming Potential of Greenhouse Gases

Gas	Atmospheric Lifetime (Years)	Global Warming Potential (100-year Time Horizon)
Carbon Dioxide (CO_2)	50-200	1
Methane (CH_4)	12	25
Nitrous Oxide (N_2O)	114	298
HFC-23	270	14,800
HFC-134a	14	1,430
HFC-152a	1.4	124
PFC: Tetrafluoromethane (CF_4)	50,000	7,390
PFC: Hexafluoromethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Source: IPCC, 2007. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC.

Over the last 200 years, human activities have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere, and enhancing the natural greenhouse effect, which is believed to be causing global warming. While GHGs produced by human activities include naturally-occurring GHGs such as CO_2, methane, and nitrous oxide (N_2O), some gases, like HFCs, PFCs, and SF_6 are completely new to the atmosphere. Certain other gases, such as water vapor, are short-lived in the atmosphere as compared to these GHGs that remain in the atmosphere for significant periods of time, and contribute to climate change in the long term. Water vapor is generally excluded from the list of GHGs because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation. For purposes of this EIR, the term "GHG" will refer collectively to the six gases described below.

While criteria pollutants and toxic air contaminants are pollutants of regional and local concern (see Section IV.D, Air Quality); GHG are global pollutants. The primary land-use related GHG are carbon dioxide (CO_2), methane (CH_4) and nitrous oxides (N_2O). The individual pollutant's ability to retain infrared radiation represents its "global warming potential" and is expressed in terms of CO_2 equivalents; therefore, CO_2 is the benchmark having a global warming potential of 1. Methane has a global warming potential of 21 and, thus, has a 21 times greater global warming effect per metric ton of CH_4 than CO_2. Nitrous Oxide has a global warming potential of 310. Emissions are expressed in annual metric tons of CO_2 equivalent units of measure (i.e., $MTCO_2e$/yr). The three other main GHG are Hydroflourocarbons, Perflourocarbons, and Sulfur Hexaflouride. While these compounds have significantly higher global warming potentials (ranging in the thousands), all three typically are not a concern in land-use development projects and are usually only used in specific industrial processes.

[3] The greenhouse gases listed are consistent with the definition in Assembly Bill (AB) 32 (Government Code 38505), as discussed later in this section.

The following discussion summarizes the characteristics of the primary GHGs shown in Table IV.E-1.

Carbon Dioxide (CO_2). In the atmosphere, carbon generally exists in its oxidized form, as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals and plants, volcanic outgassing, decomposition of organic matter and evaporation from the oceans. Human-caused sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. The Earth maintains a natural carbon balance and when concentrations of CO_2 are upset, the system gradually returns to its natural state through natural processes. Natural changes to the carbon cycle work slowly, especially compared to the rapid rate at which humans are adding CO_2 to the atmosphere. Natural removal processes, such as photosynthesis by land- and ocean-dwelling plant species, cannot keep pace with this extra input of man-made CO_2, and consequently, the gas is building up in the atmosphere.[4]

In 2002, fossil fuel combustion accounted for approximately 98 percent of man-made CO_2 emissions and approximately 84 percent of California's overall GHG emissions (CO_2e). The transportation sector accounted for California's largest portion of CO_2 emissions, with gasoline consumption making up the greatest portion of these emissions. Electricity generation was California's second largest category of GHG emissions.

Methane (CH_4). Methane is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans. Anthropogenic sources include rice cultivation, livestock, landfills and waste treatment, biomass burning, and fossil fuel combustion (burning of coal, oil, natural gas, etc.). Decomposition occurring in landfills accounts for the majority of human-generated CH_4 emissions in California, followed by enteric fermentation (emissions from the digestive processes of livestock).[5] Agricultural processes such as manure management and rice cultivation are also significant sources of manmade CH_4 in California.

Methane accounted for approximately 6 percent of gross climate change emissions (CO_2e) in California in 2002.[6] It is estimated that over 60 percent of global methane emissions are related to human-related activities.[7] As with CO_2, the major removal process of atmospheric methane – a chemical breakdown in the atmosphere – cannot keep pace with source emissions, and methane concentrations in the atmosphere are increasing. Also of serious concern is the permafrost melting in arctic regions caused by climate change. Melting permafrost releases substantial quantities of methane, and there is concern that a positive feedback loop may occur with melting increasing as

[4] California Environmental Protection Agency, 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. March.

[5] California Air Resources Board, 2008. Greenhouse Gas Inventory Data - 1990 to 2004. Website: www.arb.ca.gov/cc/ inventory/data/data.htm (accessed November 2008).

[6] Ibid.

[7] Intergovernmental Panel on Climate Change, 2007. *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC.*

methane is released, leading to more warming and more melting. Atmospheric levels have continued to increase despite the economic slump.[8]

Nitrous Oxide (N_2O). Nitrous oxide is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. Both mobile and stationary combustion emit N_2O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in California. N_2O emissions accounted for nearly 7 percent of man-made GHG emissions (CO_2e) in California in 2002.

Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), and Sulfur Hexafluoride (SF_6). HFCs are primarily used as substitutes for ozone-depleting substances regulated under the Montreal Protocol.[9] PFCs and SF_6 are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry, which is active in California, leads to greater use of PFCs. HFCs, PFCs, and SF_6 accounted for about 3.5 percent of man-made GHG emissions (CO_2e) in California in 2002.[10]

(2) Emissions Sources and Inventories. The primary man-made source of CO_2 is the burning of fossil fuels; the two largest sources being coal burning to produce electricity and petroleum burning in combustion engines. The primary sources of man-made CH_4 are natural gas systems losses (during production, processing, storage, transmission and distribution), enteric fermentation (digestion from livestock) and landfill off-gassing. The primary source of man-made N_2O is agricultural soil management (fertilizers), with fossil fuel combustion a very distant second.

Global Emissions. Worldwide emissions of GHGs in 2004 were 27 billion metric tons (MT) of CO_2e per year.[11] Global estimates are based on country inventories developed as part of programs of the United Nations Framework Convention on Climate Change (UNFCCC).

U.S. Emissions. In 2010, the United States emitted about 1,633.2 million metric tons (MMT) of CO_2e, with each individual at home releasing approximately 4 metric tons per year. Of the four major sectors nationwide – residential, commercial, industrial and transportation – transportation

[8] National Oceanic and Atmospheric Administration, 2010. *Greenhouse Gases Continue To Climb Despite Economic Slump. Carbon Dioxide, Methane Increased In 2008.* http://www.noaanews.noaa.gov/stories2009/20090421_carbon.html. Accessed October, 2010.

[9] The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for ozone depletion.

[10] California Environmental Protection Agency, 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. March.

[11] Combined total of Annex I and Non-Annex I Country CO_2e emissions. United Nations Framework Convention on Climate Change (UNFCCC), 2007. *Greenhouse Gas Inventory Data.* Websites: unfccc.int/ghg_data/ghg_data_unfccc/time_series_annex_i/items/3814.php and maindb.unfccc.int/library/view_pdf.pl?url=http://unfccc.int/resource/docs/2005/sbi/eng/18a02.pdf.

accounts for the highest amount of GHG emissions (approximately 35 to 40 percent); these emissions are entirely generated from direct fossil fuel combustion. Between 1990 and 2009, total U.S. GHG emissions rose by 7.3 percent, but emissions decreased from 2008 to 2009 by 6.1 percent. This decrease was primarily due to: (1) a decrease in economic output resulting in a decrease in energy consumption across all sectors; and (2) a decrease in the carbon intensity of fuels used to generate electricity due to fuel switching as the price of coal increased, and the price of natural gas decreased significantly. Since 1990, U.S. emissions have increased at an average annual rate of 0.4 percent.[12]

State of California Emissions. According to California Air Resources Board (ARB) emission inventory estimates, California's gross emissions of GHGs decreased 1.5 percent, from 463.6 MMT[13] of CO_2e emissions in 2000 to 456.8 million in 2009, with a maximum of 488.8 million in 2007.[14] During the same period, California's population grew by 9.1 percent, from 33.9 to 37.2 million people and GHG emissions per person decreased from 13.7 to 12.4 metric tons of CO_2e. The year 2009 saw a 5.8 percent decrease in Statewide GHG emissions, driven by a noticeable drop in on-road transportation, cement production, and electricity. The year 2009 also reflects the full effects of the economic recession and higher fuel prices. As the economy recovers, GHG emissions are likely to rise again without other mitigation actions.

California has the fourth lowest per-capita CO_2 emission rate from fossil fuel combustion in the country, due to the success of its energy efficiency and renewable energy programs and commitments that have lowered the State's GHG emissions rate of growth by more than half of what it would have been otherwise.[15]

ARB is responsible for developing the California GHG Emission Inventory. This inventory estimates the amount of GHGs emitted to and removed from the atmosphere by human activities within the State and supports the Assembly Bill (AB) 32 Climate Change Program, discussed below. ARB's current GHG emission inventory for the years 2000 to 2009 (using categories established by ARB) is shown in Figure IV.E-1. The emission inventory estimates are based on the actual amount of all fuels combusted in the State, which accounts for over 85 percent of the GHG emissions within California.

[12] U.S. Environmental Protection Agency, 2011. *The U.S. GHG Emissions and Sinks: Fast Facts*. Website: www.epa.gov/climatechange/emissions/usinventoryreport.html.

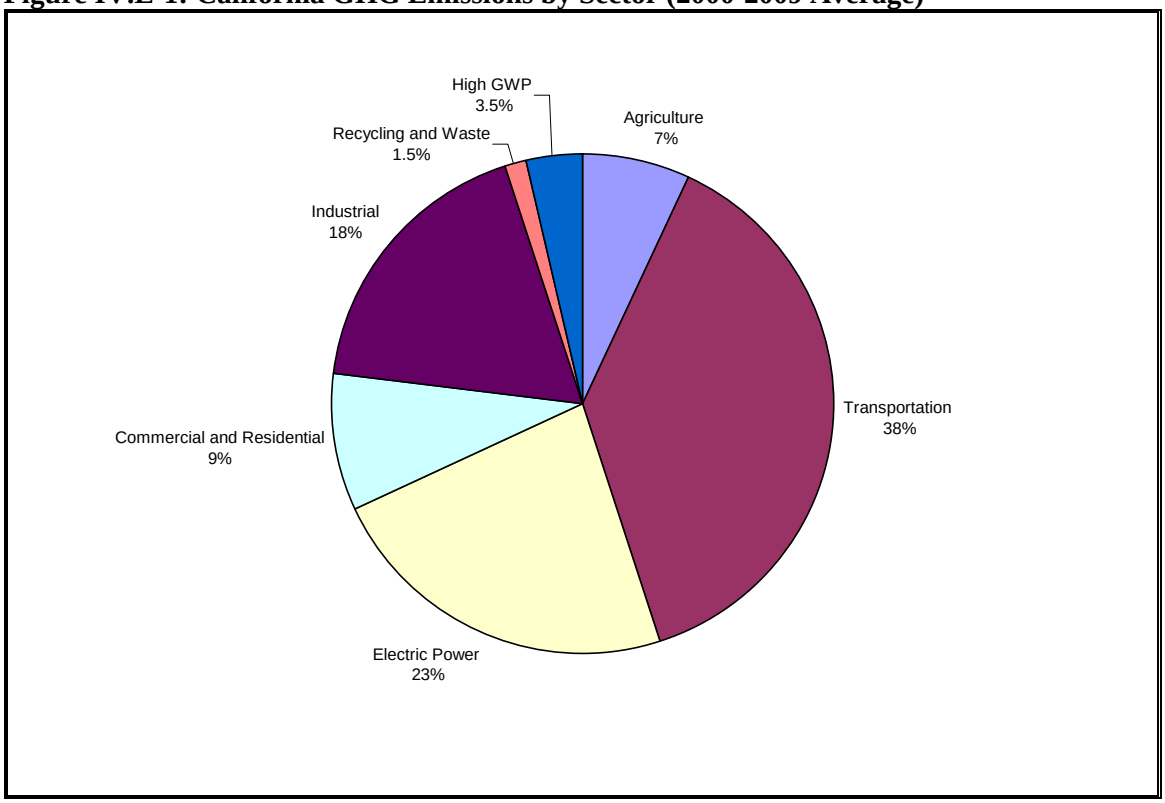
[13] A metric ton is equivalent to approximately 1.1 tons.

[14] California Air Resources Board, 2011. *Trends in California GHG Emissions for 2000 to 2009 by Category as Defined in the Scoping Plan.* December. Websites: www.arb.ca.gov/cc/inventory/pubs/reports/ghg_inventory_00-09_trends.pdf and www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_trends_00-08_2010-05-12.pdf (accessed November 2011).

[15] California Energy Commission, 2007. *Inventory of California GHG Emissions and Sinks: 1990 to 2004 - Final Staff Report, publication # CEC-600-2006-013-SF*, Sacramento, CA. December 22, 2006; and January 23, 2007 update to that report.

El Dorado County Emissions. In El Dorado County, the primary source of GHG is fossil fuel combustion mainly in the transportation sector (estimated at 70 percent of countywide GHG emissions). A distant second is residential sources (approximately 20 percent), and commercial/ industrial sources are third (approximately 7 percent). The remaining sources are waste/landfill (approximately 3 percent) and agricultural (<1 percent).

Figure IV.E-1: California GHG Emissions by Sector (2000-2009 Average)



Note: The High GWP sector encompasses miscellaneous sources.

Source: ARB, 2011. *Trends in California GHG Emissions for 2000 to 2009 – by Category as Defined in the Scoping Plan.* December. Website: www.arb.ca.gov/cc/inventory/pubs/reports/ghg_inventory_ 00-09_trends.pdf.

b. Regulatory Framework. The regulatory framework and governmental activities addressing GHG emissions and global climate change are discussed in this section. Although GHG emissions are being addressed on an international level, federal, State, regional, and local activities are most applicable to the proposed project and are discussed below.

(1) Federal Regulations. The United States has historically had a voluntary approach to reducing GHG emissions. However, on April 2, 2007, the United States Supreme Court ruled [549 U.S. 497 (2007)] that the Environmental Protection Agency (U.S. EPA) has the authority to regulate CO_2 emissions under the federal Clean Air Act (CAA). While there currently are no adopted federal regulations for the control or reduction of GHG emissions, the U.S. EPA commenced several actions

in 2009 to implement a regulatory approach to global climate change, including the ones described below.

On September 22, 2009, the U.S. EPA issued a final rule for mandatory reporting of GHGs from large GHG emission sources in the United States. In general, this national reporting requirement will provide the U.S. EPA with accurate and timely GHG emissions data from facilities that emit 25,000 metric tons or more of CO_2 per year. This publicly-available data will allow the reporters to track their own emissions, compare them to similar facilities, and aid in identifying cost-effective opportunities to reduce emissions in the future. Reporting is at the facility level, except that certain suppliers of fossil fuels and industrial GHGs, along with vehicle and engine manufacturers, will report at the corporate level. An estimated 85 percent of the total national GHG emissions, from approximately 10,000 facilities, are covered by this rule.

On December 7, 2009, the U.S. EPA Administrator signed a final action under the CAA, finding that six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, SF_6) constitute a threat to public health and welfare, and that the combined emissions from motor vehicles contribute to global climate change. This U.S. EPA action does not impose any requirements on industry or other entities. However, the findings are a prerequisite to finalizing the GHG emission standards for light-duty vehicles mentioned below. U.S. EPA received ten petitions challenging this determination. On July 29, 2010, U.S. EPA denied these petitions.

On April 1, 2010, the U.S. EPA and the Department of Transportation's National Highway Traffic Safety Administration (NHTSA) announced a final joint rule to establish a national program consisting of new standards for model year 2012 through 2016 light-duty vehicles that will reduce GHG emissions and improve fuel economy. The U.S. EPA is finalizing the first-ever national GHG emissions standards under the Clean Air Act, and NHTSA is finalizing Corporate Average Fuel Economy standards under the Energy Policy and Conservation Act. The U.S. EPA GHG standards require light-duty vehicles to meet an estimated combined average emissions level of 250 grams of CO_2 per mile in model year 2016, equivalent to 35.5 miles per gallon.

In December 2010, the U.S. EPA issued its plan for establishing GHG pollution standards under the CAA in 2011. The agency looked at a number of sectors and is moving forward on GHG standards for fossil fuel power plants and petroleum refineries – two of the largest industrial sources, representing nearly 40 percent of the GHG pollution in the United States.[16]

On August 9, 2011, U.S. EPA and the NHTSA announced the first-ever standards to reduce GHG emissions and improve the fuel efficiency of heavy-duty trucks and buses. The final combined standards of the Heavy-Duty National Program will reduce CO_2 emissions by about 270 MMT and save about 530 million barrels of oil over the life of vehicles built for the 2014 to 2018 model years. The heavy duty sector addressed in the U.S. EPA and NHTSA rules (including the largest pickup trucks and vans, semi-trucks, and all types and sizes of work trucks and buses in between) accounts for nearly 6 percent of all national GHG emissions and 20 percent of transportation emissions. In addition, air quality will continue to improve as less fuel use leads to reduced ozone and particulate matter.

[16] U.S. EPA, 2010. Press Release. December 23.

(2) State Regulations. The ARB is typically the lead agency for implementing climate change regulations in the State. There are many regulations and statutes in California that address, both directly and indirectly, greenhouse gas emissions, such as renewable portfolio standards (SB 1078, SB 107, SB 2(1X)) and energy efficiency standards (Title 24, Cal. Code Regs.). Key State regulatory activities specifically addressing climate change and greenhouse gas emissions are discussed below.

Assembly Bill 1493 (2002). In a response to the transportation sector's significant contribution to California's CO_2 emissions, AB 1493 (Pavley) was enacted on July 22, 2002. AB 1493 requires the ARB to set GHG emission standards for passenger vehicles and light duty trucks (and other vehicles whose primary use is noncommercial personal transportation in the State) manufactured in 2009 and all subsequent model years. These standards (starting in model years 2009 to 2016) were approved by the ARB in 2004, but the needed waiver of Clean Air Act Preemption was not granted by the U.S. EPA until June 30, 2009. The ARB responded by amending its original regulation, now referred to as Low Emission Vehicle III GHG, to take effect for model years starting in 2017 to 2025[17].

Executive Order S-3-05 (2005). Governor Arnold Schwarzenegger signed Executive Order S-3-05 on June 1, 2005, which proclaimed that California is vulnerable to the impacts of climate change. To combat those concerns, the executive order established California's GHG emissions reduction targets, which established the following goals:

- GHG emissions should be reduced to 2000 levels by 2010;
- GHG emissions should be reduced to 1990 levels by 2020; and
- GHG emissions should be reduced to 80 percent below 1990 levels by 2050.

The Secretary of the California Environmental Protection Agency (CalEPA) is required to coordinate efforts of various State agencies in order to collectively and efficiently reduce GHGs. A biannual progress report must be submitted to the Governor and State Legislature disclosing the progress made toward GHG emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global warming on California's water supply, public health, agriculture, the coastline, and forestry, and report possible mitigation and adaptation plans to address these impacts.

Assembly Bill 32 (2006), California Global Warming Solutions Act. California's major initiative for reducing GHG emissions is AB 32, passed by the State legislature on August 31, 2006. This effort aims at reducing GHG emissions to 1990 levels by 2020. The ARB has established the level of GHG emissions in 1990 at 427 MMT CO_2e. The emissions target of 427 MMT requires the reduction of 169 MMT from the State's projected business-as-usual 2020 emissions of 596 MMT. AB 32 requires the ARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The Scoping Plan was approved by the ARB on December 11, 2008, and includes measures to reduce GHG emissions related to energy efficiency, water use, recycling, solid waste, and other sources.[18] The Scoping Plan

[17] California Air Resources Board, 2010. *California Clean Car Standards – Pavely, Assembly Bill 1493*. Website: arb.ca.gov/cc/ccms/ccms.htm (accessed November 2011).

[18] California Air Resources Board, 2008. *Climate Change Scoping Plan: a framework for change*. December.

includes a range of GHG reduction actions that may include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. The Scoping Plan, even after ARB approval, remains a recommendation. The measures in the Scoping Plan will not be binding until after they are adopted through the normal rulemaking process. The ARB rulemaking process includes preparation and release of each of the draft measures, public input through workshops, and a public comment period, followed by an ARB hearing and rule adoption.

In addition to reducing GHG emissions to 1990 levels by 2020, AB 32 directed the ARB and the newly created Climate Action Team (CAT) to identify a list of "discrete early action GHG reduction measures" that could be adopted and made enforceable by January 1, 2010. On January 18, 2007, Governor Schwarzenegger signed Executive Order S-1-07, further solidifying California's dedication to reducing GHGs by setting a new Low Carbon Fuel Standard. The Executive Order sets a target to reduce the carbon intensity of California transportation fuels by at least 10 percent by 2020 and directs the ARB to consider the Low Carbon Fuel Standard as a discrete early action measure.

In June 2007, the ARB approved a list of 37 early action measures, including three discrete early action measures (Low Carbon Fuel Standard, Restrictions on GWP Refrigerants, and Landfill CH_4 Capture).[19] Discrete early action measures are measures that were required to be adopted as regulations and made effective no later than January 1, 2010, the date established by Health and Safety Code Section 38560.5. The ARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures. These measures relate to truck efficiency, port electrification, reduction of PFCs from the semiconductor industry, reduction of propellants in consumer products, proper tire inflation, and SF_6 reductions from the non-electricity sector. The combination of early action measures is estimated to reduce State-wide GHG emissions by nearly 16 MMT.[20]

To assist public agencies in analyzing the effects of GHGs under CEQA, Senate Bill 97 (Chapter 185, 2007) required the Governor's Office of Planning and Research (OPR) to develop CEQA guidelines on how to minimize and mitigate a project's GHG emissions. On December 30, 2009, the Natural Resources Agency adopted amendments to the *CEQA Guidelines* related to climate change. These amendments became effective on March 18, 2010.

In June 2008, OPR issued a Technical Advisory[21] providing interim guidance regarding a proposed project's GHG emissions and contribution to global climate change. In the absence of adopted local or Statewide thresholds, OPR recommends the following approach for analyzing GHG emissions: identify and quantify the project's GHG emissions, assess the significance of the impact on climate

[19] California Air Resources Board, 2007. *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration*. October. The Low Carbon Fuel Standard has been the subject of litigation in federal court that is still pending as of June 2012.

[20] California Air Resources Board, 2007. "ARB approves tripling of early action measures required under AB 32" News Release 07-46. Website: www.arb.ca.gov/newsrel/nr102507.htm. October 25.

[21] California, State of, 2008. Office of Planning and Research. *OPR Technical Advisory: CEQA and Climate Change*. Website: opr.ca.gov/docs/june08-ceqa.pdf. June.

change; and if the impact is found to be significant, identify alternatives and/or mitigation measures that would reduce the impact to less-than-significant levels.[22]

In December 2008, ARB adopted its Climate Change Scoping Plan, which contains the main strategies California will implement to achieve reduction of approximately 169 MMT of CO_2e, or approximately 30 percent from the State's projected 2020 emission level of 596 MMT of CO_2e under a business-as-usual scenario (this is a reduction of 42 MMT CO_2e, or almost 10 percent from 2002-2004 average emissions). The Scoping Plan also includes ARB-recommended GHG reductions for each emissions sector of the State's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e);
- The Low-Carbon Fuel Standard (15.0 MMT CO_2e);
- Energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO_2e); and
- A renewable portfolio standard for electricity production (21.3 MMT CO_2e).

The Scoping Plan identifies 18 emission reduction measures that address cap-and-trade programs, vehicle gas standards, energy efficiency, low carbon fuel standards, renewable energy, regional transportation-related GHG targets, vehicle efficiency measures, goods movement, solar roof programs, industrial emissions, high speed rail, green building strategies, recycling, sustainable forests, water, and air. The measures would result in a total reduction of 174 MMT CO_2e by 2020.

On August 24, 2011, the ARB unanimously approved both ARB's new supplemental assessment and re-approved its Scoping Plan, which provides the overall roadmap and rule measures to carry out AB 32. The ARB also approved a more robust CEQA equivalent document supporting the supplemental analysis of the cap-and-trade program. ARB also announced that it would be delaying the date that entities would be required to comply with its cap-and-trade program until 2013.

ARB has not yet determined what amount of GHG reductions it recommends from local government operations; however, the Scoping Plan states that land use planning and urban growth decisions will play an important role in the State's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions (meanwhile, ARB is also developing an additional protocol for community emissions). ARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The Scoping Plan states that the ultimate GHG reduction assignment to local government operations is to be determined. With regard to land use planning, the Scoping Plan expects an approximately 5.0 MMT CO_2e reduction due to implementation of SB 375, which is discussed further below.

[22] California Energy Commission. 2007, op. cit.

Senate Bill 1368 (2006). SB 1368 is the companion bill of AB 32 and was signed by Governor Schwarzenegger in September 2006. SB 1368 requires the California Public Utilities Commission (PUC) to establish a GHG emission performance standard for baseload generation from investor-owned utilities and local publicly-owned utilities These standards cannot exceed the GHG emission rate from a baseload combined-cycle natural gas fired plant. The legislation further requires that all electricity provided to California, including imported electricity, must be generated from plants that meet the standards set by the PUC.

Executive Order S-1-07. Executive Order S-1-07 in 2007 indicates that the transportation sector accounts for over 40 percent of Statewide GHG emissions and establishes a goal to reduce the carbon intensity of transportation fuels sold in California by a minimum of 10 percent by 2020.

Senate Bill 97 (2007). SB 97, signed by the Governor in August 2007 (Chapter 185, Statutes of 2007; Public Resources Code, Sections 21083.05 and 21097), acknowledges climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the OPR to prepare, develop, and transmit to the California Resources Agency guidelines for mitigating GHG emissions or the effects of GHG emissions, as required by CEQA.

The California Natural Resources Agency adopted the amendments to the *CEQA Guidelines* in January 2010, which went into effect in March 2010. The amendments do not identify a threshold of significance for GHG emissions, nor do they prescribe assessment methodologies or specific mitigation measures. The amendments encourage lead agencies to consider many factors in performing a CEQA analysis, but preserve the discretion granted by CEQA to lead agencies in making their own determinations based on substantial evidence. The amendments also encourage public agencies to make use of programmatic mitigation plans and programs when they perform individual project analyses.

Senate Bill 375 (2008). Signed into law on October 1, 2008, SB 375 supplements GHG reductions from new vehicle technology and fuel standards with reductions from more efficient land use patterns and improved transportation. Under the law, the ARB approved GHG reduction targets in February 2011 for California's 18 federally designated regional planning bodies, known as Metropolitan Planning Organizations (MPOs). The ARB may update the targets every 4 years and must update them every 8 years. MPOs in turn must demonstrate how their plans, policies and transportation investments meet the targets set by the ARB through Sustainable Community Strategies (SCS). The SCS are included with the Regional Transportation Plan (RTP), a report required by State law. However, if an MPO finds that their SCS will not meet the GHG reduction target, they may prepare an Alternative Planning Strategy (APS). The APS identifies the impediments to achieving the targets.

Executive Order S-13-08. Governor Schwarzenegger signed Executive Order S-13-08 on November 14, 2008, which directs California to develop methods for adapting to climate change through preparation of a Statewide plan. The executive order directed OPR, in cooperation with the California Resources Agency (CRA), to provide land use planning guidance related to sea level rise and other climate change impacts by May 30, 2009.

Office of Planning and Research. On December 30, 2009, the California Natural Resources Agency adopted amendments to the *CEQA Guidelines* related to Climate Change. These amendments

became effective on March 18, 2010. Revisions to Appendix G of the *CEQA Guidelines* suggest that development projects be evaluated based on the following thresholds:

- Would the project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; and
- Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

(3) El Dorado County Air Quality Management District GHG Policies. The El Dorado County AQMD and El Dorado County Planning have unofficially adopted the GHG thresholds established by the San Luis Obispo Air Pollution Control District (SLOAPCD). El Dorado County AQMD describes that the SLOAPCD thresholds would be applicable under their jurisdiction for the following reasons: (1) the California Emissions Estimator Model (CalEEMod) was used to develop the threshold; (2) SLOAPCD had completed a CEQA review of the threshold which has not been challenged in court; and (3) because of similarities in size and population between the two counties, and topographical and infrastructure similarities (e.g., only one major highway through each county). SLOAPCD's annual GHG threshold is 1,150 MT/CO_2e.

(4) El Dorado County GHG Policies. On March 25, 2008, the El Dorado County Board of Supervisors adopted the "Environmental Vision for El Dorado County" Resolution No. 29-2008.[23] The Resolution sets forth goals and calls for implementation of positive environmental changes to reduce global impact, improve air quality, reduce dependence on landfills, promote alternative energies, increase recycling, and encourage local governments to adopt green and sustainable practices. The Resolution includes the following goals pertaining to Transportation, Traffic and Transit, and to Planning and Construction:

- Transportation, Traffic and Transit
  - Reduce carbon emissions and greenhouse gases.
  - Promote carpooling and reduce vehicle miles traveled.
  - Promote pedestrian and bicycling commuting.
  - Expand transit opportunities.
  - Utilize clean-fueled vehicles for county employees.
  - Promote programs and designs that reduce traffic congestion.
- Planning and Construction
  - Promote the use of clean, recycled, and "green" materials and building practices.
  - Distribute available environmental education information in construction permit packages including energy and water efficiency in new construction.
  - Promote the design of sustainable communities.
  - Encourage pedestrian/cycling-incentive planning.

[23] El Dorado County, 2006. *Air Quality Technical Report, Regional Transportation Plan.* August 26.

- Involve the Public Health Department in community planning to provide comment on community health.
- Encourage energy-efficient development.
- Updates to the Zoning Ordinance should include provisions to allow and encourage use of solar, wind and other renewable energy resources

2. Impacts and Mitigation Measures

This section evaluates significant impacts to global climate change that could result from implementation of the proposed project. The section begins with the criteria of significance. Where significant impacts are identified, mitigation measures are specified.

a. Criteria of Significance. This EIR analyzes whether the project's GHG emissions would be cumulatively significant. Accordingly, the proposed project would result in significant adverse impacts on global climate change if it would:

- Generate annual greenhouse gas emissions, either directly or indirectly in excess of 1,150 MT CO_2e per year; or
- Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

b. Project Impacts. The following discussion describes the potential global climate change impacts related to implementation of the proposed project.

(1) Construction GHG Emissions. Combustion emissions would be produced from various sources. These include heavy equipment doing site demolition and grading, trucks hauling materials to and from the site, and motor vehicles transporting the construction crew. Exhaust emissions from on-site construction activities would vary daily as construction activity levels change. Producing cement and building materials also produces CO_2 and other GHGs, although these are not accounted for in this report.

Table IV.E-2: Annual Project Construction CO_2 Emissions

Year	Metric Tons CO_2e Emissions
2014	627.8
2015	1,438.0
2016	1,481.7
2017	1,263.9
2018	311.0
Total	5,122.4

Source: LSA Associates, Inc., 2013.

The El Dorado County AQMD prefers the use of CalEEMod for quantification of project-related GHG and criteria pollutant emissions for both construction and operational emissions. CalEEMod is a statewide model providing a uniform GHG analysis platform for government agencies, land use planners, and environmental professionals. It quantifies direct emissions from construction and operation (including vehicle use), and indirect emissions from energy use, solid waste disposal, vegetation planting and/or removal, and water use. The software incorporates the most recent vehicle emission factors from the Emission Factors (EMFAC) model provided by ARB, and average trip generation factors published by the Institute of Transportation Engineers (ITE). The model uses and quantifies mitigation measures reduction benefits found in the California Air

Pollution Control Officers Association (CAPCOA) document *Quantifying Greenhouse Gas Mitigation Measures*,[24] and is accepted by the ARB.

Development of the proposed project requires demolition of an existing building and grading of the project site. Construction equipment CO_2 emissions come primarily from diesel fuel combustion. Worker trips also contribute emissions. CalEEMod v. 2013.2 was used to calculate CO_2 emissions based on a general understanding of the project schedule. Construction is anticipated to begin in 2014 and continue until 2018. Annual project construction would emit CO_2 as shown in Table IV.E-2. Modeling output sheets are included in Appendix C. Construction GHG emissions are a one-time release and, therefore, typically not expected to generate a significant contribution to global climate change. In order to present a worst-case scenario, the proposed project's construction-related GHG emissions have been amortized over the lifetime of the proposed project and included with the operational GHG emissions.

(2) Operational GHG Emissions. Long-term operation of the proposed project would generate GHG emissions from area and mobile sources, and indirect emissions from sources associated with energy consumption. Mobile-source emissions of GHGs would include project-generated vehicle trips associated with residential vehicle trips to the project site. Area-source emissions would occur from burning natural gas for heating buildings and producing electricity consumed by future residents of the project. Operational emissions estimates for the proposed project are discussed below and were calculated consistent with the methodology recommended in the El Dorado County AQMD's *CEQA Guide to Air Quality Assessment* adopted in February 2002 and with current recommendations of the AQMD.

Methodology. The methodology and qualitative description of the sources of GHG emissions from transportation, electricity, water use and solid waste disposal are described below. GHG emissions were estimated using the CalEEMod model. To operate CalEEMod, specifics on project size (number of units), construction data, information on sources such as fireplaces, and operations were "input" to the model. Trip lengths default values were used in the model. Trip Generation data used in the model was based on the project's traffic impact analysis.[25] Various mitigations can be selected including mix of uses, local serving transit, presence of bike and pedestrian facilities, affordable housing components, transportation demand management, parking supply and on-road trucks. CalEEMod also allows corrections for pass-by trips and corrects for double-counting.

Transportation. Transportation creates GHG emissions from fossil fuels combustion. The CalEEMod model calculates that approximately 60 percent of total proposed project GHG emissions are in this category. CalEEMod uses the trip data, including fleet mix, trip length specific to the community, and the trip generation estimates to calculates GHG emissions.

Electricity and Natural Gas. The project is anticipated to increase the use of electricity and natural gas. Energy consumption would be about 26 percent of on-going project GHG emissions.

[24] California Air Pollution Control Officers Association, 2010. *Quantifying Greenhouse Gas Mitigation Measures.* Website: www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf. August.

[25] Kimley-Horn, 2013. *Dixon Ranch Residential Project Traffic Impact Analysis.* June.

CalEEMod uses standard gas consumption factors for various land uses that are provided by the utility companies and the State Energy Commission.

Area Source. The project is expected to generate GHG emissions associated with hearths, consumer products, architectural coatings and landscaping equipment. Consumer products include cleaning supplies, kitchen aerosols, cosmetics and toiletries. Architectural coating emissions are generated from paint VOC emissions including paint reapplications. Landscape emissions include use of leaf blowers, lawn mowers and other gasoline fueled equipment. Default settings in CalEEMod were used to calculate GHG emissions from area sources.

Water and Wastewater. Energy use and related GHG emissions are based on water supply and conveyance, water treatment, water distribution, and wastewater treatment. Water usage and waste-water generation are about 2 percent of total project GHG emissions. CalEEMod uses local data to generate these factors.

Solid Waste Disposal. Solid waste generated by the project would contribute about 2 percent of expected GHG emissions.

Project Emissions. The long-term project operational GHG emissions estimate incorporates potential area source and vehicle emissions, utility, water usage, wastewater and solid waste generation emissions. The proposed project's construction-related GHG emissions have been amortized over the lifetime of the project (50 years) and included with the annual operational GHG emissions in order to present a worst-case scenario. Expected emissions under the opening year conditions with the project are shown in Table IV.E-3.

Table IV.E-3: Dixon Ranch Residential Project – Unmitigated GHG Emissions

Source	Metric Tons Per Year CO_2e	Percent of Total
Transportation	5,481.1	60
Energy	2,358.4	26
Area Source	921.9	10
Water & Wastewater	136.6	2
Solid Waste	196.8	2
Total	**9,094.6**	**100**

Source: LSA Associates, Inc., 2013.

Section IV.D, Air Quality, of this EIR contains mitigation measures that when incorporated into the project would minimize criteria pollutants (i.e., ozone precursors). These mitigation measures would also reduce GHG emissions. Additional measures outlined in Mitigation Measure GHG-1 shall also be implemented to reduce GHG emissions to the extent feasible. GHG emissions with the implementation of Mitigation Measure GHG-1 are shown in Table IV.E-4.

Table IV.E-4: Dixon Ranch Residential Project – Mitigated GHG Emissions

Source	Metric Tons Per Year CO_2e	Percent of Total
Transportation	4,960.6	65
Energy	1,977.4	26
Area Source	438.5	6
Water & Wastewater	126.5	1
Solid Waste	157.4	2
Total	**7,660.4**	**100**

Source: LSA Associates, Inc., September 2013.

Impact GHG-1: Construction and operation of the proposed project – in combination with emissions from other past, present, and reasonably probable future projects – would result in GHG emissions that would have a significant physical adverse impact and would significantly and cumulatively contribute to global climate change. The project's incremental impacts from GHG emissions are also cumulatively considerable. (S)

Mitigation Measure GHG-1: The following measures shall be incorporated into project design to reduce project GHG emissions:

- Implement Mitigation Measures AIR-2 and AIR-3.
- Building construction shall exceed the energy efficiency standards of Title 24 through application of the 2013 California Green Building Standards Code mandatory measures adopted by the County.
- All homes shall be equipped with exterior outlets on structures to facilitate the use of electric powered landscape equipment.
- All new homes shall be equipped with high efficiency lighting.
- The project applicant shall develop a water conservation strategy to reduce indoor and outdoor water use by approximately 20 percent over standard building construction practices.
    - The project applicant shall implement the 2013 Plumbing Code to reduce indoor and outdoor water use by installing low-flow bathroom faucets, kitchen faucets, toilets and showers, and project landscaping that utilizes water-efficient plants and irrigation systems.
- The project applicant shall ensure the recycling and composting services available from El Dorado County Disposal are provided to the residents of the project site.
- The project shall provide a pedestrian access network that internally links all uses and connects to all existing or planned external streets and pedestrian facilities contiguous with the project site.
- The project shall incorporate all 2013 California Green Building Standard Code Residential Voluntary Tier 1 Measures (Residential Voluntary Measures included in Appendix A4, Division A4.6, Tier 1), except the following:
    - Section A4.106.8 regarding installation of Level 2 EV charging stations in garages and/or parking lots;
    - Section A4.106.4 regarding permeable paving utilized for parking, walking or patio surfaces;
    - Section A4.403.2 regarding reduction in cement use; and
    - Section A4.405.3 regarding post-consumer and pre-consumer recycled content value (RCV) materials use in the project.

As shown in Table IV.E-4, even with implementation of a comprehensive set of mitigation measures applied to the project, project level GHG emissions would reduce project emissions by less than 19 percent to 7,660.4 metric tons of CO_2e per year, which would be above the threshold of 1,150 metric tons per year. Therefore, even with these mitigations, the GHG emissions impact is considered significant and unavoidable. (SU)

(3) Consistency with Plans and Policies Related to Greenhouse Gases. The California Environmental Protection Agency Climate Action Team (CAT) and the ARB have developed several reports to achieve the Governor's GHG targets that rely on voluntary actions of California businesses, local government and community groups, and State incentive and regulatory programs. These include the CAT's 2006 "Report to Governor Schwarzenegger and the Legislature," ARB's 2007 "Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California," and ARB's "Climate Change Scoping Plan: a Framework for Change." The reports identify strategies to reduce California's emissions to the levels proposed in Executive Order S-3-05 and AB 32, which requires a reduction in GHG emissions by 2020 to 1990 levels, a reduction of approximately 30 percent. The adopted Scoping Plan includes proposed GHG reductions from direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as cap-and-trade systems.

In addition to reducing GHG emissions to 1990 levels by 2020, AB 32 directed ARB to identify a list of "discrete early action GHG reduction measures" that can be adopted and made enforceable by January 1, 2010. In June 2007, ARB approved a list of 37 early action measures, including three discrete early action measures (Low Carbon Fuel Standard, Restrictions on High Global Warming Potential Refrigerants, and Landfill Methane Capture). Discrete early action measures are measures that are required to be adopted as regulations and made effective no later than January 1, 2010, the date established by Health and Safety Code (HSC) Section 38560.5. The ARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures.

ARB's focus in identifying the 44 early action items was to recommend measures that ARB staff concluded were "expected to yield significant GHG emission reductions, are likely to be cost-effective and technologically feasible." The combination of early action measures is estimated to reduce State-wide GHG emissions by nearly 16 million metric tons (MMT). Accordingly, the 44 early action items focus on industrial production processes, agriculture, and transportation sectors. Early action items associated with industrial production and agriculture do not apply to the proposed project. The transportation sector early action items such as truck efficiency, low carbon fuel standard, proper tire inflation, truck stop electrification and strengthening light duty vehicle standards are either not specifically applicable to the proposed project or would result in a reduction of GHG emissions associated with the project. State measures include emission reductions assumed as part of the Scoping Plan, including light-duty vehicle GHG standards ("Pavley standards"), low carbon fuel standard, and energy efficiency measures.

Impact GHG-2: The proposed project would conflict with plans adopted for the purpose of reducing GHG emissions. (S)

The proposed project would not conflict with the measures outlined in the existing California legislation adopted to reduce Statewide GHG emissions. However, as shown in the analysis above, even with the implementation of comprehensive measures to reduce GHG emissions, the measures would only reduce emissions by 19 percent, which would not meet the State's goal of reducing emissions by 30 percent by 2020. Therefore, the proposed project would conflict with an applicable plan, policy or regulation for the purpose of reducing greenhouse gas emissions, and the project would have a significant and unavoidable impact.

> Mitigation Measure GHG-2: Implement Mitigation Measure GHG-1. Even with the implementation of comprehensive measures to reduce GHG emissions, the project would still have a significant and unavoidable impact. (SU)

F. NOISE

This section describes existing noise and vibration conditions, sets forth criteria for determining the significance of noise and vibration impacts, and estimates the likely noise and vibration impacts that would result from development of the proposed project. Mitigation measures are identified, as required, to address significant environmental impacts. Noise modeling data is provided in Appendix D.

1. Setting

This noise assessment follows the El Dorado County noise standards, which include the County's Noise Element and County Code Noise Control Ordinance. This section describes the fundamentals of noise, the applicable regulatory framework, and the existing noise and vibration setting within the project site and its vicinity.

a. Fundamentals of Noise. The characteristics and measurements of sound are described below.

(1) Characteristics of Sound. Noise is generally defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is the number of complete vibrations or cycles per second of a wave that results in the range of tone from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment, and it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound’s effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effects on adjacent sensitive land uses.

(2) Measurement of Sound. Sound is characterized by various parameters that describe the rate of oscillation (frequency) of sound waves, the distance between successive troughs or crests in the wave, the speed that it travels, and the pressure level or energy content of a given sound. The sound pressure level has become the most common descriptor used to characterize the loudness (or amplitude) of an ambient sound, and the decibel (dB) scale is used to quantify sound intensity. A decibel (dB) is a unit of measurement which indicates the relative intensity of a sound. The 0 point on the dB scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Changes of 3 dB or less are only perceptible in laboratory environments. Audible increases in noise levels generally refer to a change of 3 dB or more, as this level has been found to be barely perceptible to the human ear in outdoor environments.

Because sound can vary in intensity by over one million times within the range of human hearing, a logarithmic loudness scale is used to keep sound intensity numbers at a convenient and manageable level. Thus, a 10 dBA increase in the level of a continuous noise represents a perceived doubling of loudness, while a 20 dBA increase is 100 times more intense, and a 30 dBA increase is 1,000 times more intense. As noise spreads from a source, it loses energy so that the farther away the noise receiver is from the noise source, the lower the perceived noise level. Noise levels diminish or attenuate as distance from the source increases based on an inverse square rule, depending on how the

noise source is physically configured. Noise levels from a single-point source, such as a single piece of construction equipment at ground level, attenuate at a rate of 6 dB for each doubling of distance (between the single-point source of noise and the noise-sensitive receptor of concern). Heavily traveled roads with few gaps in traffic behave as continuous line sources and attenuate roughly at a rate of 3 dB per doubling of distance.

Since the human ear is not equally sensitive to all pitches (sound frequencies) within the entire spectrum, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity in a process called "A-weighting," expressed as "dBA." The dBA or A-weighted decibel refers to a scale of noise measurement that approximates the range of sensitivity of the human ear to sounds of different frequencies. Table IV.F-1 contains a list of typical acoustical terms and definitions.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound, including during sensitive times of the day and night. The equivalent continuous sound level (L_{eq}) is the total sound energy of time varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq}, the community noise equivalent level (CNEL), and the day-night average level (L_{dn}) based on A-weighted decibels (dBA). CNEL is the time varying noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and 10 dBA weighting factor applied to noise occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale, but without the adjustment for events occurring during the evening relaxation hours. CNEL and L_{dn} are within 1 dBA of each other and are normally exchangeable. The noise adjustments are added to the noise events occurring during the more sensitive hours. Typical A-weighted sound levels from various sources are identified in Table IV.F-2.

When assessing the annoyance factor, other noise rating scales of importance include the maximum noise level (L_{max}), which is the highest exponential time averaged sound level that occurs during a stated time period. The noise environments discussed in this analysis are specified in terms of maximum levels denoted by L_{max} for short-term noise impacts. L_{max} reflects peak operating conditions and addresses the annoying aspects of intermittent noise.

Noise impacts can be organized into three categories. The first category comprises audible increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3.0 dBA or greater, since, as described earlier, this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1.0 and 3.0 dBA. This range of noise levels has been found to be noticeable only in laboratory environments. The last category is changes in noise level of less than 1.0 dBA that are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Table IV.F-1: Definitions of Acoustical Terms

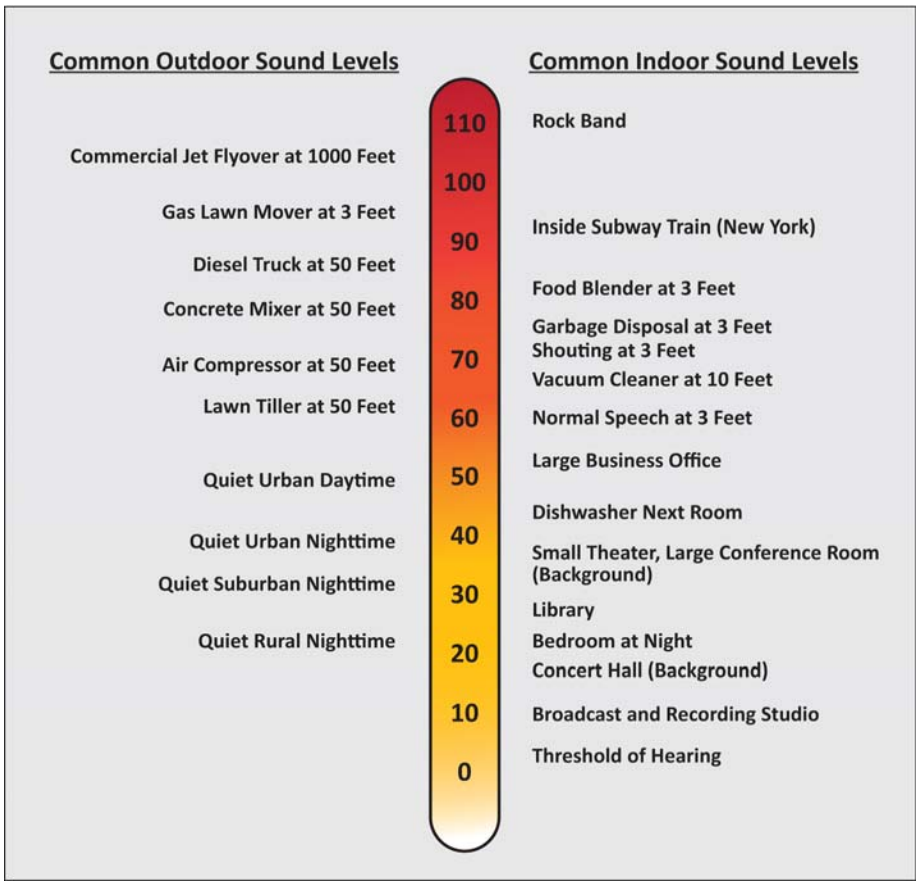
Term	Definitions
Decibel, dB	A unit that denotes the ratio between two quantities proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this section are A-weighted, unless reported otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The fast A-weighted noise levels equaled or exceeded by a fluctuating sound level for 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 decibels to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 decibels to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Harris, Cyril M., 1998. Handbook of Acoustical Measurements and Noise Control.

(3) Physiological Effects of Noise. According to the U.S. Department of Housing and Urban Development's 1985 Noise Guidebook, permanent physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 to 90 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions, and thereby affecting blood pressure, functions of the ear, and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. To avoid adverse effects on human physical and mental health in the workplace or in communities, the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA) requires the protection of workers from hearing loss when the noise exposure equals or exceeds an 8-hour time-weighted average of 85 dBA.

Unwanted community effects of noise occur at levels much lower than those that cause hearing loss and other health effects. Noise annoyance occurs when it interferes with sleeping, conversation, and noise-sensitive work, including learning or listening to the radio, television, or music. According to World Health Organization (WHO) noise studies, few people are seriously annoyed by daytime activities with noise levels below 55 dBA, or are only moderately annoyed with noise levels below 50 dBA.

Table IV.F-2: Common Sound Levels and Noise Sources



Source: Compiled by LSA Associates, Inc., 2009.

b. Regulatory Framework. The regulatory framework associated with noise is described below.

(1) U.S. Environmental Protection Agency (EPA). In 1972 Congress enacted the Noise Control Act. This act authorized the EPA to publish descriptive data on the effects of noise and establish levels of sound "requisite to protect the public welfare with an adequate margin of safety." These levels are separated into health (hearing loss levels) and welfare (annoyance levels), as shown in Table IV.F-3. The EPA cautions that these identified levels are not standards because they do not take into account the cost or feasibility of the levels.

For protection against hearing loss, 96 percent of the population would be protected if sound levels are less than or equal to an L_{eq} (24) of 70 dBA. The "(24)" signifies an L_{eq} duration of 24 hours. The EPA activity and interference guidelines are designed to ensure reliable speech communication at about 5 feet in the outdoor environment. For outdoor and indoor environments, interference with activity and annoyance should not occur if levels are below 55 dBA and 45 dBA, respectively.

The noise effects associated with an outdoor L_{dn} of 55 dBA are summarized in Table IV.F-4. At 55 dBA L_{dn}, 95 percent sentence clarity (intelligibility) may be expected at 11 feet, and no substantial

community reaction. However, 1 percent of the population may complain about noise at this level and 17 percent may indicate annoyance.

Table IV.F-3: Summary of EPA Recommended Noise Levels

To Effect Prevention of	Level	Area
Hearing loss	$L_{eq}(24) \leq 70$ dB	All areas.
Outdoor activity interference and annoyance	$L_{dn} \leq 55$ dB	Outdoors in residential areas and farms and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use.
	$L_{eq}(24) \leq 55$ dB	Outdoor areas where people spend limited amounts of time, such as school yards, playgrounds, etc.
Indoor activity interference and annoyance	$L_{eq} \leq 45$ dB	Indoor residential areas.
	$L_{eq}(24) \leq 45$ dB	Other indoor areas with human activities such as schools, etc.

Source: U.S. Environmental Protection Agency, 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. March.

Table IV.F-4: Summary of Human Effects in Areas Exposed to 55 dBA L_{dn}

Type of Effects	Magnitude of Effect
Speech – Indoors	100 percent sentence intelligibility (average) with a 5 dB margin of safety.
Speech – Outdoors	100 percent sentence intelligibility (average) at 0.35 meter. 99 percent sentence intelligibility (average) at 1.0 meter. 95 percent sentence intelligibility (average) at 3.5 meters.
Average Community Reaction	None evident; 7 dB below level of significant complaints and threats of legal action and at least 16 dB below "vigorous action."
Complaints	1 percent dependent on attitude and other non-level related factors.
Annoyance	17 percent dependent on attitude and other non-level related factors.
Attitude Towards Area	Noise essentially the least important of various factors.

Source: U.S. Environmental Protection Agency, 1974. *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. March.

(2) State of California. The State of California has established regulations that help prevent adverse impacts to occupants of buildings located near noise sources. The "State Noise Insulation Standard" requires noise-sensitive land uses to meet performance standards through design and/or building materials that would offset any noise source in the vicinity of the building. The State has also established land use compatibility guidelines for determining acceptable noise levels for specified land uses. The County of El Dorado has adopted the State's land use compatibility guidelines, as discussed below.

(3) County of El Dorado. The County of El Dorado addresses noise in the Noise Element of the General Plan[1] and in the ordinances of the County Code.[2]

Based on the noise standards of the General Plan, the County's maximum allowable noise exposure guidelines for transportation noise sources are shown in Table IV.F-5. As shown in the table,

[1] El Dorado County, 2004. *El Dorado County General Plan*. July.

[2] El Dorado County, 2012. *El Dorado County Code of Ordinances*. April 27.

maximum noise levels of up to 60 dBA L_{dn} from transportation noise sources are considered normally acceptable for new residential development as measured at the receiving outdoor active use areas.

However, where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn} or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn} may be allowed provided that available exterior noise level reduction measures have been implemented and acceptable interior noise levels are maintained. Where noise mitigation measures are required, the emphasis shall be on site planning and project design; the use of noise barriers shall be considered after all other feasible noise mitigation measures have been integrated into the project.

In areas with existing or projected transportation-related noise levels of less than 60 dBA L_{dn}, as measured at the outdoor active use areas of existing residential uses, a project-related increase of more than 5 dBA would be considered significant for a new development project. Where existing or projected traffic noise levels range between 60 and 65 dBA L_{dn} at outdoor activity areas of residential uses, an increase of more than 3 dBA caused by a new transportation noise source will be considered significant. Similarly, for areas with noise levels in excess of 65 dBA L_{dn}, an increase of 1.5 dBA from a new transportation noise source will be considered significant.

The County has also established noise level performance standards for non-transportation noise sources. The daytime noise level standard for community areas is 55 dBA L_{eq}, with maximum noise levels not permitted to exceed 70 dBA L_{max} as measured at receiving noise sensitive land uses; the nighttime noise level standards are 45 dBA L_{eq} and 55 dBA L_{max}. New noise sensitive uses would not be permitted where noise levels from non-transportation noise sources exceed these standards, unless measures are implemented to achieve these standards. The County considers permanent increases of more than 5 dBA from non-transportation noise sources a significant impact in areas in which ambient noise levels are within the County's acceptable standards for these noise sources; in areas where existing ambient noise levels exceed the County's acceptable standards, an increase of more than 3 dBA shall be considered significant.

According to the Noise Element and General Plan policies under Objective 6.5.1, noise producing construction activities are only permitted from 7:00 a.m. to 7:00 p.m. Monday through Friday, and from 8:00 a.m. to 5:00 p.m. on weekends and federally recognized holidays. In addition, the maximum allowable noise exposure for receiving higher-density residential land uses from construction noise is 55 dBA L_{eq} and 75 dBA L_{max}.

The Draft Chapter 17.37–Noise Standards in the County's Public Review Draft Zoning Ordinance also generally prohibit loud and raucous noise that would unreasonably interfere with the peace and quiet of another's private property; however, these noise standards are not yet adopted.[3]

[3] El Dorado County, 2012. *Public Review Draft Zoning Ordinance.* October 1.

Table IV.F-5: Maximum Allowable Noise Exposure for Transportation Noise Sources

Land Use	Outdoor Activity Areas[a] L_{dn}/CNEL, dB	Interior Spaces	
		L_{dn}/CNEL, dB	L_{eq}, dB[b]
Residential	60[c]	45	–
Transient Lodging	60[c]	45	–
Hospitals, Nursing Homes	60[c]	45	–
Theaters, Auditoriums, Music Halls	–	–	35
Churches, Meeting Halls, Schools	60[c]	–	40
Office Buildings	–	–	45
Libraries, Museums	–	–	45
Playgrounds, Neighborhood Parks	70	–	–

[a] In Communities and Rural Centers, where the location of outdoor activity areas is not clearly defined, the exterior noise level standard shall be applied to the property line of the receiving land use. For residential uses with front yards facing the identified noise source, an exterior noise level criterion of 65 dB L_{dn} shall be applied at the building facade, in addition to a 60 dB L_{dn} criterion at the outdoor activity area. In Rural Regions, an exterior noise level criterion of 60 dB L_{dn} shall be applied at a 100 foot radius from the residence unless it is within Platted Lands where the underlying land use designation is consistent with Community Region densities in which case the 65 dB L_{dn} may apply. The 100-foot radius applies to properties which are five acres and larger; the balance will fall under the property line requirement.

[b] As determined for a typical worst-case hour during periods of use.

[c] Where it is not possible to reduce noise in outdoor activity areas to 60 dB L_{dn}/CNEL or less using a practical application of the best-available noise reduction measures, an exterior noise level of up to 65 dB L_{dn}/CNEL may be allowed provided that available exterior noise level reduction measures have been implemented and interior noise levels are in compliance with this table.

Source: El Dorado County, 2004. *2004 El Dorado County General Plan*. July 19.

c. Existing Setting. The existing noise setting for the proposed project is described below.

(1) Sensitive Land Uses in the Project Vicinity. The project site is bordered by high- and low-density residential land uses to the west, low-density residential uses to the north, and undeveloped and low-density residential uses to the east and south. These sensitive land uses may potentially be affected by noise generated during on-site construction.

(2) Overview of the Existing Noise Environment. The primary existing noise sources in the project area are transportation facilities. Traffic on Green Valley Road and other local streets is a steady source of ambient noise in the project vicinity. The Federal Highway Administration (FHWA) Highway Traffic Noise Prediction Model (FHWA RD-77-108) was used to evaluate traffic related noise conditions in the vicinity of the project site. This model requires various parameters, including traffic volumes, vehicle mix, vehicle speed, and roadway geometry, to compute typical equivalent noise levels during daytime, evening, and nighttime hours. The existing average daily traffic (ADT) volumes in the area were taken from the traffic impact analysis prepared for this project and summarized in the Section IV.C, Transportation and Circulation of this EIR. The resultant noise levels are weighted and summed over 24-hour periods to determine the L_{dn} values. Table IV.F-6 provides the existing (2013) traffic noise levels adjacent to roadway segments in the project vicinity. The specific assumptions used in developing these noise levels and the model printouts are provided in Appendix D.

Table IV.F-6: Existing Traffic Noise Levels

Roadway Segment	ADT	Centerline to 70 dBA L_{dn} (feet)	Centerline to 65 dBA L_{dn} (feet)	Centerline to 60 dBA L_{dn} (feet)	L_{dn} (dBA) 50 feet from Centerline of Outermost Lane
Green Valley Road - Francisco Drive to El Dorado Hills Blvd	14,600	< 50	108	229	67.7
Green Valley Road - El Dorado Hills Blvd to Silva Valley Parkway	14,400	< 50	105	226	69.1
Green Valley Road - Silva Valley Parkway to Loch Way	10,300	< 50	99	212	68.7
Green Valley Road - Loch Way to Wilson Estates Connector	10,100	< 50	97	210	68.6
Green Valley Road - Wilson Estates Connector to Malcolm Dixon Road	10,100	< 50	97	210	68.6
Green Valley Road - Malcolm Dixon Road to Site Access RIRO	10,100	< 50	97	210	68.6
Green Valley Road - Site Access RIRO to Site Access Full	10,100	< 50	97	210	68.6
Green Valley Road - Site Access Full to Deer Valley Road	10,100	< 50	97	210	68.6
Green Valley Road - Deer Valley Road to Silver Springs Parkway	9,800	< 50	96	205	68.5
Green Valley Road - Silver Springs Parkway to Bass Lake Road	10,400	< 50	99	214	68.8
Green Valley Road - Bass Lake Road to Cambridge Road	11,600	< 50	107	230	69.2
Green Valley Road - Cambridge Road to Cameron Park Drive	9,400	< 50	93	200	67.7

[a] Average daily trips are estimated based on the peak hour traffic volumes.
[b] Traffic noise within 50 feet of the roadway centerline requires a site-specific analysis.
Note: Shaded cells indicate roadway segments adjacent to the project site.

Source: LSA Associates, Inc., 2013.

As shown in Table IV.F-6, modeled existing traffic noise levels along arterial roadway segments in the project vicinity range from approximately 67 dBA to 69 dBA L_{dn} at 50 feet from the centerline of the outermost travel lane.

2. Impacts and Mitigation Measures

This section analyzes the potential noise impacts that could result from implementation of the proposed project. This section begins with a listing of the criteria of significance, which establishes the threshold for determining whether an impact is significant. The latter part of this section presents potential noise impacts associate with the proposed project. Mitigation measures are recommended, as appropriate.

a. Criteria of Significance. A project will normally have a significant effect on the noise environment if it will substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and goals of the community. For purposes of this analysis, a noise impact is considered significant if the project would:

- Expose persons to or generate excessive groundborne vibration or groundborne noise levels;
- Expose persons to or generate noise levels in excess of standards established in the County's General Plan or noise ordinance, or applicable standards of other agencies;
- Cause a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; or
- Cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

b. Project Impacts. This section analyzes the potential noise impacts that could result from implementation of the Dixon Ranch project. Mitigation measures are recommended, as appropriate.

(1) Groundborne Vibration Impacts. Groundborne noise in buildings and structures is produced when interior surfaces such as walls and floors are "excited" into motion by groundborne vibration transmitted into a given structure. In general, groundborne vibration from standard construction practices is only a potential issue when within 25 feet of sensitive uses. Because construction is not proposed within 25 feet of any existing sensitive structures, the potential impact of groundborne vibration is considered less than significant. Additionally, operation of the proposed project would not be a source of groundborne vibration. Therefore, the proposed project would not expose persons to or generate excessive groundborne vibration or noise levels; any potential impact would be less-than-significant and no mitigation is necessary.

(2) Construction Noise Impacts. Implementation of the proposed project would include construction activities that would result in a substantial temporary increase in ambient noise levels in the project site vicinity above levels existing without the project, but would no longer occur once construction is completed. Additionally, there would be construction noise with any off-site improvements. Potential impacts are discussed in more detail below.

<u>Impact NOI-1</u>: Project construction activities could result in noise levels in excess of the County's noise performance standards for construction activities as measured at adjacent residential land uses. (S)

Short-term noise impacts would be associated with the excavation, grading, and erection of buildings on site during construction of the proposed project, as well as off-site improvements. Construction related short-term noise levels would be higher than existing ambient noise levels in the project area today, but would cease once project construction is completed.

Two types of short-term noise impacts would occur during site preparation and project construction. The first type would result from the increase in traffic flow on local streets, associated with the transport of workers, equipment, and materials to and from the project site.

The transport of workers and construction equipment and materials to the project site would incrementally increase noise levels on access roads leading to the site. Because workers and construction equipment would use existing routes, noise from passing trucks would be similar to existing vehicle-generated noise on these local roadways. For this reason, short-term intermittent noise from trucks would be minor when averaged over a longer time period and would not be expected to exceed

existing peak noise levels in the project vicinity. Therefore, short-term construction-related noise associated with worker and equipment transport to the proposed project site would result in a less-than-significant impact on receptors along the access routes leading to the site.

The second type of short-term noise impact is related to noise generated during site-preparation, grading, and construction on the site. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site. Therefore, the noise levels vary as construction progresses. Despite the variety in the types and sizes of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction related noise ranges to be categorized by work phase. Table IV.F-7 lists the maximum noise levels recommended for noise impact assessments for typical construction equipment based on a distance of 50 feet between the equipment and a noise receptor. Typical maximum noise levels range up to 91 dBA L_{max} at 50 feet during the noisiest construction phases. The site preparation phase, which includes excavation and grading of the site, tends to generate the highest noise levels because the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as bulldozers, draglines, backhoes, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three or four minutes at lower power settings.

Table IV.F-7: Typical Construction Equipment Maximum Noise Levels, L_{max}

Type of Equipment	Impact Device? (Yes/No)	Specification Maximum Sound Levels for Analysis (dBA at 50 feet)
Impact Pile Driver	Yes	95
Auger Drill Rig	No	85
Vibratory Pile Driver	No	95
Jackhammers	Yes	85
Pneumatic Tools	No	85
Pumps	No	77
Scrapers	No	85
Cranes	No	85
Portable Generators	No	82
Rollers	No	85
Dozers	No	85
Tractors	No	84
Front-End Loaders	No	80
Backhoe	No	80
Excavators	No	85
Graders	No	85
Air Compressors	No	80
Dump Truck	No	84
Concrete Mixer Truck	No	85
Pickup Truck	No	55

Source: FHWA, 2006. *Highway Construction Noise Handbook*, August.

Construction of the proposed project is expected to require the use of scrapers, bulldozers, water trucks, haul trucks, and pickup trucks. Based on the information in Table IV.F-7, the maximum noise level generated by each scraper is assumed to be 85 dBA L_{max} at 50 feet from the operating scraper. Each bulldozer would also generate 85 dBA L_{max} at 50 feet. The maximum noise level generated by graders is approximately 85 dBA L_{max} at 50 feet from these vehicles. Each doubling of the sound sources with equal strength increases the noise level by 3 dBA. Assuming that each piece of construction equipment operates at some distance from the other equipment, the worst case combined noise level during this phase of construction would be 90 dBA L_{max} at a distance of 50 feet from an active construction area.

Existing residential uses in the project vicinity are as close as 50 feet from the proposed project construction area. Compliance with the hours specified in County policies regarding construction

activities, as well as implementation of best management noise reduction practices (such as those described in Mitigation Measure NOI-1), would help reduce construction noise impacts on adjacent noise sensitive land uses when construction occurs near the project boundaries. At a distance of 500 feet, maximum anticipated construction noise levels would attenuate to below 75 dBA L_{max}. However, construction noise levels for receptors within 500 feet of the project boundaries could still result in exceedances of the County's maximum allowable noise exposure standard of 55 dBA L_{eq} and 75 dBA L_{max} for receiving residential land uses. Even with implementation of additional measures, such as temporary sound barriers along all portions of the project boundary during periods when use of heavy construction equipment is used, it would not be feasible to reduce construction noise levels during the loudest phase of construction (the site preparation phase when heavy construction equipment is used) to below the County's threshold for construction noise when construction occurs near the project boundaries. For example, a 10-foot-high temporary soundwall would be expected to achieve only a maximum reduction of 10 dBA, which would not sufficiently reduce potential construction noise to acceptable levels (i.e., 90 dBA – 10 dBA = 80 dBA). Therefore this impact would remain significant and unavoidable. To reduce construction noise to the extent feasible, the following measure shall be implemented.

Mitigation Measure NOI-1: The applicant and/or project contractor shall implement the following measures:

- All construction equipment must have appropriate sound muffling devices, which shall be properly maintained and used at all times such equipment is in operation.
- The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.
- The construction contractor shall locate on-site equipment staging areas so as to maximize the distance between construction-related noise sources and noise-sensitive receptors nearest the project site during the construction period.
- All noise producing construction activities, including warming-up or servicing equipment and any preparation for construction, shall be limited to the hours between 7:00 a.m. and 7:00 p.m. on weekdays, and between 8:00 a.m. and 5:00 p.m. on weekends and federally recognized holidays.

Even with implementation of these measures, maximum anticipated construction noise levels would still be anticipated to exceed the County's construction noise threshold of 75 dBA L_{max} as measured at the nearest higher-density residential land uses. Therefore, this impact would remain significant and unavoidable. (SU)

(3) Operational Noise Impacts. Noise impacts associated with occupancy of the proposed project are described below.

Off-Site Traffic Noise Impacts. The results of the FHWA highway traffic noise prediction model for existing (year 2013), existing plus approved projects (year 2018), and cumulative (year 2025) traffic conditions, without and with the project, on roadway segments in the project site vicinity are shown in Table IV.F-8. Specifically, the traffic noise levels are shown for each modeled roadway segment as calculated at 50 feet from the centerline of the outermost travel lanes. The model inputs and outputs, including the 60 dBA, 65 dBA, and 70 dBA noise contour distances for each modeled roadway segment, are provided in Appendix D.

Table IV.F-8: Modeled Traffic Noise Levels at 50 feet from Centerline of Outermost Travel Lane, dBA

Roadway Segment	Existing (2013) (LDN)	Existing + Project (LDN)	Change from Existing (2013) No Project	Existing + Approved Projects (LDN)	Existing + Approved Projects+ Project (LDN)	Change from Existing (2013) No Project	Change from Existing + Project	Cumulative (2025) No Project (LDN)	Cumulative (2025) + Project (LDN)	Change from Existing (2013) No Project	Change from Cumulative (2025) No Project
Green Valley Rd – Francisco Drive to El Dorado Hills Blvd	67.7	68.2	0.5	68.5	68.9	1.2	0.4	68.9	69.3	1.6	0.4
Green Valley Rd – El Dorado Hills Blvd to Silva Valley Parkway	69.1	70.1	1.0	70.2	70.7	1.6	0.5	70.4	70.9	1.8	0.5
Green Valley Rd – Silva Valley Parkway to Loch Way	68.7	70.1	1.4	69.8	70.8	2.1	1.0	70.2	71.2	2.5	1.0
Green Valley Rd – Loch Way to Wilson Estates Connector	68.6	70.0	1.4	69.7	70.8	2.2	1.1	69.8	70.8	2.2	1.0
Green Valley Rd – Wilson Estates Connector to Malcolm Dixon Rd	68.6	70.0	1.4	69.6	70.7	2.1	1.1	69.8	70.9	2.3	1.1
Green Valley Rd – Malcolm Dixon Rd to Site Access RIRO	68.6	70.0	1.4	69.7	70.8	2.2	1.1	69.8	70.8	2.2	1.0
Green Valley Rd – Site Access RIRO to Site Access Full	68.6	69.7	1.1	69.5	70.3	1.7	0.8	69.7	70.6	2.0	0.9
Green Valley Rd – Site Access Full to Deer Valley Rd	68.6	69.1	0.5	69.5	69.8	1.2	0.3	69.7	70.1	1.5	0.4
Green Valley Rd – Deer Valley Rd to Silver Springs Parkway	68.5	69.0	0.5	69.5	69.9	1.4	0.4	69.5	69.9	1.4	0.4
Green Valley Rd – Silver Springs Parkway to Bass Lake Rd	68.8	69.2	0.4	69.1	69.5	0.7	0.4	69.9	70.2	1.4	0.3
Green Valley Rd – Bass Lake Rd to Cambridge Rd	69.2	69.6	0.4	69.6	69.9	0.7	0.3	70.1	70.6	1.4	0.5
Green Valley Rd – Cambridge Rd to Cameron Park Drive	67.7	68.4	0.7	68.5	68.7	1.0	0.2	69.0	69.2	1.5	0.2

[a] Average daily trips are estimated based on the peak hour traffic volumes.
[b] Traffic noise within 50 feet of the roadway centerline requires a site-specific analysis.

Note: Shaded cells indicate roadway segments adjacent to the project site.

Source: LSA Associates, Inc., 2013.

Per the El Dorado County General Plan Policy 6.5.1.12, a significant impact would occur if the project would permanently increase ambient exterior noise levels by more than 1.5 dBA in areas with existing noise levels in excess of 65 dBA L_{dn} as measured at outdoor active use areas of existing residential land uses. Residential outdoor active use areas are located along all segments of Green Valley Road. As shown in Table IV.F-8, all modeled roadway segments have existing traffic noise levels in excess of 65 dBA L_{dn}. In addition, these modeled roadway segments would experience increases in traffic noise levels ranging up to 1.4 dBA under "Existing + Project" conditions compared to existing (2013) conditions without the project; and increases up to 1.1 dBA under "Existing + Approved + Project" conditions compared to conditions without the project. Therefore, these increases would be considered a less-than-significant impact to existing off-site land uses along these modeled roadway segments and no mitigation would be required.

On-Site Traffic Noise Impact. The following describes the on-site traffic noise impacts associated with implementation of the proposed project.

<u>Impact NOI-2</u>: Implementation of the project could result in traffic noise levels experienced at proposed on-site sensitive land uses in excess of normally acceptable standards for new residential development on Lots 2, 3, and 4. (S)

The proposed project includes residential and recreational land use development. Based on the traffic noise model results, traffic noise levels would range up to 70.8 dBA L_{dn} at 50 feet from the outermost travel lane as measured on the project site while the 60 dBA L_{dn} traffic noise contours (provided in Appendix D) extend to 294 feet from the roadway centerline on the project site under cumulative plus project conditions. Therefore, proposed land uses within 294 feet of the roadway centerline (which include portions of the proposed residential Lots 2, 3, and 4) would be exposed to traffic noise levels in excess of 60 dBA L_{dn}, the County's normally acceptable standards for new residential development outdoor activity areas. The exact location of residential structures on Lots 2, 3, and 4 is unknown at this time; therefore, this could result in a significant impact and mitigation would be required.

There are several potential measures that could mitigate this impact. The project applicant could construct a berm, a soundwall, or a berm-soundwall combination along the Proposed Lot 2 northern property line (south of Lot Z and the portion fronting Green Valley Road). To be effective, this berm/soundwall would need to extend along the entire length of the proposed Lot 2 northern and eastern property lines.

A similar berm/soundwall would be needed to protect the outdoor use areas of the residential uses of the proposed Lot 4. The berm/soundwall should be constructed along the entire length of the eastern property line of Lot 4 (facing Green Valley Road). The berm/soundwall should also wrap-around the northwestern property line of Lot 4 and along a portion of C Drive.

It should be noted that the tentative site plans call for direct access from Green Valley Road to Lots 2 and 3. Lot 4 access is anticipated from C Drive. In order to prevent degradation of the berm/ soundwall prescribed above, the berm/soundwall must also include wrap-around design along the entrance drive to this lot in such a manner as to completely block the line-of-sight from the roadway to the outdoor use areas of Lot 2. The necessary height of the soundwall/berm would be dependent on the location of the residential structure, which has yet to be determined for Lots 2, 3, and 4.

An alternate mitigation to the use of a berm/soundwall in the locations described above would be to require a minimum 294 foot setback for development of residential units, as measured from the centerline of Green Valley Road. This requirement would effectively place all noise sensitive residential units beyond the 60 dBA traffic noise contour, and would meet the County's "normally acceptable" threshold for new residential development.

Implementation of the following mitigation measures would reduce traffic noise to below the County's normally acceptable standard of 60 dBA L_{dn}.

> Mitigation Measure NOI-2: If residential structures are proposed within 294 feet as measured from the Centerline of Green Valley Road, prior to issuance of a grading permit for Lots 2, 3, or 4, the project applicant shall prepare a site specific noise analysis demonstrating that measures have been incorporated into the lot site plan that reduce traffic noise to below the County's normally acceptable standard of 60 dBA L_{dn}.
>
> Measures to reduce impacts could include the following to achieve the County's noise standard:
>
> - The developer shall construct a berm, or soundwall, or berm/soundwall combination. This berm/soundwall shall extend 100 feet southward from the Lot Z property line along the proposed Lot 2 western property line. This berm/soundwall shall also extend along the eastern property line of the proposed Lot 3 all the way to the project entrance. In addition, for any provision of direct access to Lot 2 or Lot 3 from Green Valley Road, the berm/soundwall shall include a wrap-around design along the entrance drive to this lot in such a manner as to completely block the line-of-sight from the roadway to the outdoor use areas of Lot 2 or Lot 3. The required height of the soundwall/berm shall be determined based on the placement of the residential structure.
> - The developer shall also construct a berm, or soundwall, or berm/soundwall along the entire length of the eastern property line of the proposed Lot 4 (facing Green Valley Road). The berm/soundwall shall wrap-around the northwestern property line of Lot 4, along the project's northern entrance roadway, for an additional 100 feet. The required height of the soundwall/berm shall be determined based on the placement of the residential structure.
>
> Implementation of Mitigation Measure NOI-2 will ensure that on-site project-related traffic noise impacts will be reduced to less-than-significant. (LTS)

G. BIOLOGICAL RESOURCES

This section describes the project site's biological environment and potential impacts based on the following reports:

- Jurisdictional Delineation and Special-Status Species Evaluation[1] and Site Assessment Form[2] prepared by Gibson & Skordal;
- Special-Status Plant Surveys[3] prepared by Gibson & Skordal; and
- Dixon Ranch Oak Site Assessment and an Arborist Report for Dixon Ranch Oak Tree Canopy Mitigation Plan[4] prepared by Mann Made Resources

Mitigation measures for the identified significant impacts are provided, where appropriate. These reports are included in Appendix E.

1. Setting

The project site's existing conditions related to biological resources are described below.

a. Biological Resources Conditions. The following section describes existing biological resources conditions at the project site.

(1) Methodology. In regards to methodology undertaken by Gibson & Skordal to prepare this evaluation, the wetland delineation was performed in accordance with the 1987 *Corps of Engineers Wetlands Delineation Manua,l*[5] the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0),*[6] and Sacramento District's *Minimum Standards for Acceptance of Preliminary Wetlands Delineations* dated November 30, 2001. Corps' regulations (33 CFR 328) were used to determine the presence of waters of the United States other than wetlands. The *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook, May 30, 2007*[7] was consulted in evaluating the jurisdictional status of the various waterbodies existing within the project site. The *National List of Plant Species That Occur in*

[1] Gibson & Skordal, 2012. *Jurisdictional Delineation and Special-Status Species Evaluation*, May.

[2] Gibson & Skordal, 2013. *Site Assessment Form.* June.

[3] Gibson & Skordal, 2011. *Special-Status Plant Surveys.* August.

[4] Mann Made Resources, 2014. *Dixon Ranch Oak Site Assessment.* April 25.

[5] Environmental Laboratory, 1987. *Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station*. Vicksburg, Miss.

[6] Wetlands Regulatory Assistance Program, 2008. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)*. U.S. Army Engineer Research and Development Center, Vicksburg, Miss. September.

[7] U.S. Army Corps of Engineers, 2007. *Jurisdictional Determination Form Instructional Guidebook*. U.S. Army Corps of Engineers & U.S. Environmental Protection Agency. May 30.

Wetlands: California (Region 0)[8] was used to determine the wetland indicator status of plants observed in the study area.

Field surveys were conducted on February 4, 2011 by Gibson & Skordal staff within the study area to delineate water features, including wetlands that are potentially regulated under Section 404 of the Federal Clean Water Act. Wetland and data point locations were surveyed utilizing a Trimble GeoXT GPS unit equipped with sub-meter accuracy. The delineation map (contained in Appendix E) was prepared by digitizing and layering GPS field survey data over 2009 aerial photography. Detailed data on vegetation, soils, and hydrology were taken in the field. Data sheets documenting the basis for determining which areas are wetland or upland are provided in Appendix A of the Jurisdictional Delineation and Special-Status Species Evaluation report.

Mr. Peck Ha of the Sacramento District's Regulatory Division conducted a desk verification, and a jurisdictional determination letter was issued on August 26, 2011, under Corps action ID SPK-2011-00758. Appendix B of the Jurisdictional Delineation and Special-Status Species Evaluation report is a delineation map which portrays the study area boundary as well as the location, size, and reach of water features. Appendix C of the Jurisdictional Delineation and Special-Status Species Evaluation report is the Corps' jurisdictional determination letter.

A record search of the California Natural Diversity Database (CNDDB) was conducted to identify all documented sightings of special-status species within approximately ten miles of the study area. In addition to species identified in the CNDDB search, Gibson & Skordal staff included other special-status species that may occur in the study area based on historical or new range data.

(2) Existing Field Conditions. The project site is located in the western foothills region of the Sierra Nevada Mountain Range. The study area is located on rolling terrain at a mean elevation of about 1,050 feet. The site, which is primarily used as cattle and horse pasturage, is undeveloped. Newer residential developments are located to the west while older ranchettes occupy lands to the north and east. The site was not recently graded, grazed, disked, or mowed at the time of field surveys conducted by Gibson & Skordal personnel (February 2011). Appendix D of the Jurisdictional Delineation and Special-Status Species Evaluation report contains photographs of representative landscapes within the project area.

Plant Communities and Habitat Types. The majority of the site supports oak savannah/ woodland composed chiefly of valley oaks (*Quercus lobata*), live oaks (*Quercus wislizenii*), and blue oaks (*Quercus douglasii*). The understory consists of numerous grass species such as dogtail (*Cynosurus echinatus*), wild oats (*Avena* sp.), rip-gut brome (*Bromus diandrus*), medusa head (*Taeniatherum caput-medusae*), and soft chess (*Bromus mollis*).

Interspersed between the oak woodlands/savannah are areas of annual non-native grasslands characterized by rip-gut brome, medusa head, and soft chess. Other associated species include yellow

[8] Reed, P.B., 1988. National List of Plant Species That Occur In Wetlands: California (Region 0). *Biological Report 88(26.10)*. May. National Ecology Center, National Wetlands Inventory, U.S. Fish & Wildlife Service, St. Petersburg, Florida.

start-thistle (*Centaurea solstitialis*), Mediterranean barley (*Hordeum hystrix*), and split-leaf geranium (*Geranium dissectum*).

The study area also encompasses several water features supporting plant communities dominated by hydrophytic macrophytes. These are discussed in greater detail below.

Hydrology. The majority of the site generally drains to the north/northeast into Green Spring Creek. Green Spring Creek, which traverses the northern portion of the study area from east to west, is tributary to Folsom Reservoir by way of New York Creek. The southwestern corner of the parcel appears to drain to the south and into Allegheny Creek outside of the study area boundary. Allegheny Creek is also tributary to Folsom Reservoir by way of Green Spring Creek and New York Creek, respectively.

Soils. According to the April 1974, *Soil Survey of El Dorado County, California*, four soil map units occur within the study area: Auburn very rocky silt loam, 2-30 percent slopes (AxD), Auburn silt loam, 2-30 percent slopes (AwD), Placer diggings (PrD), and Serpentine Rock Land (SaF). Auburn very rocky silt loam, 2-30 percent slopes (AxD) is a well-drained, shallow ruptic-lithic xerochrept composed of 5 to 25 percent rock outcrops. The water holding capacity is 2 to 4 inches, and the depth to bedrock (and effective plant rooting range) varies between 20 to 26 inches. Contained within this unit are inclusions of Argonaut very rocky loam, Boomer very rocky loam, and Sobrante very rocky silt loam.

The second mapped unit is Auburn silt loam, 2-30 percent slopes (AwD). AwD is very similar to AxD except that its surface area is composed of less than 5 percent exposed bedrock. Mapped in AwD are small areas of Perkins gravelly loam, moderately deep variant; Argonaut gravelly loam, and Sobrante silt loam.

Placer diggings (PrD) represents the third map unit and is located in or near creeks, streams, and rivers or areas that have been placer mined. Though enough sand and/or silt are present to support the growth of grasses, it possesses a large proportion of stone, gravel, and cobble.

The final unit is Serpentine Rock Land (SaF), which is located in areas of serpentine and other ultrabasic rock formations. SaF is excessively drained with very rapid surface runoff, and may be composed of 50 to 90 percent rock outcrops and stones. It has a thin mantle of surface soil and is usually found on undulating to very steep terrain. An unnamed inclusion is often present at elevations over 1,000 feet; it has a surface layer of slightly acidic loam and a neutral subsoil of very gravelly heavy clay loam and clay. Depth to bedrock varies from 10 to 24 inches.

None of the above soil map units are listed in the June 1991, *Hydric Soils of the United States.* Figure 2 in the Jurisdictional Delineation and Special-Status Species Evaluation report in Appendix E is a soils map, and Table 1 in the report lists the units mapped within the study area.

Potential Wetlands and Waters of the United States. Gibson & Skordal identified a total of 7.4145 acres of water features in the study area including 0.3944 acre of seeps, 2.1547 acres of seasonal wetland swales, 0.0063 acre of depressional seasonal wetlands, 3.8032 acres of ponds,

0.2444 acre of ephemeral channels, and 0.8114 acre of intermittent channels. Appendix B of the Jurisdictional Delineation and Special-Status Species Evaluation report[9] contains a delineation map with an inset table listing acreages by feature type, and Appendix E of the report provides a list of plant species observed in the study area including their status as wetland indicator species.

Seeps. Four seeps totaling 17,181 square feet were delineated within the study area. Seeps are most often associated with sloping terrain and derived primarily from groundwater seepage in the winter and spring. The plant species included Mediterranean barley, perennial rye (*Lolium perenne*), water cress (*Rorippa nasturtium-aquaticum*), and spiny-fruited buttercup (*Ranunculus muricatus*). The noted soils were sandy clay loams with matrices of 10YR3/1 with approximately 20 percent 10YR4/6 redoximorphic features located in the matrix and root channels. Common wetland hydrology indicators were inundation, oxidized root channels on live roots, and/or a positive FAC-Neutral test.

Seasonal Wetland Swales. Approximately 2.1547 acres of seasonal wetland swales were mapped within the study area. Recorded plants included perennial ryegrass, curly dock (*Rumex crispus*), tall flat sedge (*Cyperus eragrostis*), and spiny-fruited buttercup. The soil were sandy loams with matrices of 10YR4/1 with approximately 10 percent 10YR3/6 redoximorphic features located in the matrix and root channels in the top 4 inches. Saturation or inundation was the most common indicators of wetland hydrology.

Depressional Seasonal Wetlands. One depressional seasonal wetland totaling approximately 275 square feet is located within the study area. This feature appears to receive overtopped water from the adjacent Green Spring Creek. The vegetation was sparse and consisted of curly dock, Mediterranean barley, and perennial rye. The primary indicators of wetland hydrology were sediment deposits, water stained leaves, and surface inundation.

Ponds. Two ponds totaling approximately 3.8032 acres are situated behind historic impoundments of Green Spring Creek. Both contained open water at the time of field surveys, and vegetation along the shore and within the shallow margins includes hardstem bulrush (*Scirpus acutus*), willows (*Salix* sp.), cottonwoods (*Populus fremontii*), creeping spike rush (*Eleocharis macrostachya*), and cattails (*Typha* sp.). The soils present were loams with matrices colors of 10YR3/2 with approximately 25 percent 10YR3/6 redoximorphic features located in the root channels and matrix. Inundation and saturation to the surface were the most obvious indications of wetland hydrology.

Intermittent Channels and Associated Wetlands. Gibson & Skordal mapped approximately 0.8114 acre of intermittent channel associated with Green Spring Creek within the study area. Green Spring Creek contained several inches of flowing water and supported thick growths of hardstem bulrush and cattails. A distinct bed and bank and ordinary high water mark were observed. No data points were taken within Green Spring Creek due to its obvious break with the surrounding uplands.

Ephemeral Channels. The site contains approximately 0.2444 acre of ephemeral channels. Like the above-described intermittent channels, the ephemeral channels possessed a distinct bed and

[9] Gibson & Skordal, 2012, op. cit.

bank and ordinary high water mark. All ephemeral channels contained flowing water at the time of field surveys due to recent rains. These features generally supported little to no vegetation.

Jurisdictional Findings. The U.S. Army Corps of Engineers has determined that the study area contains a total of 7.4145 acres of water features in the study area including 0.3944 acre of seeps, 2.1547 acres of seasonal wetland swales, 0.0063 acre of depressional seasonal wetlands, 3.8032 acres of ponds, 0.2444 acre of ephemeral channels, and 0.8114 acre of intermittent channels. Appendix B of the Jurisdictional Delineation and Special-Status Species Evaluation report contains the reviewed delineation map with inset acreage table.

Special-Status Animal and Plant Species. Gibson & Skordal conducted an evaluation of the potential presence of special-status species within the study area.[10] The special-status species assessment considered those species identified as having relative scarcity and/or declining populations by the United States Fish & Wildlife Service (FWS) or California Department of Fish & Wildlife (CDFW). Special-status species include those formally listed as threatened or endangered, those proposed for formal listing, candidates for federal listing, and those classified as species of special concern by CDFW. Also included were those species considered to be "special animals" or "fully protected" by the CDFW and those plant species considered to be rare, threatened, or endangered in California by the California Native Plant Society (CNPS). Special-status plant species include those officially listed by California or the federal government as endangered, threatened, or rare, as well as those proposed for formal State or federal listing as candidate species for listing as endangered, threatened, or rare. Plant species considered to be rare, threatened, or endangered in California by the California Native Plant Society (CNPS) were also included; this includes species on Lists 1, 2, 3, and 4 of the CNPS Ranking System:

- List 1 A: Plants presumed extinct in California.
- List 1 B: Plants rare, threatened, or endangered in California and elsewhere.
- List 2: Plants rare, threatened, or endangered in California, but more common elsewhere.
- List 3: Plants about which the CNPS needs more information – a review list.
- List 4: Plants of limited distribution – a watch list.

The CNPS Threat Rank is an extension that is added onto the CNPS List. It ranges from .1 to .3 and indicates the level of endangerment to the species with .1 representing the most endangered and .3 being the least endangered.

Also included in the assessment are species meeting the criteria for listing under Section 15380 of the *California Environmental Quality Act (CEQA) Guidelines*. Note that all CNPS List 1 and 2 and some List 3 species may fall under Section 15380 of CEQA.

A record search of the CNDDB was conducted to identify all documented sightings of special-status species within approximately 10 miles of the study area. In addition to species identified in the CNDDB search, Gibson & Skordal included other special-status species that may occur in the study

[10] Gibson & Skordal , 2012. *Jurisdictional Delineation and Special-Status Species Evaluation*, May.

area based on historical range data. Appendix F in the Jurisdictional Delineation and Special-Status Species Evaluation report contains a CNDDB elemental occurrence map.

Table 2 in the Jurisdictional Delineation and Special-Status Species Evaluation report provides a list of special-status species that were evaluated including their listing status, habitat associations, and whether potential habitats occur in the study area. A detailed summary of special-status species and their habitats as they relate to the study area is also included in the report.

In summary, based on the presence of suitable habitat, Gibson & Skordal determined that the following special-status species may occupy the study area:

- Silver-haired bat;
- Cooper's hawk;
- Tricolored blackbird;
- Great egret;
- Great blue heron;
- Burrowing owl;
- White-tailed kite;
- Merlin;
- Bald eagle;
- Double-crested cormorant;
- Western pond turtle;
- California red-legged frog;
- Western spadefoot toad;
- Valley elderberry longhorn beetle; and
- Ricksecker's water scavenger beetle.

Though the study area contains the appropriate habitat to support Jepson's onion, Tuolumne button-celery, Bogg's Lake hedge-hyssop, El Dorado County mule ears, Stebbin's morning glory, Pine Hill ceanothus, Pine Hill flannelbush, El Dorado bedstraw, Layne's ragwort, big-scale balsamroot, Red Hills soaproot, Brandegee's clarkia, Bisbee Peak rush rose, Hartweg's golden sunburst, and Sanford's arrowhead, no special-status species plants were observed during surveys conducted by Gibson & Skordal staff (performed May 6, May 29, and June 27 and August 2, 2011) in accordance with CNPS Botanical Survey Guidelines in 2011.[11]

Arborist Report and Oak Tree Canopy Analysis. Mann Made Resources prepared an arborist site review and an evaluation of the oak tree canopy maps in support of preparation of an Oak

[11] Gibson & Skordal, 2011. *Special-Status Plant Surveys.* August.

Tree Canopy Mitigation Plan[12] for the project in compliance with the El Dorado County General Plan Policy 7.4.4.4. As described in Chapter III, Project Description, the applicant will submit tentative maps for development of the project site in two phases: (1) Phase 1 will include the overall tentative map and development plan that can meet the Interim Interpretive Guidelines for El Dorado County General Plan Policy 7.4.4.4 (Option A) requirements for oak canopy retention and replacement; and (2) Phase 2 will include the remaining portion of the project site under Option B when adopted by the County.

Oak tree mitigation in El Dorado County is regulated by El Dorado County General Plan policy 7.4.4.4 and the Interim Interpretive Guidelines for El Dorado County General Plan Policy 7.4.4.4 (Option A) adopted November 9, 2006 and Amended October 12, 2007.[13] Oak woodlands mitigation is also regulated by Public Resources Code Section 21083.4, CEQA mitigation options include conservation, planting, and fund contribution (see Public Resources Code Section 21083.4(b)). On September 24, 2012, the Board of Supervisors directed the Development Services Department to prepare a resolution of intention to amend the General Plan Policies 7.4.2.8, 7.4.2.9, 7.4.4.4, 7.4.4.5, 7.4.5.1, and 7.4.5.2 and their related implementation measures to clarify and refine the County's policies regarding oak tree protection and habitat preservation. The Board further directed staff to prepare a Request for Proposal to hire a consultant to assist the County to prepare the policies and Environmental Impact Report (EIR).[14]

Mann Made staff visited the site on April 10, 23, and 27 of 2012; and March 4, 18, and 20 of 2014; and inspected oak trees for the following conditions:

- Tree crown – amount and location of live foliage
- Tree structure – location and amount of decay in trunk, root crown, and crotches; broken branches and the absence of branch or trunk attachment strength;
- Trunk flare and root crown – trunk flare grade, absence of roots, decay at base.

Additionally as part of the assessment, the canopy cover as shown on the Tree Preservation Map included as Figure III-3 in Chapter III, Project Description, was verified; the interior live oaks were identified and separated out; and the blue, valley and black oak portions of the canopy cover were identified. Oak trees were evaluated for their condition (e.g., dead, severely declining or needing removal of a portion of their crown to stabilize the tree structure). Oak trees that needed structural work or were in poor enough condition to list for tree removal and exclusion from the tree canopy calculations were identified. Trees that were found to be consistent with native grown oak trees and would not present significant risk when cared for with routine maintenance pruning to remove dead and broken branches with limited reduction to the foliar crown were identified on the Tree Preservation Maps included as Appendices F and G in the Oak Site Assessment report (Appendix E of this document).

[12] Mann Made Resources, 2014, op. cit.

[13] El Dorado County, 2007. *Interim Interpretive Guidelines for El Dorado County General Plan Policy 7.4.4.4 (Option A).* Adopted November 9, 2006 and Amended October 12, 2007.

[14] El Dorado County. Oak Woodlands Management. Website: www.edcgov.us/government/planning/general_plan_oak_woodlands.aspx (accessed November 2, 2012).

b. Regulatory Framework. The following section describes the federal, state, and local regulations that govern the project.

(1) Federal Regulations. Federal regulations are described below.

Federal Endangered Species Act. The federal Endangered Species Act (ESA) (16 U.S.C. 1531 et seq.) is administered by the United States Fish and Wildlife Service (USFWS) and the National Oceanic and Atmospheric Administration (NOAA). The ESA protects threatened and endangered fish and wildlife species and their habitats. An endangered species is a species that is in danger of extinction through all or a significant portion of its range. A threatened species is one that is likely to become endangered in the foreseeable future.

The ESA makes it unlawful to "take" any listed species, which means to "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." However, the ESA allows for the issuance of incidental take permits to applicants who have developed Habitat Conservation Plans minimizing harm to the species' habitat during project development.

Clean Water Act. The federal Clean Water Act (CWA) is administered by the United States Environmental Protection Agency (EPA) and the United States Army Corps of Engineers (ACOE). The ACOE regulates discharge of fill material into "waters of the United States" (33 C.F.R 328.3(a)), which include lakes, rivers, streams, tributaries, and wetlands. Wetlands, a subset of waters of the United States, are areas "inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances support, a prevalence of vegetation typically adapted for life in saturated soil conditions." The discharge of dredge or fill material into waters of the United States is subject to CWA Section 404 permitting.

The Regional Water Quality Control Board (RWQCB) regulates the discharge of waste within any region that could affect a "water of the state," i.e., surface or groundwater within Californian boundaries. (California Water Code, Section 13260(a).) Applicants must receive a RWQCB permit before ACOE will issue a Section 404 permit. If a Section 404 permit is not required for the project, the RWQCB may still require a permit for impacts to waters of the state under the Porter–Cologne Water Quality Control Act.

Migratory Bird Treaty Act. The Migratory Bird Treaty Act implements treaties between the United States, Canada, and Mexico that provide international protection for migratory birds. The act prohibits the "taking" of migratory birds, i.e., killing, possessing, or trading, except in accordance with regulations prescribed by the Secretary of the Interior. The Act covers whole birds, parts of birds, and bird nests and eggs.

(2) State Regulations. State regulations are described below.

California Endangered Species Act. The California Endangered Species Act (CESA) sets out California's policy of protecting and restoring threatened or endangered species and their habitats. The act defines an endangered species as "a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease." A threatened species is one that, "although not

presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts" required by the act. CESA mandates that state agencies not approve projects that would jeopardize the existence of threatened or endangered species if there are reasonable and prudent alternatives available. Compliance with the federal ESA satisfied the CESA if the two acts are consistent regarding take authorizations for a particular species.

Oak Woodlands Conservation Act. California State Senate Bill 1334, the Oak Woodlands Conservation Act, became law on January 1, 2005, and was added to the CEQA statutes as section 21083.4. This law protects oak woodlands that are not protected under the State Forest Practice Act. The statute requires that a county must determine whether or not a project will result in a significant impact on oak woodlands. If a project may result in significant impacts to oak woodlands, the County requires one or more of the following mitigation measures:

1. Conserve oak woodlands through the use of conservation easements;
2. Plant an appropriate number of trees, including maintenance of plantings and replacement of failed plantings;
3. Contribute funds to the Oak Woodlands Conservation Fund for the purpose of purchasing oak woodlands conservation easements;
4. Other mitigation measures developed by the county.

California Fish and Game Code Sections 3503, 3503.5, and 3513. Fish and Game Code Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by the code related regulations. Section 3503.5 protects all birds of prey and their eggs and nests. Section 3513 states that it is unlawful to take or possess any migratory non-game bird as designated in the Migratory Bird Treaty Act. These regulations could require that elements of the proposed project, particularly vegetation removal or construction near nest trees, be reduced or eliminated during critical phases of the nesting cycle unless surveys by a qualified biologist demonstrate that nests, eggs, or nesting birds will not be disturbed.

California Fish and Game Code. Sections 3511, 4700, 5050, and 5515 of the California Fish and Game Code designate certain species as "fully protected." Fully protected species may not be taken or possessed at any time except as part of an approved Natural Community Conservation Plan (NCCP). The California Fish and Game Commission may authorize the collection of such species for scientific research. Legally imported and fully protected species or parts thereof may be possessed under a state permit

(3) Local Regulations. Local regulations are described below.

County of El Dorado General Plan. The El Dorado County General Plan's Conservation and Open Space Element governs the conservation and protection of soils, minerals, water, wildlife and fisheries, vegetation, cultural resources, and open space in the County.

Related to woodlands protection and urban development, Policy 7.4.4.4 states that for all new non-agricultural development projects that would result in soil disturbance on parcels with a certain percentage of woodlands habitat cover, the County shall require one of two mitigation options: (1) the

project applicant must adhere to certain tree canopy retention and replacement standards; or (2) the project applicant must contribute to the County's Integrated Natural Resources Management Plan." The General Plan's Land Use Element, Objective 2.1.1, demarcates Community Regions as the geographic boundaries for urban growth. Community regions concentrate development in higher-density areas, thereby preserving open space areas in the County.

County of El Dorado Oak Woodlands Management Plan. On May 6, 2008, the El Dorado County Board of Supervisors adopted the Oak Woodland Management Plan (OWMP) and its implementing ordinance. The primary purpose of this plan was to implement Option B of Policy 7.4.4.4 establishing an Oak Conservation In-Lieu Fee for the purchase of conservation easements for oak woodland in areas identified as Priority Conservation Areas.

On June 6, 2008, a lawsuit was filed in El Dorado Superior Court against the OWMP. While the Superior Court upheld the Board's adoption of the Plan, the Court of Appeal overturned that decision, remanding the case back to Superior Court with the direction to require the County to prepare an EIR for the OWMP. The OWMP was rescinded on September 4, 2012 (Resolution 123-2012) and its implementing ordinance was rescinded on September 11, 2012 (Ord. No. 4892). Currently, only Option A of Policy 7.4.4.4 is available to mitigate impacts to oak woodlands.

On September 24, 2012, the Board of Supervisors directed the Development Services Department to prepare a General Plan amendment to amend Policies 7.4.2.8, 7.4.2.9, 7.4.4.4, 7.4.4.5, 7.4.5.1, and 7.4.5.2 and their related implementation measures to clarify and refine the County's policies regarding oak tree protection and habitat preservation. The County plans to prepare the policy amendments and an Environmental Impact Report (EIR).

2. Impacts and Mitigation Measures

The analysis of the impacts related to biological resources that could result from implementation of the proposed project is presented below. This section begins with criteria of significance, which establish the thresholds for determining whether a project impact is significant. Mitigation measures are provided so as to reduce significant impacts to a less-than- significant level.

a. Criteria of Significance. The project would have a significant biological resources impact if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan.

b. Project Impacts. The following discussion describes potential impacts related to biological resources that would result from implementation of the proposed project.

(1) Special-Status Species. As described above, Table 2 in Appendix F of the Jurisdictional Delineation and Special-Status Species Evaluation report lists special-status wildlife species and evaluates their potential to occur on or in the vicinity of the site. As stated in the table, foraging and nesting habitat may be present in the project area for some species, especially birds. An impact is discussed below for protected bird species.

<u>Impact BIO-1</u>: The proposed project may result in the destruction or abandonment of nests occupied by special-status or non-special-status bird species that are protected under the Migratory Bird Treaty Act and Fish and Game Code. (S)

The vegetation and habitat on the project site provide nesting habitat for native bird species, including eggs and young birds in active nests. Additionally, vegetation and habitat may be removed as part of off-site improvements. Intentional actions which kill or take these birds are regulated under the MBTA and/or FGC. Removal of trees and grading and construction activities near nests during the nesting season could cause nest abandonment and/or loss of eggs or young during the breeding season and would represent a significant impact. Implementation of the following mitigation measure would reduce impacts to nesting common and special-status bird species to a less-than-significant level:

> <u>Mitigation Measure BIO-1</u>: A qualified biologist shall conduct surveys prior to tree pruning, tree removal, transplantation, ground disturbing activities, or construction activities on the site to locate active nests containing either viable eggs or young birds. Preconstruction surveys are not required for tree removal, tree pruning, or construction activities outside the nesting period. If construction would occur during the nesting season (February 1 to August 31), preconstruction surveys shall be conducted no more than 14 days prior to the start of pruning, construction, or ground disturbing activities. Preconstruction surveys shall be repeated at 14-day intervals until construction has been initiated in the area after which surveys can be stopped. Locations of active nests containing viable eggs or young birds shall be described and protective measures implemented until the nests no longer contain eggs or young birds. Protective measures shall include establishment of clearly delineated exclusion zones (i.e., demarcated by uniquely identifiable fencing, such as orange construction fencing or equivalent) around each nest site as determined by a qualified wildlife biologist, taking into account the species of birds nesting on-site and their tolerance for disturbance. In general, exclusion zones shall be a minimum of 300 feet from the drip line of the nest tree or nest for raptors and 50 feet for passerines and other species. The active nest sites within an exclusion zone shall be monitored on a weekly basis throughout the nesting season to identify signs of disturbance or to determine if each nest no longer contains eggs or young birds. The radius of an exclusion zone may be increased by the

project biologist if project activities are determined to be adversely affecting the nesting birds. Exclusion zones may be reduced by the project biologist only in consultation with CDFW. The protection measures shall remain in effect until the young have left the nest and are foraging independently or the nest is no longer active. For any project-related activities involving the removal of trees during the nesting season, a report shall be submitted to the County of El Dorado and CDFW once per year documenting the observations and actions implemented to comply with this mitigation measure. (LTS)

(2) Wetlands and Riparian Habitat. As noted previously, the Sacramento District's Regulatory Division issued a preliminary jurisdictional determination letter on August 26, 2011 (see Appendix C of the Jurisdictional Delineation and Special-Status Species Evaluation report[15]). The Corps concurred with Gibson & Skordal's estimate that there are approximately 7.4 acres of wetlands on the project site, and noted that "these waters may be regulated under Section 404 of the Clean Water Act." Additionally, that the project applicant shall not start any work in potential jurisdictional waters unless they have Corps permit authorization. In the Site Assessment Form,[16] Gibson & Skordal note there are several areas where roads and driveways cross either channels or seasonal wetland swales, but that all crossings will span the jurisdictional limits of the water features. The report also identifies and evaluates the project buffers to protect wetland areas and provides Best Management Practices to protect wetland and aquatic resources. It is the opinion of Gibson & Skordal that the combination of the buffers, the implementation of Best Management Practices, attainment of a Section 404 permit, if applicable, and conformance to all Corps, State, and El Dorado County requirements, potential impacts to wetlands and riparian habitat associated with the project would be less than significant.

(3) Wildlife Movement. As shown in Figures III-3 and III-5 in the Project Description Chapter, much of the site perimeter would be maintained as open space, and the existing tree canopy would be maintained where feasible. Additionally, approximately 84 acres of the site (or about 30 percent) would remain in open space parks and landscaping, and no migratory wildlife corridors or wildlife nursery sites would be blocked or impeded. Wildlife can continue to move through the area using the open space lands that would remain undeveloped and any potential impacts to wildlife movement would be less than significant.

(4) Biological Resources Protection Policies and Plans. The project would generally not conflict with any local policies or ordinances protecting biological resources. However, removal of oak trees associated with the implementation of the project would require compliance with General Plan Policy 7.4.4.4 to mitigate impacts to oak woodlands.

<u>Impact BIO-2</u>: Implementation of the proposed project would require the removal of oak trees that are protected under County guidelines and General Plan Policy 7.4.4.4 and which would be a significant impact. (S)

[15] Gibson & Skordal, 2012, op. cit.

[16] Gibson & Skordal, 2013, op. cit.

Mann Made Resources prepared an assessment to support an Oak Tree Site Assessment and Canopy Mitigation Plan[17] for the project in compliance with El Dorado County guidelines and General Plan Policy 7.4.4.4. The County Guidelines require preparation of a table showing the Oak Canopy Coverage to be removed before and after project implementation (see Table IV.G-1 and Figures III-3a and III-3b). The relevant calculations used for tree mitigation is based on the canopy cover area. See the Arborist Report (Appendix A within the Dixon Ranch Oak Site Assessment included in Appendix E of this EIR) for a discussion of the calculations provided to support the information provided in Table IV.G-1.

The project applicant will comply with County oak tree mitigation requirements. The existing total oak canopy cover on the site is 15.87 percent and falls within the 10 to 19 percent range of Option A. The required retention of canopy cover in this percent range is 90 percent. The total existing oak canopy area is 1,952,935 square feet or 44.83 acres. The allowable 10 percent canopy reduction area is 4.48 acres under Option A. The proposed oak canopy removal for the project is 19.76 acres (44.1 percent) which exceeds the allowable Option A canopy removal amounts. To comply with the Option A requirements, and as stated previously, the development of the project will proceed in two phases: Phase 1 will include that portion of the overall tentative map and development plan that can meet the requirements for oak canopy retention and replacement under Option A, and Phase 2 will include oak tree removal mitigations for the remaining portion of the project when Option B Oak Tree Canopy Mitigation Plan is adopted and becomes available. The Phase 2 tentative map and development plan for the project also would be processed for approval at that time.

The proposed oak canopy removal for Phase 1 of the project is 193,662 square feet or 4.45 acres (9.9 percent). The mitigation for Phase 1 under Option A is to plant a 1:1 ratio of 4.45 acres of oak trees. The available area for mitigation within Phase 1 is 1,041,004 square feet or 23.90 acres, and therefore adequate space is available for onsite mitigation. All tree planting will comply with the County's target density of 200 trees per acre. The mitigation actions that will be performed for this project also will be dependent upon the allowable conditions of approval for this project which will be determined by the County as part of the approval and permitting process.

The total oak tree canopy removal for the project is proposed to be 19.76 acres. Up to 4.48 acres of the allowed canopy is to be removed as part of Phase 1 of the project, shown in Figure III-3a. However, only 4.45 acres of canopy is proposed to be removed. There is an additional 15.31 acres of oak canopy that needs to be removed (Phase 2 of the project) and mitigated. Per Option A, for Phase 1 of the project, the total mitigation acreage can be planted on-site or off-site. The final mitigation plan will be based on what conditions the County approves for this project, either on-site or an equivalent off-site mitigation such as planting or conservation easement acreage or other alternatives to be determined.

[17] Mann Made Resources. 2014, op.cit.

Table IV.G-1: Dixon Ranch Oak Canopy Coverage

Oak Woodland Species	Pre-Project Oak Canopy Coverage	Phases 1 and 2 Project Oak Canopy Coverage Removal
Blue Oak, Valley Oak and Black Oak	14.25 percent (40.26 acres)	42.45 percent (17.09 acres)
Interior Live Oak	1.62 percent (4.57 acres)	58.42 percent (2.67 acres)
Totals	15.9 percent (44.83 acres)	Total Canopy Removal: 44.1 percent of existing canopy (19.76 acres)
Oak Canopy Cover Removal Option A[a]	Allowable Removal: 10 percent or 4.48 acres	Proposed Phase 1 Removal: 9.9 percent or 4.45 acres

[a] Option A of Policy 7.4.4.4 is the only option available to mitigate impacts to oak woodlands as of May 2014.

Note: For Phase 1 of the project, 4.48 acres of canopy x 200 trees/acre = 896 oak trees (saplings or one-gallon trees) or 2,688 acorns (896 x 3) to be planted as replacement in compliance with the amended Guidelines for Option A.

Sources: Mann Made Resources. 2014. *Dixon Ranch Oak Site Assessment, Appendix A: Arborist Report for Dixon Ranch Oak Tree Canopy Mitigation Plan.* April. Lillian Macleod, Acting Principal Planner, El Dorado County, 2014.

The following two-part mitigation measure that would reduce this impact to a less-than-significant level is recommended with the understanding that the County of El Dorado Board of Supervisors may amend the General Plan policies based on further study of the Oak Woodland Management Plan. However, Option A is the regulation currently in place to address impacts on oak woodlands. Oak canopy removal in excess of 10 percent allowed under Option A would occur as part of Phase 2 of the project. Prior to providing permits for Phase 2 of the project, the County would need to approve a final oak tree mitigation plan to be prepared by the applicant.

Mitigation Measures BIO-2: The project applicant shall implement the following two-part measure:

- BIO-2a: The project applicant shall comply with County oak tree mitigation requirements to the satisfaction of the Development Services Division, and per the requirements of Option A of Policy 7.4.4.4. Prior to providing any permits for the project, the project applicant shall prepare and submit an Oak Tree Removal Mitigation Plan to the satisfaction of and approval by the County. Per the Arborist Report for Phase 1 of the project, mitigation for oak tree removal will generally consist of planting up to 4.48 acres of oak trees at a 1:1 ratio per the acres actually removed up to the allowable 10 percent canopy reduction area. The Mitigation Plan shall identify the locations for all on-site and off-site planting areas as well as all conditions associated with the planting. At a minimum, all tree planting for this mitigation measure will comply with the County's target density of 200 trees per acre and other guidelines set forth under Option A. The Mitigation Plan shall also identify measures to protect oak trees adjacent to the construction areas that will not be removed.
- BIO-2b: The project applicant shall provide a tentative map and development plan for Phase 2 of the project. Phase 2 of the project will undergo additional CEQA review (as necessary) and must adhere to all provisions and mitigations outlined in the Option B Oak Tree Removal Mitigation Plan. Option B mitigations and measures may include the following: prepare an Oak Tree Removal Mitigation Plan, to the satisfaction of and

approval by the County; payment of a fee to the County, offsite permanent preservation and/or dedication per an easement of oak woodlands; inclusion and permanent protection of additional oak woodlands as part of the project to offset tree removals or other feasible measures identified by the County. (LTS)

c. Cumulative Impacts. Development of the proposed project would not contribute to the cumulative regional loss of open lands/habitat which may support special-status species and sensitive communities. Based on the assessment prepared by Gibson & Skordal, the proposed project would have a less-than-significant effect on special-status species and sensitive habitats. The proposed project (including mitigation measures recommended in this EIR) would also have a less-than-significant to effect on the Green Spring Creek channel, other creek channels, ponds, wetlands and associated riparian vegetation. The proposed project would have a less-than-significant effect on existing wildlife movement corridors. With implementation of the mitigation measures identified above, the project would not make a significant contribution to cumulative impacts to biological resources. In general, the impacts to biological resources that would result from the project would be confined to the project site. Therefore, the project, in combination with other past, present, and reasonably probable future projects, would not result in significant cumulative effects on biological resources. This impact is less-than-significant.

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H. CULTURAL AND PALEONTOLOGICAL RESOURCES

This section describes the project site's cultural resources and potential impacts based on the following reports prepared by Historic Resource Associates: Cultural Resources Study of the Dixon Ranch Project, Assessor's Parcel Number 126:020:01[1] and Cultural Resources Study of the Dixon Ranch Project, Assessor's Parcel Numbers 126:020:02, 126:020:03, 126:150:15, 126:150:21, 126:150:23,115:080:04 and a Portion of 126:150:13.[2]

Cultural resources are sites, buildings, structures, objects, and districts that may have traditional or cultural value for their historical significance. Cultural resources include a broad range of resources, examples of which include archaeological sites, historic roadways and railroad tracks, and buildings of architectural significance. For a cultural resource to be considered a historical resource (i.e., eligible for listing in the California Register of Historical Resources), it generally must be 50 years or older and qualify for at least one of four categories listed in *CEQA Guidelines* Section 15064.5(a):

- A resource listed in, or determined to be eligible by the State Historical Resources Commission, for listing in the California Register of Historical Resources (Public Resources Code SS5024.1, Title 14 California Code of Regulations (CCR), Section 4850 et seq.).
- A resource included in a local register of historical resources, as defined in Section 5020.1(k) of the Public Resources Code or identified as significant in a historical resource survey meeting the requirements of section 5024.1 (g) of the Public Resources Code. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.
- Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing on the California Register of Historical Resources (Public Resources Code SS5024.1, Title 14 CCR, Section 4852).
- The fact that a resource is not listed in, or determined to be eligible for listing in the California Register of Historical Resources, not included in a local register of historical resources (pursuant to section 5020.1(k) of the Public Resources Code), or identified in a historical resources survey (meeting the criteria in section 5024.1(g) of the Public Resources Code) does not preclude a lead agency from determining that the resource may be a historical resource as defined in Public Resources Code sections 5020.1(j) or 5024.1.

[1] Historic Resource Associates, 2013. *Cultural Resources Study of the Dixon Ranch Project, Assessor's Parcel Number 126:020:01, South of Green Valley Road and East of Malcolm Dixon Road, El Dorado Hills, El Dorado County, California 95762.* Updated March.

[2] Historic Resource Associates, 2013. *Cultural Resources Study of the Dixon Ranch Project, Assessor's Parcel Numbers 126:020:02, 126:020:03, 126:150:15, 126:150:21, 126:150:23, 115:080:04 and a Portion of 126:150:13, South of Green Valley Road and East of Malcolm Dixon Road, El Dorado Hills, El Dorado County, California 95762,* Updated March. Please note that while not included in the title of the report, APN 126:020:04 is also included in this report.

1. Setting

This section describes the methods used to develop the cultural setting and baseline conditions for the project site.

a. Cultural Resources. This section describes the methods used by Historic Resource Associates to identify the baseline conditions for cultural resources in the project site. Following this discussion is an overview of the prehistoric, ethnographic and historical setting for the project site and its vicinity.

CEQA guidelines define a significant cultural resource as "a resource listed in or eligible for listing on the California Register of Historical Resources (CRHR)" (Public Resources Code section 5024.1). A historical resource may be eligible for inclusion in the CRHR if it:

1. Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage;
2. Is associated with the lives of persons important in our past;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, represents the work of an important creative individual, or possesses high artistic values; or
4. Has yielded, or may be likely to yield, information important to prehistory or history.

Even if a resource is not listed in, or determined eligible for listing in, the CRHR, the lead agency may consider the resource to be an "historical resource" for the purposes of CEQA provided that the lead agency determination is supported by substantial evidence (CEQA Guidelines 14 CCR 15064.5).

(1) Methods. The cultural resources analysis included a records search and field survey, as described below.

Records Searches. On February 4, 2011, a record search (ELD-11-11) was conducted at the North Central Information Center (NCIC) of the California Historical Resources Information System (CHRIS) for the project area (refer to NCIC Record Search). The State of California Office of Historic Preservation (OHP) records, base maps, historic maps, and literature for El Dorado County were reviewed. Nine cultural resource studies have been conducted within a half mile of the proposed project area, including Peak & Associates (1979/#433), Peak & Associates, Inc. (1989/#3740), Supernowicz (1992/#3625), Pacific Legacy, Inc. (1998/#783), Pacific Legacy, Inc. (2005/#7489), EarthTouch, Inc. (2006/#6861), Peak & Associates, Inc. (2006/#7995), Archaeological Resources Technology (2009/#10316), and Historic Resource Associates (2011). The studies conducted by Pacific Legacy, Inc. (1998/#783) and Historic Resource Associates (2011) encompassed portions of the project area.

There are three cultural resource sites located within 1/2 mile of the proposed project: P-9-1140 (Dixon Ranch Buildings), P-9-1141 (section of Old Coloma Road), and P-9-1580/CA-ELD-1193-H (section of the Old Coloma Road at the intersection of Green Valley and Deer Valley Roads). State and Federal inventories list no historic resources within the subject property. The following historic references were also reviewed:

- The National Register of Historic Places – Listed Properties and Determinations of Eligibility (2011);
- California Register of Historical Resources;
- California Inventory of Historic Resources (1976 and updates);
- California Historical Landmarks (1996 and updates); and
- California Points of Historical Interest (1992 and updates).

Archival research was conducted at the El Dorado Historical Museum, El Dorado County Library, on the Internet, and within the reference library of Historic Resource Associates.

In June 2012, the County contacted the Native American Heritage Commission (NAHC) requesting a search of the Sacred Lands Files, which includes the location of sites with cultural significance to Native American groups. A response from the NAHC was sent July 11, 2012, stating that the Sacred Land Files failed to indicate the presence of Native American cultural resources within the immediate project area. The NAHC provided a list of Native American individuals and organizations that may have knowledge of cultural resources in the project area. On January 31, 2014, the County sent letters to all entities included on the list, and, as of June 6, 2014, the County has not received any responses to these letters or specific comments on the project.

Survey Methods and Field Inventory. An intensive cultural resources survey was conducted within the project area over a five day period. "Intensive" is defined as walking transects no more than 5 meters apart. In general, ground visibility throughout the project was adequate to identify cultural resources within the project area. The following are the findings based upon the field survey and documentary search chronicled in the reports prepared by Historic Resource Associates.

Dixon Ranch Buildings, P-9-1140. This property was recorded by Pacific Legacy, Inc. in 1998, and at that time the ranch complex was not formally evaluated under CEQA for the California Register of Historic Resources (CRHR). The ranch complex includes a single-story wood-frame vernacular residence or ranch house that has apparently been reconstructed in its present location with reused lumber that contains square-cut nails. The building includes a partial cellar and is in extremely deteriorated condition and at present is uninhabitable. The other structures on the site include a collapsed shed, a small storage shed, a wrecked 1940s pick-up truck, several other shed-like structures, minimal landscaping, and cross fencing to keep ranch animals away from the house. Based upon documentary evidence and an inspection of the residence and outbuildings, the property was likely developed in the late 1930s or 1940s and used through the 1990s, until its more recent abandonment. The parcel was once owned by Louis Klump, whose primary residence was in Folsom during the first few decades of the twentieth century. Klump likely leased out the property for grazing livestock.

The Dixon Ranch Buildings (P-9-1140), which were previously recorded by Pacific Legacy in 1998, comprise a series of buildings and structures cobbled together in circa 1940 from older buildings, lack integrity and association with significant events in the history of El Dorado County, have no scientific research value, and consequently do not appear to be individually eligible for under CRHR Criteria 1, 2, 3 and 4. Furthermore, P-9-1140 (stone reservoir) and CA-ELD-1193-H (abandoned segment of Green Valley/Old Coloma Road) also lack integrity, are not associated with significant events in the history of El Dorado County, wagon, stage, or emigrant travel in the region, and consequently the segment is not individually eligible under CRHR Criteria 1, 2, 3 and 4, and is not considered a

resource for CEQA purposes. Neither is the property a contributing element to a CRHR historic district, either contiguous or discontiguous. A small trash scatter, previously unidentified, associated with P-9-1140, dates to the late 1940s and 1950s and has no scientific research value of significance.

Stone Reservoir, P-9-1140. This property was not identified during previous cultural resource studies, as the dry-laid rock wall is located outside previous study boundaries. Approximately 200 meters to the southeast of P-9-1140 (Dixon Ranch Buildings) is a spring in a draw that has been developed as a stone and board reservoir for livestock. The reservoir itself measures approximately 20 feet long by 10 feet wide and is covered with boards and corrugated metal. Its precise age is uncertain, but it likely associated with the ranch buildings recorded as P-9-1140.

Dry Laid Rock Walls – Locus A and B, P-9-1140. This property consists of two linear, dry-laid fieldstone walls that run nearly north to south on the far northwest side of the site. The walls represent mid-nineteenth century boundaries for land ownership and for accommodating livestock, such as sheep and cattle, in specific areas. Locus B runs for a distance of approximately 0.125 miles before it terminates at its westernmost point in a single-family residential home development, where it has been obliterated. The eastern terminus of the wall is atop a gently sloping ridge where the wall apparently once continued further east, perhaps as a brush fence, since no stones are apparent. The other possibility is that the stones were removed and used for other structures on the ranch property in later years. Locus B begins at the top of the ridge along its most southern line and continues for approximately 100 yards to the west, where it terminates in a grove of trees. This rock wall has been overlain with a barbed wire fence, and, unlike the other rock wall, it still provides the demarcation for the property's southern boundary. On average, Locus A stands 2-3 feet tall and approximately 30" wide. Locus B is smaller and averages 2 feet in height and 24 inches in width.

In applying the CRHR to the historic properties identified in the study area, while P-9-1140 (dry-laid rock walls/Locus A and B) retain fair integrity, they do not appear to be individually eligible under CRHR Criteria 1, 2, 3 and 4, for their association with an early period of settlement, homesteading, and ranching during the mid-nineteenth century in western El Dorado County, and are not considered a resource for CEQA purposes. This recommendation is based upon the fact that the walls are fragmentary, development to the west has destroyed a segment of Locus A, and much of the wall to the east is missing. Similarly Locus B, which is much shorter in length, has been impacted by development, natural erosion, and more modern fencing.

Dixon Ranch Stone Corral and Bedrock Mortars H/P-1. One multi-component historic/ prehistoric property was identified and formally recorded as Dixon Ranch Stone Corral and Bedrock Mortars H/P-1. The historic portion of the site is likely related to P-9-1140, previously recorded in March 2001 for the larger Dixon Ranch project.

In applying the CRHR to the multi-component property referred to as Dixon Ranch Stone Corral and Bedrock Mortars H/P-1, the historic component of the site lacks integrity due to the fact that mechanical grading demolished two segments of wall that once formed a corral or partial corral. The prehistoric component of the site includes two partially developed bedrock mortar holes and no evidence of other artifacts or cultural debris. Therefore, neither the historic nor the prehistoric components of the property appear to be individually eligible under CRHR Criteria 1, 2, 3 and 4 for their association with an early period of settlement, homesteading, and ranching during the mid-nineteenth century in western El Dorado County, or for interpreting the prehistory of El Dorado County, and are not considered a resource for CEQA purposes.

Abandoned Segment of Green Valley/Old Coloma Road, CA-ELD-1193-H. This property represents an abandoned portion of the Green Valley Road, often identified as the Old Coloma Road. The approximate 0.25 mile segment of the abandoned roadway includes a dirt and asphalt/macadam surface. The road measures on average from 16-20 feet in width with cut bank, several concrete culverts, dirt and rock rubble fill, forming a downslope embankment to support the road. The abandoned roadway terminates to the west where it intersects Green Valley Road and likely continued to the west as part of Malcolm-Dixon Road. The road terminates to the east at a gate, but continues onward through another parcel, where it remains in various stages, having been graded. The morphological characteristics of the road suggest it dates from after 1900, since it has cut slopes in comparison to nineteenth century emigrant or wagon roads that would have followed the natural slope.

CA-ELD-1193-H lacks integrity as it relates to the pre-automobile period (circa 1850-1910), is not associated with significant events in the history of El Dorado County such as wagon, stage, or emigrant travel in the region, and consequently the segment is not individually eligible under CRHR Criteria 1, 2, 3 and 4, and is not considered a resource for CEQA purposes. Neither is the property a contributing element to a contiguous or discontiguous CRHR linear historic district.

(2) Cultural Resources Overview. This subsection briefly describes the prehistory and history of the project site vicinity.

Archaeology. The prehistory of the lower foothills in the vicinity of El Dorado Hills has undergone a variety of archaeological studies, although intensive excavations are rare. Of particular importance to the prehistory of the area are the following early reports: Eric W. Ritter, Dr. Brighman A. Arnold, "Excavation of the Scott Site" (Summer 1957), unpublished; Eric W. Ritter, "Archaeological Investigations in the Auburn Area, Phase II-III," 1970; Eric W. Ritter, "The Archaeology of 4-PLA-101 Spring Garden Ravine Site," 1968?; Frank E. Rackerby, "The Archaeology of the Middle Fork American River Project, Placer County, California," 1965; Louis A. Payen, "The Walltown Nisenan," May 20, 1961; and Glenn J. Childress and Eric Ritter, "An Archaeological Survey of the Proposed Auburn and Sugar Pine Reservoirs in El Dorado and Placer Counties," October 1967. Cumulatively, all of these projects in both El Dorado and Placer County, covering the foothill floor (700 feet) to the lower edge of the pine belt (roughly 3,500 feet), provide useful data towards addressing the prehistory of the region.

In addition, much of the analysis of prehistoric sites in the vicinity also relies upon inferences drawn from data collected in other regions of the Sierra Nevada, the Central Valley, and the Great Basin. Archaeologists have relied upon scientific data gathered from several major prehistoric sites near Lake Tahoe, where a reasonably complete chronology has been established, which dates back 8,000 years. Occupation of the high Sierra is thought to date to at least 6,000 B.C. This early period is represented by Parman type projectile points[3] found along the Tahoe Reach of the Truckee River.[4]

[3] Layton, T. N., 1979. Archaeology and Paleo-Ecology of Pluvial Lake Parman, Northwestern Great Basin. *Journal of New World Archaeology*, 3(3):41-56.

[4] Elston, R., et al., 1977. *The Archaeology of the Tahoe Reach of the Truckee River. Reno: Report to the Tahoe-Truckee Sanitation Agency.*

Numerous surface finds of similar point types have been recovered on the Eldorado, Tahoe, and Lassen National Forests. This period is known as the Tahoe Reach Phase.[5,6] Following the Tahoe Reach phase, Elston (1977) documents a second phase in the high Sierra, known as the Spooner phase, which dates from 2000 to 5000 B.C. and is characterized by Pinto[7] and Humboldt[8] type points.[9]

Heizer and Elsasser (1953) define the next phase in the high Sierra chronology, which dates from 2,000 B.C. to 500 A.D., as the Martis phase, named after the Martis Valley. This period is characterized by the wide-spread use of basalt for stone tools, large, roughly shaped projectile points of the Martis type,[10] atlatl weights, manos, millingstones, bowl mortars, cylindrical pestles, and many flake scrapers.[11] Martis is considered a series of phases, which may be of Great Basin origin, but which is distributed from the western Great Basin to the Central Valley. Its distribution roughly coincides with the ethnographic territories of the Maidu and the Washo peoples.[12] Although probably not ancestral to the Washo,[13] Martis may represent Maidu prehistory, including Nisenan.[14]

Following Martis is the Kings Beach phase, also described by Heizer and Elsasser (1953). It is characterized by the use of obsidian and silicate stone tools, small projectile points, indicating a shift from the atlatl, or throwing stick, to the use of the bow and arrow, scrapers, and bedrock mortars.[15] The phase dates from 500 A.D. to 1,200 A.D., and is considered ancestral to the ethnographic Washo.

Comparing data from the high Sierra, Eric Ritter (1970) conducted the first excavation of a stratified site in the Georgetown region. Located west of Foresthill, the Spring Garden Ravine site (PLA-101), dates to 1400 B.C. Three strata were identified at the site. The oldest, Horizon C, contained large slate and basalt projectile points of the Martis type, atlatl weights, bowl mortars, millingstones, and many core tools.[16] The stratum was radiocarbon dated to 1000+110 B.C. (GaK-2246). The A horizon, containing arrow points and numerous silicate retouched flakes, hopper mortars, bedrock mortars, few core tools, and millingstones, is thought to be ancestral to the ethnographic Nisenan.[17] The B horizon,

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[5] Ibid.

[6] Ritter, Eric W., 1968. *The Archaeology of 4-PLA-101, the Spring Garden Ravine Site.*

[7] Amsden, Charles A., 1935. The Pinto Basin Artifacts. In the Pinto Basin Site: An Ancient Aboriginal Camping Ground in the California Desert. E. W. C. Campbell and W. H. Campbell. Los Angeles: Southwest Museum Papers 9.

[8] Heizer, Robert F. and C.W. Clewlow, Jr., 1968. Projectile Points from Site NV-CH-15, Churchill County, Nevada. Berkeley: University of California Archaeological Survey Reports 71:59-88.

[9] Elston, R., et al., op. cit.

[10] Heizer, Robert F. and A.B. Elsasser. 1953. Some Archaeological Sites and Cultures of the Central Sierra Nevada. Berkeley: University of California Archaeological Survey Reports 12, pp. 1-42.

[11] Moratto, Michael J., 1984. California Archaeology. Orlando, Florida: Academic Press, Inc.

[12] Ibid.

[13] Ibid.

[14] Ibid.

[15] Ibid.

[16] Ibid.

[17] Ibid.

both stratigraphically and culturally intermediate, was radiocarbon dated at 1039+89 A.D. (GaK-2244) and 976+90 A.D. (GaK-2245).[18]

Also from this excavation came evidence that, prehistorically, the environment of the region may not have been as wooded as it appears today. Analyzing pollen from site PLA-101, Robert Matson (1970, 1972a, 1972b) found evidence of a 3,000 year old, savanna type of environment, consisting of oak grassland with occasional patches of chaparral. This was replaced 500 years ago by an environment of dense pine-oak woodland. Matson (1970, 1972a, 1972b) postulated that this change may be due to the cessation of seasonal burning by native peoples, which was used to promote desirable plant species for food, tools, and as fodder for deer.

At the Cool Limestone Quarry, northwest of Georgetown, evidence of connections with the Central Valley was discovered at Hawver Cave. Between 1908 and 1910, in the nearly vertical shaft of the cave, J. C. Hawver discovered the remains of between 30-40 people with associated artifacts, which may be at least 2,500 years old.[19] No complete skeletons were found, and the broken and disarticulated state of the remains indicate that the individuals were thrown into the cave.[20] Burial goods described by Hawver show strong affiliation with the Windmiller culture of the Central Valley, although they are constructed of local chert, basalt, and slate.[21]

Generalizing over the entire west slope of the Northern Sierra Nevada, Moratto (1984) has postulated that by 1,000 B.C., the area was settled by groups of people of unknown origins who possessed both Martis and Central Valley traits. During this period, the bow and arrow were introduced, at approximately 600 A.D. to 800 A.D., and the mortar and pestle were more intensively used after 1400 A.D. (Moratto 1984:303). By 1 A.D., permanent villages were established. The greater sedentism, coupled with population growth, encouraged the development of a settlement pattern of secondary villages and seasonal camps.[22] The primary villages became the political, social, and ceremonial centers for communities by 1,500 A.D.[23] This pattern closely resembles the settlement system of the Nisenan, the ethnographic group whom inhabited the area of the lower foothills in the vicinity of Coloma.

Defining cultural materials by sequences remains problematical in the central Sierra, particularly in areas not intensively surveyed. Foothill archaeological sites have contained rockshelters, house pits, midden, pit and groove petroglyphs, bedrock mortars, grinding slicks, cobble pestles, metates, manos, Olivella Haliotis, clamshell, steatite and glass trade beads, quartz crystals, projectile points made from a variety of materials both local and traded, and lithic debitage of quartz, quartzite, basalt, rhyolite, slate, chert, and obsidian. Projectile points commonly found include Rose Spring contracting stem, Desert side-notched, cottonwood triangular, and several types of Elko series.

[18] Ibid.

[19] Ibid.

[20] Ibid.

[21] Ibid.

[22] Ibid.

[23] Ibid.

Ethnography. The project area lies squarely in the territory occupied in aboriginal and historic times by the Nisenan or Southern Maidu. Their territory extended to the Bear River and south of the South or Middle Fork of the Cosumnes River.[24,25,26] Nisenan, a Penutian language, can be divided into three main dialects, Northern Hill Nisenan, Southern Hill Nisenan, and Valley Nisenan.[27] Shipley (1978) has identified seven dialects. Other notable individuals who documented the ethnography of the Nisenan included Powers (1874), Dixon (1905), Beals (1933), and Uldall and Shipley (1966).

In Hugh W. Littlejohn's unpublished manuscript of Nisenan Geography, he notes that the Nisenan had names for every mountain, hill, flat, valley, canyon, spring, creek, and river. Villages normally derived their name from prominent features of the immediate landscape, from important local vegetation, and sometimes from a mythical or local celebrity. When the inhabitants of a village moved to another location, the new settlement assumed a different name from that of the old settlement. [28]

The chief political unit for the Nisenan was the tribelet, which consisted of a principal, permanent village surrounded by several secondary villages and seasonal camps. The population of the tribelet varied from 15-25 people to more than 500.[29] Its headman served as advisor to the people of the tribelet. The position was usually hereditary. The permanent village was usually found in the Foothill Belt or the lower Yellow Pine Belt, at an elevation of 1,000 to 4,000 feet. Winter village locations are typically found on knolls or in valleys with good southern exposure and adjacent to springs or other permanent sources of water. Typical village sites were along streams, knolls or ridges with a southern exposure. At the principal village, typical structures included family dwellings, acorn granaries, bedrock mortars, a sweat house, and a dance house.

In the area of the western slope of the Sierra, the territory of the foothill Nisenan crosses many plant communities, making available to them a wide variety of plant resources. The main food source for the Nisenan was acorns, although a wide variety of other resources were also used. Tan Bark Oak (*Lithocarpus densiflora*) and black oak (*Quercus kelloggii*) were preferred, with golden oak (*Quercus chrysolepis*), interior live oak (*Quercus wislizenii*) and scrub oak (*Quercus dumosa*) considered secondary food sources.[30] Extended families or entire villages would gather acorns. Trespass into an owned gathering area was discouraged. Acorns were cracked, shelled, and ground into flour in a mortar. They were then leached in sand and cooked in baskets using heated stones.[31]

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[24] Kroeber, A. L., 1925. *Handbook of the Indians of California*. Washington: Bureau of American Ethnology. Bulletin 78.

[25] Wilson, Norman L. and Arlean H. Towne, 1978. "Nisenan." *In* Handbook of North American Indians, Vol. 8: California. R.F. Heizer, ed. Washington, D.C.: Smithsonian Institution, pp. 387-397.

[26] Beals, Ralph L., 1933. Ethnology of the Nisenan. Berkeley: University of California Publications in American Archaeology and Ethnology. 31:6 (2):333-414.

[27] Kroeber, A. L., op. cit.

[28] Littlejohn, Hugh W., 1928. Nisenan Geography: Field Notes. Manuscript. U.C. Berkeley.

[29] Kroeber, A. L., op. cit.

[30] Baumhoff, Martin A., 1978. "Environmental Background." *In* Handbook of North American Indians, Volume 8: California. R. F. Heizer, ed. Washington: Smithsonian Institution.

[31] Wilson and Towne, op. cit.

Nuts of the sugar pine (*Pinus lambertiana*) were also gathered. Buckeye (*Aesculus californica*) was eaten only in times of starvation.[32] Roots, dug with a digging stick, might be eaten raw, or dried and pounded in mortars and pressed into cakes.[33] Grasses, herbs, rushes, berries, and grapes (*Vitis californica*) provided both food and materials for basketry, clothing, and other tools.[34] Manzanita (*Arctostaphylos*) berries were used to make a cider-like drink.[35] Animals hunted included deer, rabbits, and other small game. Mule deer (*Odocoileus hemionus*) were hunted in drives, with the use of fire, decoys, snares or deadfalls.[36] Rabbits (*Lepus*) were killed with sticks or blunted arrows, trapped, snared, or rounded up with the use of nets or fire. Grasshoppers, ants, lizards, and frogs were also eaten,[37] and salt was obtained from springs located near Cool.[38]

Rivers played an important role for the Nisenan, not only as territorial boundaries, but also as areas to procure food, such as salmon. The Nisenan called the North Fork of the American River "Yo dok im se o", the Middle Fork of the American River "Ko a ba", where the Middle and North Fork of the American River meet "Chul ku im se o", and the Bear River "Ku mim se o".[39] Fish were poisoned with soaproot (*Chlorogalum pomeridianum*) and turkey mullein or caught by hand in shallow water.[40] Weirs, nets, harpoons, traps and gorgehooks were also used to catch fish.

Tools, including arrow and spear points, knives, and scrapers, were made of basalt, chalcedony, jasper, or obsidian. A wide variety of mineral resources, including quartz, quartzite, quartz crystals, chert, slate, and soapstone were available within the project area. Preferred basketry materials were willow (*Salix*) and redbud (*Cercis occidentalis*), but the roots of yellow pine (*Pinus ponderosa*) and bracken fern (*Pteridophyta aquilinum*) were also used.[41] Clothing and adornment was not elaborate. Steatite and whole olivella shell bead necklaces were among the items traded from the Patwin and Maidu.[42] Males often wore a breechcloth, and women a skirt of wire grass.[43]

The Nisenan in the project area were not affected by the pre-Gold Rush settlement of California as were their neighbors in the valley. It is estimated that the Valley Nisenan were reduced by three-fourths of their number by an epidemic of malaria in 1833.[44] But, shortly after the discovery of gold

[32] Baumhoff, Martin A., op. cit.

[33] Wilson and Towne, op. cit.

[34] Ibid.

[35] Ibid.

[36] Ibid.

[37] Ibid.

[38] Heizer, Robert F. and A. E. Treganza, 1972. *Mines and Quarries of the Indians of California*. Ramona, California: Ballena Press.

[39] Littlejohn, Hugh W., op. cit.

[40] Wilson and Towne, op. cit.

[41] Ibid.

[42] Ibid.

[43] Ibid.

[44] Cook, Sherburne F., 1955. *The Epidemic of 1830-1833 in California and Oregon.* Berkeley: University of California Publications in American Archaeology and Ethnology 43(3):321-322.

in January 1848, the heart of foothill Nisenan territory was overrun with white miners. By 1860, their native lifeways were nearly obliterated.[45] By the late 1930s, no living Nisenan could recall the lifeways before contact with white miners or settlers.[46]

According to Norman Wilson (1995), the Nisenan peoples occupied the drainages of the Yuba, Bear, and the American Rivers from the Sacramento River on the west to the summit of the Sierra in the east. The Foothill and Hill Nisenan peoples were distinctive from the Valley Nisenan and were loosely organized into triblets or districts with large central villages, surrounded by smaller villages. These central villages, often referred to as winter villages, seemed to have held control over the smaller camps and specific surrounding territory.[47,48,49] Ethnographic reports, such as those by Merriam (1902) and Littlejohn (1928) often mention "Big Times" in specific locations bi-annually or annually. Two of these locations were near Cool and Garden Valley in El Dorado County.

Territorial boundaries were oriented towards natural resources and land forms. In the foothills and mountains the major drainages became formal or informal boundaries, with the land between forming the boundary. Thus, the Placerville District was between the Cosumnes River and the Middle Fork of the American River, the Auburn District was between the Middle Fork of the American River and the Bear River, and the Nevada City District was between the Bear River and the Yuba River. Within these districts, there were important villages, where headmen held significant power.

Mining Technology. Mining technology was and is the key ingredient in the success of mineral exploration, although no substantial evidence of historic mining was found within the project area. The nineteenth century was foremost a period of invention and experimentation in mining machinery and tools. From the simple tools of the early gold rush – the pan, rocker, spoon, knife – to the more elaborate machines of late nineteenth century – the stamp mill, ball mill, hydraulic monitor and elevator – mining was dependent upon its own technology.

Throughout the Mother Lode, thousands of miles of streams and gulches were mined using the technique of ground sluicing. Ground sluicing consisted of washing gravel deposits by hand, digging the gravel into sluices and discarding the larger cobbles. Often times, the cobbles were stacked upon one another to form linear rock walls to channel water. Extensive ditch systems are often found near or at ground sluiced areas, since water was necessary to sluice the gravel and recover the gold. While ground sluicing, miners would accidentally come upon projections of quartz above the surface. Many of these "local quartz attractions," as they were called, were explored, most with little success. Methods of exploration usually included the use of picks, shovels, and black powder.

Historic Context. The history of the project area is directly linked to the Gold Rush of the 1850s, the economic and agricultural development of El Dorado County, and commerce and trade within the historic communities associated with Green Valley. In January 1848, gold was discovered

[45] Moratto, 1984, op. cit.

[46] Wilson and Towne, 1978, op. cit.

[47] Beals, 1933, op. cit.

[48] Littlejohn, 1928, op. cit.

[49] Wilson and Towne, 1978, op. cit.

in Coloma. One year later, thousands of would-be gold seekers arrived in the "diggins." Many passed through the area and eventually settled in the townsites of Clarksville, Shingle Springs, Live Oak, Green Valley, and Coloma.

Euro-American exploration of the subject property began prior to 1848 during the Anglo colonization of what came to be known as Coloma, when several mining companies explored Weber Creek, finding large quantities of placer gold. Mining remained an important part of the Weber Creek area through the 1930s. The old emigrant road from Coloma to Sacramento loosely followed the route of present-day Green Valley Road/Malcolm-Dixon Road. While there were no large communities near the subject property, there were, however, many small mining camps and post offices in the immediate area. The closest mining camp to the project area was located at New York Ravine, which lies approximately a half mile to the northwest.

Both the Sacramento-Coloma Road and the Sacramento and Placerville Wagon Road developed from a circuitous trail used by emigrants and miners between 1848 and 1850. With the emigration of 1849 and 1850 the route was improved to accommodate wagons. In later years, 1860-1861, the wagon road is believed to have been the route selected by the Pony Express riders, although conflicting evidence also suggests this route followed the alignment of present-day Green Valley Road to Folsom.

Numerous waystations or hotels were built along the routes. Before entering the foothills, emigrants and miners following the Sacramento-Placerville Wagon Road stayed at the Prairie House, which dates to 1851, followed by the What Cheer House, Wellington House, White Rock Springs Ranch Hotel, Aldridge Ravine House, Bar E Ranch, Carson Creek House, Mormon Tavern, Clarksville (Clarkson's Village), Atlantic House, Ohio House, and the Deer Creek House.[50] Over 20 more hotels existed between the Deer Creek House and Placerville, including the early mining camps of Shingle Springs, Mud Springs, and Diamond Springs.

Argonauts coming east to the gold region from San Francisco and Sacramento would find the Coloma Road extremely significant, since it was the primary and only route from west to east to the gold diggings in El Dorado County in 1848-49. It is important to point out that in 1848 the primary route to the gold mines from Sacramento was along the Coloma Road. It was not until 1849-1850 that Placerville, or Dry Diggings as it was known then, became an important mining camp.

In 1848-1849 Placerville or Dry Diggings, Coloma's rival, was a fledgling mining camp and certainly had not as yet equaled the notoriety and prestige of Coloma, the site of the gold discovery. In the following four years this was all to change, when Coloma decreased in importance as the principal mining camp and county seat of El Dorado, giving up its prestige to Placerville. This transition of local government and population affected the degree to which the early-day road systems developed and in due time led to the establishment of the Placerville and Sacramento Wagon Road or White Rock Road as the premier route to the mines. This route bisected Clarksville and continued east, south of present-day Green Valley Road or Coloma Road, avoiding the Green Valley Ranch, Coloma, and mining camps around Coloma.

[50] Cross, Ralph Herbert, 1954. *The Early Inns of California.* San Francisco: Cross and Brandt.

It is believed that it was between 1850 and 1854 and again between 1860 and 1870 that the vast majority of road houses were built along the Coloma Road between Sacramento, Coloma, and Placerville, in direct competition with the White Rock or Sacramento and Placerville Wagon Road to the south. The competition for business was keen along both roads as traders and store owners erected two story edifices in hopes of attracting the majority of the overland and local traffic enroute to the mines. The Green Valley House was among the first of the pioneer waystations or hotels to be built between Sacramento and the mines camps to the east. The Pleasant Grove Hotel was also an important waystation owned by the Rust and later Dixon families to the east of the study area.

In Historic Spots in California by Hoover, the "Coloma Road was marked out in 1847-1848 by Sutter and his men as a way to his sawmill on the South Fork of the American River." The following is a description of the road, provided by Hoover, which confirms that the old "Coloma Road" did indeed pass directly through Green Valley on its way to Coloma:

> *Running along the south side of the river from Sacramento to where Folsom now is, this first trail followed approximately the same line as that taken later by the railroad and the modern highway. From Folsom it continued by way of Mormon Island, Green Valley (Rescue), Rose Springs, and Uniontown (Lotus) to Sutter's Mill, later Coloma -- the present route of a quiet country road along which a few mementos of pioneer days still remain.*[51]

Of particular importance to the project area was the gold mining surrounding Salmon Falls, which was once located about four to five miles to the northwest. The mining community of Salmon Falls was located on the South Fork of the American River, a few miles from the junction of the Middle Fork, and now partly under Folsom Lake. Noted on Gibbes' 1851 map, Salmon Falls was one of the earliest successful gold camps, likely discovered before July 1848 by Mormons from Sutter's grist mill. Rich diggings were found around January 1851, the population soared to 3,000, and a post office was established on October 7, 1851.[52]

An 1866 General Land Office Survey Plat Map does not depict any improvements within the project area. In order to understand historic land ownership patterns within and near the project area, three principal maps were examined: 1895, 1908, and 1925 Official Maps of El Dorado County. These maps were developed by a cartographer who utilized tax assessment data to verify land ownership. In 1895 most of the south 1/2 of Section 24 was owned by Robert Ricker. To the north in Section 24, approximately 80 acres were owned by J. Simpson. His property continued to the north into Section 13. To the east of the property owned by Simpson and Ricker was a 160 acre piece of land in Section 24 owned by George F. Zentgraf. The primary home of the Zentgraf family lay to the east along Deer Valley Road. By 1925, the property ownership remained largely the same with the exception that Zentgraf had sold his landholdings to Louis Klump.[53] By the latter part of the twentieth century, most of the study area parcels had been consolidated into one landholding owned by the Dixon family.

[51] Hoover, Mildred B., 1966. *Historic Spots in California*. Stanford University Press. Stanford, CA. Third edition.

[52] Gudde, Edwin G., 1975. *California Gold Camps*. Berkeley: University of California Press.

[53] Official Maps of El Dorado County 1895, 1908 and 1925.

Land Ownership History. The Dixon family played a significant role in the early history of El Dorado County around Live Oak and Salmon Falls districts, although other individuals actually developed the parcels contained in the project area during all of the nineteenth century and for the first half of the twentieth century. The first was George Ricker, who was born circa 1836 in Germany. He was enumerated in the 1880 United States Federal Census as a farmer, aged 44 years, living in Salmon Falls Township in El Dorado County with his wife, Mary A., aged 33 years.[54] In the L.M. McKenney & Company City and County Directory for 1884-1885, George Ricker is listed as a farmer in Salmon Falls, approximately 9 miles by stage from Folsom.[55]

The second significant landowner was Anton Zentgraf (Zentgraf), who is enumerated in the 1870 and 1880 United States Federal Census as a white male, born circa 1828 in Wurttemberg, Germany. He is listed as a farmer living in Salmon Falls Township with his wife, Elizabeth.[56]

Jacob Zentgraf, likely the older brother of Anton, was born in circa 1820 in Saxony, Germany. He was enumerated in the 1880 United States Federal Census as a white male, aged 60 years, a farmer, living in White Oak Township in El Dorado County, California with his wife, Mary, aged 43 years.[57] In the L.M. McKenney & Company City and County Directory for 1884-1885, Jacob Zentgraf is listed as a distillery owner in Salmon Falls, approximately 9 miles by stage from Folsom. His brother, Anton Zentgraf is listed as a miner in Salmon Falls.[58]

George F. Zentgraf, oldest son of Jacob Zentgraf was enumerated in the 1910 United States Federal Census as a white male, aged 51 years, born in California in 1859. He was listed as a laborer, living in White Oak Township with his wife, Annie M, aged 45 years.[59] By 1920, George F. Zentgraf, aged 60 years, and his wife, Annie M. , aged 56 years, were living on K Street in Sacramento, where he was employed at the State Capitol as a gardener. His son, George Zentgraf, aged 32 years, was a farmer living with his wife, Marie, aged 32 years in Mud Springs, El Dorado County.[60]

Finally, Louis Klump, who appears to have owned the parcel where the existing ranch buildings still stand, was born in January 1855 in Germany and immigrated to the United States in 1873. He was married to Hannah and had two children, Mary Clara and George. Louis Klump was enumerated in the 1900 and 1910 United States Federal Census as a saloon merchant, living on Sutter Street in Granite Township, Sacramento County, California. By 1920, the United States Federal Census lists him as a soft drink parlor proprietor, likely due to prohibition.

During the mid-twentieth century the Dixon family, who had already established themselves as one of the western county's most successful ranching families, began to purchase parcels of land depressed

[54] United States Federal Census, 1880. Salmon Falls, El Dorado County, California, Roll 65, Page 89C, Image 0178.

[55] L.M. McKenney & Company. City and County Directory, including Sacramento City and County, and Amador, El Dorado, and Placer Counties. San Francisco:, pub. 1884-1885.

[56] United States Federal Census, 1870 and 1880. Salmon Falls, El Dorado, California.

[57] United States Federal Census, 1880. White Oak, El Dorado, California, Roll 65, Page 53D, Image 0107.

[58] L.M. McKenney & Company, op. cit.

[59] United States Federal Census, 1910. White Oak, El Dorado, California, Page 17A, Image 705.

[60] United States Federal Census, 1920.

by poor economic growth during the Great Depression of the 1930s. By the 1950s, the Dixons had acquired much of the project area.

The story of the Dixon family begins with Henry G. Dixon who was born December 12, 1822, in Glasgow, Scotland. Henry Dixon married Hannah Pickerskill of Yorkshire, England. They immigrated to the Waukesha, Wisconsin, where their two sons, William and Robert G., were born. In 1862, when Robert was two years old, the family left Wisconsin and came down the Mississippi on a flatboat as far as New Orleans, where they traveled by boat to the Isthmus of Panama. The family traversed the Isthmus by mule, locating first at Carson City, Nevada.[61]

The Dixon family next moved to Lake Valley and eventually settled in the western part of El Dorado County. Their third son, Charles Dixon was born on October 18, 1864, near Lake Tahoe at an early settlement between Glenbrook and Carson City. Their fourth son, George Dixon, was born in Sacramento County on the Hagin Grant on March 29, 1866. James Dixon was born in Log Cabin No. 2 at Lake Tahoe on October 27, 1867, and was the first white child born at Lake Tahoe. Elizabeth Dixon, their only daughter, was born on April 27, 1869, in Log Cabin No. 2 at Lake Tahoe. The present-day property identified by the Lake Tahoe Historical Society as Marker No. 11 was the land owned by Henry and Hannah Dixon, which they eventually sold to Charles Sibeck.[62]

On May 18, 1871, Fred Dixon, the sixth son of Henry and Hannah Dixon, was born at Middletown, just outside of Placerville. In 1875, the Dixon family moved to Live Oak. The family was poor and Fred Dixon was driving teams of horses over the summit to earn money by the time he was thirteen years old.[63]

Charles Dixon married Edith E. Darrington in 1902. Edith Darrington was born on March 15, 1881, in the Negro Hill District of El Dorado County.[64] From the age of eleven, Charles Dixon made his home in the Live Oak District (believed to be on the north side of Malcolm Dixon Road), engaged in ranching, dairying and farming throughout his life. Following their marriage, around circa 1903, Charles and Edith established their own home in the Live Oak District of El Dorado County directly across the road from the Live Oak School.

On July 2, 1910, Robert G. Dixon was appointed administrator for Anna Clayborn, deceased.[65] The 1910 Federal United States Census enumerated Charles Dixon as a 45-year-old white male, born in Nevada, farm laborer, living in the Salmon Falls Township with his wife, Edith E., aged 29 years.[66]

Charles Dixon died on October 28, 1933, and was buried at the family plot in the Mormon Island Cemetery. He was survived by his wife, Edith.[67] Robert G. Dixon, older brother of Charles, passed

[61] Yohalem 1977: 231-233; Mountain Democrat, May 11, 1988. El Dorado County Historical Museum 2011.

[62] Ibid.

[63] Ibid.

[64] Ibid.

[65] Mountain Democrat, July 2, 1910.

[66] Mountain Democrat, September 17, 1910.

[67] Mountain Democrat 1933; El Dorado County Historical Museum 2011.

away on Friday, January 26, 1939, at the age of 78 years. The funeral was held from the Miller Mortuary Chapel of Folsom with Reverend John Dunlap officiating.

Charles and Edith Dixon had five children: Elvin Charles, Evelyn Leonora, Raymond, Clara May, and Lillian Jane. The Dixon family reportedly purchased most of the parcels included in the project APE in the 1940s, and one of the subject properties is currently owned by Robert and Amanda Pena and Kim Dixon, daughter of Joyce Dixon.

The Dixon family reportedly constructed the dilapidated ranch buildings that comprise P-9-1140 in the 1940s as well.[68]

(3) Paleontological Resources. Cultural resource analysis includes the potential for discovery or disturbance of paleontological resources. However, due to characteristics of the geologic formation of the County, the potential for such resources are localized in the Mehrten Formation comprising thick accumulations of sedimentary rocks. Under the 2004 General Plan EIR, this formation was mapped and found to be in areas east of Placerville (see Exhibit 5.13-1 Paleontological Sensitivity Map Land Use Intensity for the 1996 General Plan and No Project Alternatives, El Dorado County General Plan EIR). The project site does not lie within this formation and the potential for discovery of paleontological resources are less than significant.

b. Regulatory Context. The following describes CEQA and El Dorado County regulatory and policy requirements for cultural resources.

(1) El Dorado County. The Conservation and Open Space Element of the El Dorado County General Plan provides the following goals and policies related to cultural resources:

- *Goal 7.5: Cultural Resources*. Ensure the preservation of the County's important cultural resources.
- Policy 7.5.1.3: Cultural resource studies (historic, prehistoric, and paleontological resources) shall be conducted prior to approval of discretionary projects. Studies may include, but are not limited to, record searches through the North Central Information Center at California State University, Sacramento, the Museum of Paleontology, University of California, Berkeley, field surveys, subsurface testing, and/or salvage excavations. The avoidance and protection of sites shall be encouraged.
- Policy 7.5.1.6: The County shall treat any significant cultural resources (i.e., those determined California Register of Historical Resources/National Register of Historic Places eligible and unique paleontological resources), documented as a result of a conformity review for ministerial development, in accordance with CEQA standards.

2. Impacts and Mitigation Measures

This section analyzes the impacts related to cultural resources that could result from the development of the proposed project. The section begins with criteria of significance, which establish the thresholds for determining whether a project impact is significant. The latter part of the section presents the potential cultural resources impacts associated with the proposed project. Mitigation measures are provided as appropriate and feasible.

[68] Supernowicz, Dana E., 2011. Personal communication with Richard Klinginsmith, March.

a. Significance Criteria. The proposed project would result in a significant cultural resources impact if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined CEQA Guidelines Section 15064.5;
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5;
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature; or
- Disturb any human remains, including those interred outside of formal cemeteries.

b. Project Impacts. The following discussion describes the potential cultural resources impacts that could result from implementation of the project.

(1) Historical Resources. The Dixon Ranch Buildings (P-9-1140), which were previously recorded by Pacific Legacy in 1998, comprise a series of buildings and structures cobbled together in circa 1940 from older buildings, lack integrity and association with significant events in the history of El Dorado County, have no scientific research value, and consequently do not appear to be individually eligible for under CRHR Criteria 1, 2, 3 and 4. Furthermore, P-9-1140 (stone reservoir) and CA-ELD-1193-H (abandoned segment of Green Valley/Old Coloma Road) also lack integrity, is not associated with significant events in the history of El Dorado County, wagon, stage, or emigrant travel in the region, and consequently the segment is not individually eligible for under CRHR Criteria 1 and 3. Neither is the property a contributing element to a CRHR historic district, either contiguous or discontiguous. A small trash scatter, previously unidentified, associated with P-9-1140, dates to the late 1940s and 1950s and has no scientific research value of significance.

Additionally, the following features were identified on the project site: (1) Dry Laid Rock Walls, and (2) the Dixon Ranch Stone Corral and Bedrock Mortars H/P-1.[69] As stated previously, these cultural resources do not qualify for listing on the CRHR and, therefore, destruction of these features would not result in a significant impact.[70] However the preservation of these resources would still be desirable, and the following mitigation measures have been identified.

<u>Impact CULT-1</u>: Ground disturbing activities associated with site preparation and the construction of the proposed project could result in the destruction of historic and prehistoric artifacts on the project site. (S)

<u>Mitigation Measure CULT-1</u>: Protective fencing shall be placed around the Dixon Ranch Stone Corral, Bedrock Mortars, and Dry Laid Rock Walls during construction of the proposed project. Protection and preservation of these features should be considered for incorporation into the site plan. If ground disturbance will occur within 20 meters of the bedrock mortars, an

[69] Please note that it appears the mortars may be located in Lot 1. As noted previously, other than the creation of the 5-acre lot, no changes are proposed to the physical conditions of the lot as part of this project.

[70] Supernowicz, Dana E., MA, RPA, 2014. Historic Resource Associates. Personal communication with LSA Associates, Inc., January 26.

archaeological monitor should be present, to ensure protection of these resources. If these features need to be removed for construction of the project, the following activities are recommended:

- Undertake photo-documentation and prepare scaled drawings of the corral and dry-laid rock walls, and bedrock mortar.
- Consult with tribal leaders to consider the possible removal of the bedrock mortars to a location where they can be preserved and interpreted, such as the Shingle Springs Rancheria, 5281 Honpie Rd, Placerville, CA 95667. (LTS)

(2) Archaeological Resources. Potentially significant impacts related to archaeological resources are described below.

<u>Impact CULT-2</u>: Ground-disturbing construction associated with the project may result in impacts to unidentified historical archaeological deposits that may qualify as historical or archaeological resources under CEQA. (S)

Ground-disturbing activities include, but are not limited to, site grading, foundation preparation, utility pipeline placement, and landscaping. Ground-disturbing activities may also occur related to implementation of the transportation and utility mitigation measures described in Sections IV.C, Transportation and Circulation, and IV.L, Utilities. These ground-disturbing activities have the potential to disturb or destroy historical archaeological deposits. Should such archaeological deposits qualify as historical or archaeological resources as defined in PRC sections 21084.1 and 21083.2(g), the disturbance or destruction would result in a substantial adverse change in the deposits' significance. Implementation of the following mitigation measures will reduce the potential impact to a less-than-significant level.

<u>Mitigation Measure CULT-2</u>: A qualified archaeologist shall monitor ground-disturbing project activities at the project site and along the off-site sewer alignment. Archaeological monitors must be empowered to halt construction activities at the location of the discovery to review possible archaeological materials and to protect the resource while the finds are being evaluated. Monitoring shall continue until, in the archaeologist's judgment, archaeological deposits are not likely to be encountered.

If archaeological deposits are discovered during project activities, all work within 100 feet of the discovery shall be redirected until the archaeological monitor assesses the situation, consults with agencies as appropriate, and provides recommendations for the treatment of the discovery. Adverse effects to archaeological deposits should be avoided by project activities. If such deposits cannot be avoided, they shall be evaluated for their California Register of Historical Resources eligibility. If the deposits are not eligible, a determination shall be made as to whether it qualifies as a "unique archaeological resource" under CEQA. If the deposits are neither a historical nor unique archaeological resource, avoidance is not necessary. Adverse effects to significant sites that cannot be avoided, or sites that cannot be preserved, must be mitigated. Mitigation can include, but is not necessarily limited to, excavation of the deposit in accordance with a data recovery plan (see *CEQA Guidelines* Section 15126.4(b)(3)(C)) and standard archaeological field methods and procedures; laboratory and technical analyses of recovered archaeological materials; preparation of a report detailing the methods, findings, and

significance of the archaeological site and associated materials; and accessioning of archaeological materials and a technical data recovery report at a curation facility.

Upon completion of the monitoring, the archaeologist should prepare a report that describes the results of the monitoring, including any measures that may have been implemented for mitigation of impacts to significant archaeological deposits identified during monitoring. The report should be submitted to the El Dorado County Planning Division and the Northwest Information Center. (LTS)

(3) Human Remains. Implementation of the proposed project has the potential to impact human remains.

Impact CULT-3: Project ground-disturbing activities may disturb human remains, including those interred outside of formal cemeteries, and may result in impacts to cultural resources under CEQA. (S)

Mitigation Measure CULT-3: If human remains are encountered, these remains shall be treated in accordance with Health and Safety Code Section 7050.5 and *CEQA Guidelines* Section 15064.5(e). The project applicant shall inform its contractor(s) of the appropriate protocols in the event that human remains are unearthed by including the following directive in contract documents:

> *If human remains are encountered during project activities, work within 100 feet of the discovery shall be redirected and the El Dorado County Coroner notified immediately. At the same time, an archaeologist shall be contacted to assess the situation and consult with agencies as appropriate. Project personnel shall not collect or move any human remains and associated materials. If the human remains are of Native American origin, the Coroner must notify the Native American Heritage Commission within 24 hours of this identification. The Native American Heritage Commission will identify a Most Likely Descendant to inspect the site and provide recommendations for the proper treatment of the remains and associated grave goods.*

The County shall verify that the language has been included in the contract documents before issuing a grading permit.

Upon completion of the assessment, the archaeologist shall prepare a report documenting the methods and results, and provide recommendations for the treatment of the human remains and any associated cultural materials, as appropriate and in coordination with the recommendations of the MLD. The report should be submitted to the El Dorado County Planning Services Division and the North Central Information Center. (LTS)

(4) Paleontological Resources. Implementation of the proposed project has the potential to impact paleontological resources.

Impact CULT-4: Ground disturbing activities associated with project implementation may destroy unique paleontological resources.

Ground disturbing construction associated with the project may inadvertently encounter and damage paleontological resources. Ground-disturbing activities may also occur related to implementation of the transportation and utility mitigation measures described in Sections IV.C, Transportation and Circulation, and IV.L, Utilities. Should this occur, project construction may result in the destruction of a unique paleontological site. Implementation of Mitigation Measure CULT-4 will ensure that impacts to unique paleontological resources are mitigated to a less-than-significant level.

> Mitigation Measure CULT-4: The project applicant shall include the following directive on the grading plans:
>
> > *If paleontological resources are encountered during project subsurface construction, all ground-disturbing activities within 100 feet shall be redirected and a qualified paleontologist contacted to assess the situation, consult with agencies as appropriate, and make recommendations for the treatment of the discovery. Project personnel shall not collect or move any paleontological materials. Paleontological resources include fossil plants and animals, and such trace fossil evidence of past life as tracks. Ancient marine sediments may contain invertebrate fossils such as snails, clam and oyster shells, sponges, and protozoa; and vertebrate fossils such as fish, whale, and sea lion bones. Vertebrate land mammals may include bones of mammoth, camel, saber tooth cat, horse, and bison. Paleontological resources also include plant imprints, petrified wood, and animal tracks.*
>
> The County shall verify that the language has been included in the grading plans before issuing a grading permit.
>
> Adverse effects to such deposits shall be avoided by project activities. If avoidance is not feasible, the paleontological resources shall be evaluated for their significance. If the resources are not significant, avoidance is not necessary. If the resources are significant, project activities shall avoid disturbing the deposits, or the adverse effects of disturbance shall be mitigated. Mitigation may include monitoring, recording the fossil locations, data recovery and analysis, a final report, and accessioning the fossil materials and technical report to a paleontological repository. Upon completion of the paleontological assessment, a report shall be prepared documenting the methods, results, and recommendations of the assessment. The report shall be submitted to the El Dorado County Planning Services Division and, if paleontological materials are recovered, a paleontological repository, such as the University of California Museum of Paleontology. (LTS)

c. Cumulative Impacts. The proposed project, in conjunction with other development in El Dorado County, has the potential to cumulatively impact cultural and paleontological resources; however, it should be noted that each development proposal received by the County undergoes environmental review pursuant to CEQA. If there is a significant impact to cultural or paleontological resources, an investigation would be required to determine the nature and extent of the resources and identify appropriate mitigation measures.

The proposed project is not anticipated to have a significant cumulative impact on cultural or paleontological resources, provided that appropriate evaluations are conducted on a case-by-case basis to determine whether the resources are “unique archaeological resources” or “historical resources,” and appropriate mitigation measures including but not limited to preservation in place,

capping, or data recovery, are implemented prior to grading. In addition, because the proposed project would not impact any known significant resources, and potential impacts to unknown buried resources can likely be reduced to below a level of significance, the proposed project, in combination with other past, present, and reasonably probably future projects, would not result in a cumulatively significant impact to cultural resources. Therefore, implementation of project mitigation measures and mitigation measures relevant to other projects in the County would reduce any potential cumulative impacts related to cultural resources to less-than-significant levels.

I. GEOLOGY, SOILS, AND SEISMICITY

This section describes the project site's geologic environment based on a 2011 preliminary geotechnical investigation[1] and addendum[2] for the project site. Other information sources used for this analysis include published geologic reports and maps by the United States Geological Survey (USGS), California Geological Survey (CGS), and the County, and a site reconnaissance. This section also assesses potential impacts from strong ground shaking, liquefaction, differential settlement, and unstable or expansive soils. Mitigation measures for the identified significant impacts are provided, where appropriate.

1. Setting

The project site's existing conditions related to geology and seismicity are described below.

a. Geologic Conditions. The following section describes existing geologic conditions at the project site.

(1) Geology. The project site is located in the western foothills region of the Sierra Nevada Mountain Range. According to geologic maps, the project area is underlain by inter-fingerings of metavolcanic and ultramafic rocks of the Foothills Melange-Ophiolite Terrane of Late Palezoic to Mesozoic age.[3]

The preliminary geotechnical investigation included exploration of 14 test pits at the project site in April 2011. An additional three test pits on the Dixon residence parcel (126-020-01) were explored in June 2011 for the preliminary geotechnical addendum. In general, soils in the project area consisted of 1 to 4 feet of red brown, sandy silt overlying blue-gray weathered bedrock.

Groundwater seeps were encountered in four of the test pits during the explorations, at depths of 1 to 4 feet below ground surface (bgs). All seeps were identified in the southern part of the project site, south of the Dixon residence parcel. Groundwater was not encountered in any of the other test pits to the depth of exploration, which ranged from 4 to 7 feet bgs. Based on experience in the project vicinity, the geotechnical investigation report authors stated that perched groundwater may also be present on less weathered bedrock at varying times of the year, as well as being present in the fractures and seams of weathered bedrock.

[1] Youngdhal Consulting Group, 2011a. *Preliminary Geotechnical Engineering Study for Dixon Ranch Subdivision, Green Valley Road, El Dorado Hills, El Dorado County, California*. April 29.

[2] Youngdhal Consulting Group, 2011b. *Preliminary Geotechnical Engineering Study – Addendum Parcel, Dixon Ranch Subdivision, Green Valley Road, El Dorado Hills, El Dorado County, California*. June 14.

[3] Youngdhal Consulting Group, 2011a, op cit.

(2) Soils. Most of the soils at the project site are classified as Auburn silt loam and Auburn very rocky silt loam, 2 to 30 percent slopes (Table IV.I-1). These soils are well drained and are underlain by hard metamorphic rocks at a depth of 12 to 26 inches. An area in the northern portion of the project site is mapped as Serpentine rock land. Serpentine rock land consists of areas of highly resistant serpentine and other ultramafic rock formations. Rock outcrops and stones make up from 50 to 90 percent of the surface within this soil unit.

Table IV.I-1: Soils at the Project Site

Soil Association/Name	Slope (degrees)	Approximate Area (percentage)
Auburn silt loam	2 to 30	64.4
Auburn very rocky silt loam	2 to 30	30.4
Serpentine rock land	NA	5.2

Source: United States Department of Agriculture, 2013. Web Soil Survey, websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx (accessed September 16).

(3) Topography. Based on USGS topographic maps, elevations at the project site range from about 960 to 1,235 feet above mean sea level.[4] Project site topography generally slopes to the west and north from an east to west ridgeline in the southern portion of the project site. Elevation varies approximately 300 feet south to north and about 100 feet east to west.

b. Seismic Conditions. The project site is not located within a mapped Alquist-Priolo Earthquake Fault Zone (A-PEFZ) and no evidence of recent or active faulting was identified during the geotechnical investigation of the site.[5] The nearest mapped active and potentially active faults near the project site are presented in Table IV.I-2.

Table IV.I-2: Local Active and Potentially Active Faults

Age	Fault Name	Distance and Direction from Project Site
Last 200 years	West Tahoe Fault	52.8 miles ENE
Last 200 years	North Tahoe Fault	59.0 miles NE
Late-Quaternary	Dunnigan Hills Fault	38.5 miles W
Late-Quaternary	Bear Mountains Fault Zone – East Splay	6.2 miles W
Pre-Quaternary	Bear Mountain Fault Zone – West Splay	1.2 miles E
Pre-Quaternary	Melones Fault Zone	12.4 miles E
Pre-Quaternary	Maidu Fault	5.6 miles W

Source: Youngdahl Consulting Group, 2011a.

c. Seismic and Geologic Hazards. The following section describes existing seismic and geologic hazards present at the project site.

[4] Youngdhal Consulting Group, 2011a, op cit.

[5] Ibid.

(1) Surface Rupture. Surface rupture occurs when the ground surface is broken due to fault movement during an earthquake. Surface rupture generally can be assumed to occur along an active major fault trace. No active faults have been mapped at the project site, and the geotechnical investigation found no evidence of recent or active faulting during field work; therefore, the potential for fault rupture at the project site is negligible.[6]

(2) Ground Shaking. Ground shaking is a general term referring to all aspects of motion of the earth's surface resulting from an earthquake, and is normally the major cause of damage in seismic events. The extent of ground shaking is controlled by the magnitude and intensity of the earthquake, distance from the epicenter, and local geologic conditions. The Modified Mercalli Intensity Scale (MMI) is the most commonly used scale for measurement of the effects of earthquake intensity (Table IV.I-3). A related concept, acceleration, is measured as a fraction or percentage of the acceleration under gravity (g).[7]

Estimates of the peak ground acceleration (PGA) have been made for the United States based on probabilistic models that account for multiple seismic sources. Under these models, consideration of the probability of expected seismic events is incorporated into the determination of the level of ground shaking at a particular location. The expected PGA (with a 10 percent chance of being exceeded in the next 50 years) generated by any of the seismic sources potentially affecting the project site is estimated by USGS as 0.06 (g).[8] This corresponds to level V on the MMI (Table IV.I-3), which indicates moderate perceived shaking and very light potential damage. Based on the relatively low seismicity of the project region, the geotechnical investigation recommended that building design use Class C seismic design criteria, which apply to sites with moderate seismic risks.[9]

(3) Liquefaction and Lateral Spreading. Liquefaction is the temporary transformation of loose, saturated granular sediments from a solid state to a liquefied state as a result of seismic ground shaking. In the process, the soil undergoes transient loss of strength, which commonly causes ground displacement or ground failure to occur. Saturated soils are a necessary condition for liquefaction. Soil layers in areas where the groundwater table is near the surface have higher liquefaction potential than those in which the water table is located at greater depths. Lateral spreading is a form of horizontal displacement of soil toward an open channel or other "free" face, such as an excavation boundary. In a lateral spreading failure, a layer of ground at the surface is carried on an underlying layer of liquefied material over a nearly flat surface toward a river channel or other bank.[10] The lateral spreading hazard will tend to mirror the liquefaction hazard for a site.

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[6] Ibid.

[7] The acceleration due to gravity, denoted *g* (also gee) is a unit of acceleration defined as approximately 32 ft/s^2, which is the acceleration due to gravity on the Earth's surface at sea level.

[8] U.S. Geological Survey, 2013. *Probabilistic Seismic Hazards Custom Mapping Page.* Website: geohazards.usgs.gov/hazards/apps/cmaps/. September 16.

[9] Youngdhal Consulting Group, 2011a, op. cit.

[10] Association of Bay Area Governments, 2001. *The REAL Dirt on Liquefaction, A Guide to the Liquefaction Hazard in Future Earthquakes Affecting the San Francisco Bay Area*, February.

Table IV.I-3: Modified Mercalli Scale

M[a]	Category	Definition
	I	Not felt except by a very few under especially favorable circumstances.
3	II	Felt only by a few persons at rest, especially on upper floors of buildings. Delicately suspended objects may swing.
	III	Felt quite noticeably indoors, especially on upper floors of buildings, but many people do not recognize it as an earthquake. Standing motor cars may rock slightly. Vibration like passing of truck. Duration estimated.
4	IV	During the day felt indoors by many, outdoors by few. At night some awakened. Dishes, windows, doors disturbed; walls make cracking sound. Sensation like heavy truck striking building. Standing motor cars rocked noticeably.
	V	Felt by nearly everyone, many awaken. Some dishes, windows, etc., broken; a few instances of cracked plaster; unstable objects overturned. Disturbances of trees, poles, and other tall objects sometimes noticed. Pendulum clocks may stop.
5	VI	Felt by all, many frightened and run outdoors. Some heavy furniture moved; a few instances of fallen plaster or damaged chimneys. Damage slight.
6	VII	Everybody runs outdoors. Damage negligible in building of good design and construction; slight to moderate in well-built ordinary structures; considerable in poorly built or badly designed structures; some chimneys broken. Noticed by persons driving motor cars.
	VIII	Damage slight in specially designed structures; considerable in ordinary substantial buildings, with partial collapse; great in poorly built structures. Panel walls thrown out of frame structures. Fall of chimneys, factory stacks, columns, monuments, walls. Heavy furniture overturned. Sand and mud ejected in small amounts. Changes in well water. Persons driving motor cars disturbed.
7	IX	Damage considerable in specially designed structures; well-designed frame structures thrown out of plumb; great in substantial buildings, with partial collapse. Buildings shifted off foundations. Ground cracked conspicuously. Underground pipes broken.
8	X	Some well-built wooden structures destroyed; most masonry and frame structures destroyed with foundations; ground badly cracked. Rails bent. Landslides considerable from river banks and steep slopes. Shifted sand and mud. Water splashed (slopped) over banks.
	XI	Few, if any, (masonry) structures remain standing. Bridges destroyed. Broad fissures in ground. Underground pipelines completely out of service. Earth slumps and land slips in soft ground. Rails bent greatly.
	XII	Damage total. Practically all works of construction are damaged greatly or destroyed. Waves seen on ground surface. Lines of sight and level are distorted.

[a] Richter magnitude correlation.

Source: California Geological Survey, 2002b. *How Earthquakes and Their Effects are Measured*.

Due to the lack of a permanent elevated groundwater table, relatively low regional seismicity, the relatively shallow depth to bedrock, and the relatively dense nature of site soil and rock, the site geotechnical investigation concluded that potential damage due to site liquefaction and lateral spreading was considered negligible.[11]

(4) Landslides and Slope Stability. Slope failure can occur as either rapid movement of large masses of soil (landslide) or slow, continuous movement (creep). The primary factors influencing the stability of a slope are: 1) the nature of the underlying soil or bedrock; 2) the geometry of the slope (height and steepness); 3) rainfall; and 4) the presence of previous landslide deposits.

[11] Youngdhal Consulting Group, 2011a, op cit.

The site geotechnical investigation noted adequate vegetation on existing native slopes and appropriate drainage away from the slope face at the project site. No apparent tension cracks, slump blocks, or other indications of slope instability such as seeps or springs were identified on slope faces or at the head of slopes during the site reconnaissance.[12] Therefore, the geotechnical investigation indicated that the risk of slope instability for existing native slopes was negligible.[13]

(5) Unstable Soils, Settlement and Differential Settlement. Differential settlement or ground subsidence may occur if buildings or other improvements are built on low-strength foundation materials (including imported non-engineered fill) or if improvements straddle the boundary between different types of subsurface materials. The site geotechnical investigation concludes that native soils, rock, and fill materials, if processed and compacted in accordance with recommendations, would not be unstable or result in unacceptable amounts of differential settlement. [14]

(6) Expansive Soils. Expansion and contraction of soil volume can occur when expansive soils undergo alternating cycles of wetting (swelling) and drying (shrinking). During these cycles, the volume of the soil changes markedly. As a consequence of such volume changes, structural damage to buildings and infrastructure may occur if the potentially expansive soils are not considered in project design and during construction.

The sandy and silty native soils and fill materials encountered in the geotechnical investigation were classified as having no or low plasticity, indicating that they are non-expansive. No expansive soils were identified in the site geotechnical investigation. [15]

(7) Soil Corrosivity. Certain types of soils can be corrosive to steel, concrete, and other building materials that are in direct contact with them. To evaluate soil corrosivity at the project site, the site geotechnical report analyzed three soil samples for pH, resistivity, chloride, and sulfate. In accordance with CalTrans Corrosion guidance, the soil samples were determined to be representative of a non-corrosive environment.[16]

d. Regulatory Setting. The following discussion includes a description of the regulatory context for geologic and seismic issues as they relate to development projects.

(1) California Building Code. The 2010 California Building Code (CBC), which refers to Part 2 of the California Building Standards Code in Title 24 of the California Code of Regulations, is based on the 2009 International Building Code, and is the most current State building code. The 2010 CBC covers grading and other geotechnical issues, building specifications, and non-building structures. El Dorado County adopted the 2010 California Building Code for all building projects that have an application date of January 1, 2011 or later.

[12] Ibid.

[13] Ibid.

[14] Ibid.

[15] Ibid.

[16] Ibid.

(2) Alquist-Priolo Earthquake Fault Zoning Act (A-PEFZA). Surface rupture is the most easily avoided seismic hazard. The A-PEFZA was passed in December 1972 to mitigate the hazard of surface faulting to structures used for human occupancy. The A-PEFZA's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The A-PEFZA only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards (the Seismic Hazards Mapping Act, passed in 1990, addresses non-surface fault rupture earthquake hazards, including liquefaction and seismically induced landslides). The law requires the State Geologist to establish regulatory zones, known as Earthquake Fault Zones, around the surface traces of active faults and to issue appropriate maps. The maps are distributed to all affected cities, counties, and State agencies for use in planning and controlling new or renewed construction. Local agencies must regulate most development projects within the zones. Projects include all land divisions and most structures for human occupancy. Before a project can be permitted, cities and counties must require a geologic investigation to demonstrate that proposed buildings will not be constructed across active faults. The evaluation and written report of a specific site must be prepared by a licensed geologist. If an active fault is found, a structure for human occupancy cannot be placed over the trace of the fault and must be set back 50 feet from the fault trace. The project site is not located within an A-PEFZA.

(3) Seismic Hazards Mapping Act (SHMA). In 1990, following the Loma Prieta earthquake, the California Legislature enacted the SHMA to protect the public from the effects of strong ground shaking, liquefaction, landslides, and other seismic hazards. The SHMA established a Statewide mapping program to identify areas subject to violent shaking and ground failure; the program is intended to assist cities and counties in protecting public health and safety. The SHMA requires the State Geologist to delineate various seismic hazard zones and requires cities, counties, and other local permitting agencies to regulate certain development projects within these zones. As a result, the CGS is mapping SHMA Zones and has completed seismic hazard mapping for the portions of California most susceptible to liquefaction, ground shaking, and landslides, primarily within the San Francisco Bay area and Los Angeles basin. Before a development permit is granted for a site within a seismic hazard zone, a geotechnical investigation of the site must be conducted and appropriate mitigation measures incorporated into the project design. As of September 2013, El Dorado County had not yet been mapped under the SHMA program.

(4) Local Policies. Local policies in the El Dorado County General Plan and the County Code will apply to the project.

El Dorado County General Plan. The El Dorado County General Plan[17] was adopted in 2004. It provides basic planning strategies for development and land use in the County. The Public Health, Safety, and Noise Element of the El Dorado County General Plan presents safety goals and policies to address fire hazards, seismic hazards, flood hazards, noise, hazardous materials, air quality, airport safety, and highway safety. The Public Health, Safety, and Noise Element was updated in 2009. This subsection presents the safety goals, safety policies, and implementation programs for geologic hazards that would apply to the proposed project.

Public Health and Safety Element

[17] El Dorado County, 2004. *El Dorado County General Plan.* July.

- Goal 6.3: Geologic and Seismic Hazards. Minimize the threat to life and property from seismic and geologic hazards.
- Policy 6.3.1.1: The County shall require that all discretionary projects and all projects requiring a grading permit, or a building permit that would result in earth disturbance, that are located in areas likely to contain naturally occurring asbestos (based on mapping developed by the California Department of Conservation [DOC]) have a California-registered geologist knowledgeable about asbestos-containing formations inspect the project area for the presence of asbestos using appropriate test methods. The County shall amend the Erosion and Sediment Control Ordinance to include a section that addresses the reduction of thresholds to an appropriate level for grading permits in areas likely to contain naturally occurring asbestos (based on mapping developed by the DOC). The Department of Transportation and the County Air Quality Management District shall consider the requirement of posting a warning sign at the work site in areas likely to contain naturally occurring asbestos based on the mapping developed by the DOC.
- Policy 6.3.2.1: The County shall maintain updated geologic, seismic and avalanche hazard maps, and other hazard inventory information in cooperation with the State Office of Emergency Services, California Department of Conservation--Division of Mines and Geology, U.S. Forest Service, Caltrans, Tahoe Regional Planning Agency, and other agencies as this information is made available. This information shall be incorporated into the El Dorado County Operational Area Multi-Hazard Functional Emergency Operations Plans.
- Measure HS-C: Develop a program to collect, maintain, and update geological, seismic, avalanche, and other geological hazard information.
- Policy 6.3.2.5: Applications for development of habitable structures shall be reviewed for potential hazards associated with steep or unstable slopes, areas susceptible to high erosion, and avalanche risk. Geotechnical studies shall be required when development may be subject to geological hazards. If hazards are identified, applicants shall be required to mitigate or avoid identified hazards as a condition of approval. If no mitigation is feasible, the project will not be approved.
- Measure HS-D: Develop and adopt standards to protect against seismic and geologic hazards.
- Measure HS-G: Adopt California Building Code revisions.

El Dorado County Code. Chapter 15.14 of the County Code covers grading and requires grading and drainage plans to be developed for major development projects. Volume III of the County Design and Improvement Standards Manual, Grading, Erosion, and Sediment Control (Grading Manual), implements those standards.

The grading plan must be prepared by a California professional civil engineer and must contain a detailed erosion and sediment control plan. The plan must be designed to prevent increased discharge of sediment at all stages of grading and development from initial disturbance of the ground to project completion and shall be consistent with all local, state, and federal rules and regulations. It must include an effective revegetation program to stabilize all disturbed areas which will not be otherwise protected.

The Grading Manual includes standards for Geotechnical, Geologic, Drainage, and Soil studies that are required for development projects.

2. Impacts and Mitigation Measures

The analysis of the impacts related to geology, soils, and seismicity that could result from implementation of the proposed project is presented below. This section begins with criteria of significance, which establish the thresholds for determining whether a project impact is significant. Mitigation measures are provided so as to reduce significant impacts to a less-than- significant level.

a. Criteria of Significance. The project would have a significant geology, soils, or seismicity impact if it would:

- Expose people or structures to substantial risk of loss, injury, or death involving:
  - Rupture of a known active or potentially active earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area, or based on other substantial evidence of a known fault;
  - Strong seismic ground shaking;
  - Seismic-related ground failure, including liquefaction; and
  - Landslides;
- Result in substantial soil erosion or loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in an on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse;
- Be located on expansive soil, as defined in Section 1803.5 of the 2010 California Building Code, creating substantial risks to life or property; or
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater.

b. Project Impacts. The following discussion describes potential impacts related to geology, seismicity, and soils that would result from implementation of the proposed project.

(1) Seismic Impacts. The project site is located in an area of relatively low seismicity, with no active or potentially active faults mapped at the site. Fault rupture would therefore not be a potential impact. Implementation of the California Building Code and other County requirements would reduce other seismic impacts, related to ground shaking, liquefaction, and seismic-related landslides, to a less-than-significant level.

(2) Soil Erosion or Loss of Topsoil. Development of the proposed project will require a significant amount of soil disturbance. Preliminary grading plans indicate that 570,000 cubic yards of soil will be excavated and used as fill in other portions of the project site. However, Chapter 15.14 of the County Code includes County requirements for a grading permit, which includes preparation and implementation of a detailed erosion and sediment control plan. The plan must be designed to prevent increased discharge of sediment at all stages of construction from initial ground disturbance to project completion. Adherence to existing requirements would reduce impacts from soil erosion to a less-than-significant level.

Other measures will be required during construction to prevent soil and sediment from being entrained in stormwater runoff, potentially affecting nearby surface water bodies. These measures are discussed in Mitigation Measure HYD-1 in Section IV.J, Hydrology and Water Quality. No additional mitigation to address soil erosion impacts is required.

(3) Seismic Hazards and Soil Stability. Development of the proposed project could result in one significant impact related to seismic hazards and soil stability, as discussed below.

Although the preliminary site geotechnical investigation indicated that site soils would support development of the proposed project, it noted potential geotechnical concerns related to loose surface soils throughout the project site and excessive seepage and the potential for moisture related issues at and near drainage channels and valleys. The report also noted that due to the non-uniform nature of the soils, additional geotechnical issues may become apparent during grading of the project site. These geotechnical concerns could affect residences, detention ponds, and other infrastructure constructed as part of the project. The preliminary detailed geotechnical report provided detailed recommendations for addressing these potential issues, which are incorporated in the mitigation measure below.

Impact GEO-1: In the absence of proper design, project occupants may potentially be subject to geotechnical hazards including landslide, lateral spreading, subsidence, or collapse. (S)

Mitigation Measure GEO-1a: Prior to the issuance of any site-specific grading or building permits, a design-level geotechnical plan review shall be prepared by a licensed professional, in compliance with County guidelines, and submitted to the County for review and approval. The plan review shall include a finding that the proposed development incorporates all recommendations of the preliminary geotechnical investigation for the project and fully complies with the CBC as well as federal, state, and County requirements. All recommendations, design criteria, and specifications set forth in the preliminary geotechnical investigation and design-level geotechnical plan review shall be implemented.

Mitigation Measure GEO-1b: As a condition of approval for grading permits, a qualified and licensed professional, or his/her representative, shall be required to be present as a construction monitor during clearing and grading of the project site to observe the stripping of deleterious material, over-excavation of existing fills, and to provide consultation as required to the grading contractor(s) in the event that previously undiscovered geotechnical issues are discovered during clearing and grading operations.

Implementation of this two-part mitigation measure will reduce this impact to a less-than-significant level. (LTS)

(4) Expansive Soils. The preliminary geotechnical investigation determined that project site soils consist of sandy silt with no or low plasticity. No expansive soils were identified at the project site, so no impact related to expansive soils would result from the project..

(5) Septic Tanks and Alternative Wastewater Disposal Systems. Sewer service would be provided to the project site by the El Dorado Irrigation District (EID). The project includes construction of an on-site lift station and implementation of one of three potential off-site sewer

system improvement plans. While there is one residential dwelling unit on the project site that uses a septic tank and would continue to use it after construction of the project, no additional septic tanks or alternative wastewater disposal systems are proposed. Therefore, no impact related to septic tanks or alternative wastewater disposal systems would result from the project.

c. Cumulative Impacts. Impacts related to geologic hazards are generally site specific, rather than cumulative in nature, because each project area has unique geologic considerations that would be subject to uniform site development and construction standards. Therefore, the potential for cumulative impacts is limited. Impacts associated with potential geologic hazards related to soil or other conditions occur at individual building sites. These effects are site-specific, and impacts would not be compounded by additional development. Mitigation measures described above would reduce impacts from geologic hazards to a less than significant level. Therefore, implementation of the project, in combination with other past, present, and reasonably probable future projects, would not result in a significant cumulative contribution to geologic hazards. The cumulative impact, therefore, would be less than significant.

J. HYDROLOGY AND WATER QUALITY

This section describes the existing hydrology setting for the project site, including runoff, drainage, and water quality characteristics, based on available information provided as part of the project application and published reports. Data gathered as part of a site reconnaissance conducted in September 2013 was also used to prepare this section. Impacts that could result from the proposed project, and mitigation measures to reduce significant impacts, are identified where appropriate.

1. Setting

The project site's existing conditions related to hydrology and water quality are described below.

a. Climate. The climate of the El Dorado Hills area is Mediterranean, with cool wet winters and warm dry summers. The approximate annualized average high temperature in the vicinity of the project site is 70º Fahrenheit (F); the average low is 50º F.[1] The mean annual precipitation in the vicinity of the project site, for the period between 1893 and 2012, is approximately 23 inches, the majority of which occurs from October through April.[2] During the period of record, annual precipitation has varied from 8 inches (1976) to 47 inches (1983), with a one-day high of 6 inches of precipitation on February 25, 2007.[3] An annual average of approximately 0.3 inches of precipitation occurs as snowfall.[4]

b. Runoff and Drainage. Ground surface elevation at the project site ranges from approximately 1,235 feet above the North American Vertical Datum of 1988 (NAVD) in the southeast to 960 feet NAVD in the northwest.[5] The southeast and center portions of project site are relatively flat with the western portion sloping gently to the west and the northern portion sloping gently to the north. Approximately 52 percent of the site has a 0 to 10 percent slope, 37 percent has a 10 to 20 percent slope, 8 percent has a 20 to 30 percent slope, and 2 percent has a slope greater than 30 percent, as detailed in Chapter III, Project Description. The project site is dominated by grasslands and scattered oak trees, and is undeveloped with the exception of two residential structures and associated storage/ accessory structures located near Green Valley Road and Verde Valle Lane. Structures related to cattle ranching such as gates, fences, and feed areas are present throughout the project site. There is no drainage infrastructure developed on the project site.

The project site is part of the Green Spring Creek watershed.[6] Green Spring Creek flows across the northern portion of the project site, roughly parallel and adjacent to Old Green Valley Road. The creek flows through two relatively small ponds with a total area of approximately 3.8032 acres.[7] The

[1] Western Regional Climate Center, 2012a. *Period of Record General Climate Summary - Temperature, Represa, CA*. Website: www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7370 (accessed July 3, 2013).

[2] Western Regional Climate Center, 2012b. *Period of Record General Climate Summary - Precipitation, Represa, CA*. Website:www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca7370 (accessed July 3, 2013).

[3] Ibid.

[4] Ibid.

[5] U.S. Geological Survey, 2012. Clarksville Quadrangle, California, 7.5-Minute Series.

[6] CTA Engineering and Surveying, 2013. *Drainage Study for Dixon Ranch, El Dorado Hills, CA*. March.

[7] Gibson & Skordal , 2012. *Jurisdictional Delineation and Special-Status Species Evaluation*, May.

ponds are located on either side of an earthen embankment with a small bridge that provides site access and a flashboard riser that serves as the upper pond spillway. The earthen embankment impounds the creek, forming the upper pond, and the creek then flows through the spillway into the lower pond. Green Spring Creek flows into Allegheny Creek approximately 1 mile west of the project site. Allegheny Creek converges with New York Creek approximately 0.5 miles further downstream. New York Creek then flows into Folsom Lake approximately 1 mile north of this convergence.

c. Flooding. The project site is not located within a 100-year flood hazard area as mapped by the Federal Emergency Management Agency (FEMA).[8] In addition, the project site is not located within an area subject to inundation related to dam failure.[9]

d. Coastal Hazards. Due to the location and elevation of the project site, approximately 125 miles east of the Pacific Ocean and at a minimum elevation of 960 feet NAVD, the proposed project would be not subject to inundation as a result of tsunami, sea level rise, or extreme high tides. In addition, the project site is located 2.5 miles east of Folsom Lake and 1.5 miles northwest of Bass Lake.[10] At these distances, the project site would not be subject to inundation by a seiche (an oscillation of a body of water that occurs most frequently in enclosed or semi-enclosed basins such as lakes, bays, or harbors).

e. Groundwater. The project site is not located within an identified regionally significant groundwater basin.[11] The site consists of native soil and fills underlain by fractured metasedimentary bedrock.[12] A geotechnical investigation prepared for the project site noted that bedrock was encountered at depths ranging from 1 to 4 feet below ground surface in excavation pits located throughout the project site.[13] Groundwater was encountered at depths of 1 to 4 feet below ground surface in four test pits located in the southern portion of the project site, but was not identified in any of the other test pits to the depth of exploration, which ranged from 4 to 7 feet bgs. Groundwater conditions in the foothills are highly variable spatially and temporally.[14] At different times of year, groundwater can be perched on less fractured bedrock and/or stored in the bedrock fractures.[15] Most fractures are located in the upper few hundred feet of bedrock, and fracture width tends to decrease with depth.[16] Fractured bedrock aquifers tend to have a much lower capacity to transmit water than

[8] Federal Emergency Management Agency, 2009. *Flood Insurance Rate Map (FIRM), Community-Panel Number 06017C0725E, El Dorado County Unincorporated and Incorporated Areas*. September 26, 2008.

[9] El Dorado County, 2004a. *El Dorado County General Plan, Appendix A, Dam Failure Inundation Zone Maps*. Website: www.edcgov.us/Government/Planning/Adopted_General_Plan.aspx. July 19.

[10] U.S. Geological Survey, 2012, op. cit.

[11] California Department of Water Resources, 2003. *Groundwater Basins of California*. October. Website: www.water.ca.gov/groundwater/bulletin118/gwbasin_maps_descriptions.cfm.

[12] Youngdahl Consulting Group, 2011. *Preliminary Geotechnical Engineering Study for Dixon Ranch Subdivision*. April.

[13] Ibid.

[14] Ibid.

[15] California Department of Water Resources, 1991. *Water Facts: Groundwater in Fractured Hard Rock*. April.

[16] Ibid.

aquifers composed of unconsolidated medium to coarse-grained sediments.[17] The amount of water that can be obtained from a well in an area underlain by fractured bedrock depends on the size and location of the factures and their interconnection.[18] Additionally, a lower percentage of precipitation over a fractured bedrock aquifer enters the groundwater system, which limits the ability of the groundwater in the bedrock to recharge.[19] Because fractures in bedrock are often interconnected, the installation and operation of new wells into a fractured bedrock aquifer can affect groundwater levels in the vicinity and potentially affect the production in nearby wells.[20] There are three known groundwater wells located on the project site. Two of these wells are located in the northwest portion of the project site and one well is located in the southeast corner of the project site.

f. Water Quality. The quality of surface water and groundwater at the project site is affected by past and current land uses in the vicinity of the site and by the composition of local geologic materials. Water quality in surface and groundwater bodies is regulated by the State Water Resources Control Board and Regional Water Quality Control Boards. The project site is under the jurisdiction of the Central Valley Regional Water Quality Control Board (Water Board), which is responsible for implementation of State and federal water quality protection statutes, regulations, and policies in the vicinity of the project site.

The Water Board implements the Water Quality Control Plan (Basin Plan) for the Sacramento and San Joaquin River Basins, a master policy document for managing water quality in the region.[21] The Basin Plan establishes beneficial water uses for waterways and water bodies within the region. At its closest, Folsom Lake is located approximately 2.5 miles west of the project site and is listed as providing the beneficial uses of municipal and domestic supply, irrigation supply, service and power supply, water contact and non-contact recreation, warm and cold freshwater habitat, and wildlife habitat. Folsom Lake is the only water body in the vicinity of the project site that is listed on the 2006 Clean Water Act 303(d) list of impaired water bodies.[22] It is listed as impaired for mercury with the potential source of this pollutant identified as "resource extraction".[23]

g. Regulatory Framework. The following local, state, federal regulations are applicable to the proposed project.

(1) Phase II Small MS4 General Permit. Pursuant to Section 402 of the Clean Water Act (CWA) and the Porter-Cologne Water Quality Control Act, municipal stormwater discharges in El Dorado County are regulated under the State Water Resources Control Board Water Quality Order

[17] Ibid.

[18] Ibid.

[19] Robinson Noble, Inc., 2004. *Fracture-Rock Wells in the Pacific Northwest Foothills: Not Your Average Water Source*. Website: www.robinson-noble.com/publications/white-papers/fractured-rock-aquifers (accessed July 5, 2013).

[20] Ibid.

[21] Central Valley Regional Water Quality Control Board, 1994 as appended through 2011. *Water Quality Control Plan*. Website: www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/index.shtml (accessed July 5, 2013).

[22] United States Environmental Protection Agency (EPA), 2011. 2010 Integrated Report (Clean Water Act Section 303(d) List. Website: www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml (accessed July 5, 2013).

[23] Ibid.

No. 2013-0001-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000004, Waste Discharge Requirements (WDRs) for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (MS4s), adopted February 5, 2013 (Phase II General Permit).

The Phase II General Permit went into effect on July 1, 2013 and replaces the previous Phase II General Permit (Water Quality Order No. 2003-0005-DWQ, General Permit No. CAS000004), which had been in effect since April 30, 2003. Both the current and previous Phase II General Permits require permittees to develop a Construction Site Storm Water Runoff Control Program and a Post Construction Storm Water Management Program. The previous Phase II General Permit required permittees, including El Dorado County, to implement these programs through a Storm Water Management Plan (SWMP), and permittees are instructed to implement the programs established in their SWMP until the development of corresponding programs that comply with the current Phase II General Permit.

The current Phase II General Permit states that projects whose applications are deemed "complete" prior to June 30, 2015, would not be subject to the new Post Construction Storm Water Management Program requirements. The proposed project was deemed complete on April 23, 2013, and is therefore subject only to the existing post-construction program set forth in the Western El Dorado County SWMP.[24] Both the previous and current Phase II General Permits require the implementation of Best Management Practices (BMPs) to reduce pollutants in stormwater to the Maximum Extent Practicable (MEP).

(2) State Water Board Low Impact Development Policy. On January 20, 2005, the State Water Resources Control Board adopted the Low Impact Development (LID) Policy, which, at its core, promotes the idea of "sustainability" as a key parameter to be considered during the design and planning process for future development. The sustainability practice promotes LID to benefit water supply and contribute to water quality protection. LID has been a proven approach in other parts of the country and is seen in California as an alternative to conventional stormwater management. It is necessary to incorporate LID into the design of proposed projects in order to meet the MEP standard of the Phase II General Permits. Examples of LID practices include:

Reducing Impervious Area

- Reduction of street width to the minimum necessary, while ensuring emergency vehicle access and traffic flow.
- Reduction of parking footprints by keeping spaces to the minimum required and encouraging transit.
- Elimination of unnecessary sidewalks and driveways.

Development Siting and Layout

- Fitting the design to existing drainage patterns to maximize benefits of the existing terrain.
- Clustering development to maximize contiguous open space.

[24] El Dorado County, 2004. *Western El Dorado County Storm Water Management Plan*. Proposed Final August.

Using Natural Drainage Systems

- Disconnecting impervious areas from the storm drainage system and using vegetation, soil amendment, and deep tiling to increase infiltration.
- Minimizing grading to preserve natural small dips, hummocks, and mounds in undisturbed areas.
- Using swales and other landscaping to reduce runoff velocity.

(3) Construction General Permit and Storm Water Pollution Prevention Plan. Projects disturbing more than 1 acre of land during construction are to comply with the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order No. 2009-0009-DWQ, NPDES No. CAS000002 (Construction General Permit).

To obtain coverage under the Construction General Permit, the project applicant must provide via electronic submittal, a Notice of Intent, a Storm Water Pollution Prevention Plan (SWPPP), and other documents required by Attachment B of the Construction General Permit. Activities subject to the Construction General Permit include clearing, grading, and disturbances to the ground, such as grubbing or excavation. The permit also covers linear underground and overhead projects such as pipeline installations. Construction General Permit activities are regulated at a local level by the Water Board.

The Construction General Permit uses a risk-based permitting approach and mandates certain requirements based on the project risk level (i.e., Level 1, Level 2, or Level 3). The project risk level is based on the risk of sediment discharge and the receiving water risk. The sediment discharge risk depends on the project location and timing (i.e., wet season versus dry season activities). The receiving water risk depends on whether the project would discharge to a sediment-sensitive receiving water. The determination of the project's risk level would be made by the project applicant when the Notice of Intent is filed.

The performance standard in the Construction General Permit is that dischargers shall minimize or prevent pollutants in stormwater discharges and authorized non-stormwater discharges through the use of controls, structures, and management practices that achieve Best Available Technology (BAT) for treatment of toxic and non-conventional pollutants and Best Conventional Technology (BCT) for treatment of conventional pollutants. A SWPPP must be prepared by a Qualified SWPPP Developer that meets the certification requirements in the Construction General Permit. The purpose of the SWPPP is: (1) to help identify the sources of sediment and other pollutants that could affect the quality of stormwater discharges; and (2) to describe and ensure the implementation of BMPs to reduce or eliminate sediment and other pollutants in stormwater as well as non-stormwater discharges resulting from construction activity. Operation of BMPs must be overseen by a Qualified SWPPP Practitioner that meets the requirements outlined in the permit.

The SWPPP must also include a construction site monitoring program. The monitoring program includes, depending on the project risk level, visual observations of site discharges, water quality monitoring of site discharges (pH, turbidity, and non-visible pollutants), and receiving water monitoring (pH, turbidity, suspended sediment concentration, and bioassessment).

(4) El Dorado County Ordinance Code. The purpose of the Grading, Erosion and Sediment Control Ordinance (Chapter 15.14)[25] is to regulate grading within the unincorporated areas of El Dorado County, to prevent the pollution of surface water, and to ensure that the intended use of the site is consistent with all applicable local and state plans and standards, including the El Dorado County General Plan, SWMP, California Fire Safe Standards, and El Dorado County ordinances. This ordinance also establishes the procedures for the issuance of permits, approval of plans, and inspection of construction sites. The Grading, Erosion and Sediment Control Ordinance requires that waterways and adjacent properties be protected from erosion, flooding, or sediment deposits that could result from grading activities. It also states that the discharge of sediments to any waterway, drainage system, or adjacent property remain at or below levels prior to grading activities.

The Flood Damage and Prevention Ordinance (Chapter 17.25)[26] does not apply to this project because the project area is not located in a floodplain or flood prone area, as discussed in Section 1.c above. Chapter 17.22.210 of the Zoning Ordinance[27] establishes the County's authority to impose conditions of approval (COA) on a proposed project in order to ensure that the project is consistent with all applicable standards and regulations, or in order to mitigate any potential impacts created by the proposed project. El Dorado County has provided the following standard conditions of approval related to stormwater drainage and infrastructure that may apply to the proposed project.[28]

- **Water Quality Stamp**: All new or reconstructed drainage inlets shall have a stormwater quality message stamped into the concrete, conforming to the Storm Water Quality Design Manual for the Sacramento and South Placer Regions, Chapter 4, Fact Sheet SD-1. All stamps shall be approved by the El Dorado County inspector prior to being used.
- **Grading Permit/Plan**: A residential grading permit is required for the project. The applicant shall submit a site improvement/grading plan prepared by a professional civil engineer to the El Dorado County Community Development Agency Transportation Division for review and approval. The plan shall be in conformance with the County of El Dorado "Design and Improvement Standards Manual," the "Grading, Erosion and Sediment Control Ordinance," the "Drainage Manual," the "Off-Street Parking and Loading Ordinance," and the State of California Handicapped Accessibility Standards, as applicable. All applicable plan check fees shall be paid at the time of submittal of improvement plans. All applicable inspection fees shall be paid prior to issuance of a permit. The improvements and grading shall be completed to the satisfaction of the Transportation Division or the applicant shall obtain an approved improvement agreement with security, prior to the filing of the final map.
- **Grading Plan Review**: Grading and improvement plans shall be prepared and submitted to the El Dorado County Resource Conservation District (RCD) and the Transportation Division. The RCD shall review and make appropriate recommendations to the County.

[25] El Dorado County, 2010a. Code of Ordinances. Chapter 15. Website: library.municode.com/index.aspx?clientId=15095 (accessed July 12, 2013). October 19.

[26] El Dorado County, 2010b. Code of Ordinances. Chapter 17. Website: library.municode.com/index.aspx?clientId=15095 (accessed July 12, 2013). October 19.

[27] Ibid.

[28] Crawford, Eileen, 2013a. Senior Civil Engineer. El Dorado County. Personal communication with BASELINE Environmental Consulting. August 7.

Upon receipt of the review report by the RCD, the Transportation Division shall consider imposition of appropriate conditions for reducing or mitigating erosion and sedimentation from the project. Grading plans shall incorporate appropriate erosion control measures as provided in the El Dorado County Grading Ordinance and El Dorado County Storm Water Management Plan. Appropriate runoff controls such as berms, storm gates, detention basins, overflow collection areas, filtration systems, and sediment traps shall be implemented to control siltation, and the potential discharge of pollutants into drainages.

- **RCD Coordination**: The timing of construction and method of revegetation shall be coordinated with the El Dorado County Resource Conservation District (RCD). If grading activities are not completed by September, the developer shall implement a temporary grading and erosion control plan. Such temporary plans shall be submitted to the RCD for review and recommendation to the El Dorado County Transportation Division. The El Dorado County Transportation Division shall approve or conditionally approve such plans and cause the developer to implement said plan on or before October 15.
- **Soils Report**: At the time of the submittal of the grading or improvement plans, the applicant shall submit a soils and geologic hazards report (meeting the requirements for such reports provided in the El Dorado County Grading Ordinance) to, and receive approval from the El Dorado County Transportation Division. Grading design plans shall incorporate the findings of detailed geologic and geotechnical investigations and address, at a minimum, grading practices, compaction, slope stability of existing and proposed cuts and fills, erosion potential, ground water, pavement section based on TI and R values, and recommended design criteria for any retaining walls.
- **Drainage Study/SWMP Compliance**: The applicant shall provide a drainage report at time of improvement plans or grading permit application, consistent with the Drainage Manual and the Storm Water Management Plan, which addresses stormwater runoff increase, impacts to downstream facilities and properties, and identification of appropriate stormwater quality management practices to the satisfaction of the Transportation Division.

  The Drainage Study must demonstrate the subject property has adequate existing and proposed storm drainage facilities. At a minimum, the drainage study, plans, and calculations shall include the following:

  - The site can be adequately drained;
  - The development of the site will not cause problems to nearby properties, particularly downstream sites;
  - The on-site drainage will be controlled in such a manner as to not increase the downstream peak flow more than the pre-development 10-year storm event or cause a hazard or public nuisance. Detention shall be required if said condition is not met or the applicant shall demonstrate that there are no downstream impacts.
  - The ultimate drainage outfall of the project.

  Pursuant to Section 1.8.3 of the Drainage Manual, the report shall be prepared by a Civil Engineer who is registered in the State of California. A Scoping Meeting for the required drainage study between County staff and the engineer shall occur prior to the first submittal of improvement plans. The engineer shall bring a watershed map and any other existing drainage system information to the Scoping Meeting. The improvements shall be completed

to the approval of the Transportation Division, prior to the filing of the final map or the applicant shall obtain an approved improvement agreement with security.

- **Drainage (Cross-Lot)**: Cross lot drainage should be avoided. When concentrated cross lot drainage does occur or when the natural sheet flow drainage is increased by the project, it should be contained within dedicated drainage easements, and included in the County Service Area Zone of Benefit (ZOB), Home Owners Association, or other entity acceptable to the County. Any variations shall be approved by the County Engineer. This drainage shall be conveyed via closed conduit or v-ditch, to either a natural drainage course of adequate size or an appropriately sized storm drain system. The site plans shall show drainage easements for all on-site drainage facilities. Drainage easements shall be provided where deemed necessary prior to the filing of the final map.
- **NPDES Permit**: At the time that an application is submitted for improvement plans or a grading permit, and if the proposed project disturbs more than one acre of land area (43,560 square feet), the applicant shall file a "Notice of Intent" (NOI) to comply with the Statewide General NPDES Permit for stormwater discharges associated with construction activity with the State Water Resources Control Board (SWRCB). This condition is mandated by the Federal Clean Water Act and the California Water Code. A filing form, a filing fee, a location map, and a Storm Water Pollution Prevention Plan (SWPPP) are required for this filing. A copy of the Application shall be submitted to the County, prior to building permit issuance, and by state law must be done prior to commencing construction.
- **Storm Water Drainage BMPs**: Storm drainage from on-and off-site impervious surfaces (including roads) shall be collected and routed through specially designed water quality treatment facilities (BMPs) for removal of pollutants of concern (e.g. sediment, oil/grease, etc.), as approved by the Transportation Division. This project is located within the area covered by El Dorado County's municipal stormwater quality permit, pursuant to the National Pollutant Discharge Eliminated System (NPDES) Phase II program. Project related stormwater discharges are subject to all applicable requirements of said permit. BMPs shall be designed to mitigate (minimize, infiltrate, filter, or treat, depending on site conditions) stormwater runoff in accordance with "Attachment 4' of El Dorado County's NPDES Municipal Storm Water Permit (State Water Resources Control Board NPDES General Permit No. CAS000004).

  With the Improvement Plans, the applicant shall verify that the proposed BMPs are appropriate to treat the pollutants of concern from this project. A maintenance entity of these facilities shall be provided by the project applicant. The Transportation Division shall review the document forming the entity to ensure the provisions are adequate prior to filing of the final map.

(5) Design and Improvement Standards Manual. The purpose of the Design and Improvement Standards Manual is to standardize development practices used in the hillside environment that is prevalent in El Dorado County and to minimize the environmental effects of construction.[29] Volume II of the manual includes drainage and design criteria for stormwater and Volume III

[29] El Dorado County, 1986. *Design and Improvement Standards Manual*. Website: www.edcgov.us/Government/DOT/Manuals.aspx?terms=county%20of%20el%20dorado%20drainage%20manual. Revised May 18, 1990.

of the manual[30] provides guidance on how to implement the erosion and sediment control standards in Chapter 15.14 of the El Dorado County Code of Ordinances.

(6) Drainage Manual. The El Dorado County Drainage Manual establishes guidelines for the design of stormwater drainage facilities and the performance of hydraulic and hydrologic analyses.[31] This manual is designed to supplement El Dorado County ordinances and the provisions defined in the Design and Improvement Standards Manual. For example, the Drainage Manual requires that potential downstream impacts to water quality and flow regimes be taken into account when designing stormwater drainage systems and that mitigation measures be included as part of drainage analyses. Drainage facilities for areas larger than 100-acres are required to accommodate runoff from a 100-year storm.

(7) Western El Dorado County Storm Water Management Plan (SWMP).[32] The purpose of the Construction Site Runoff Control Program of the SWMP is to control the discharge of pollutants from all construction sites greater than or equal to 1 acre. The SWMP requires full compliance with the Construction General Permit and El Dorado County's Grading, Erosion and Sediment Control Ordinance, Design and Improvement Standards Manual, and Drainage Manual. The Construction Site Runoff Control Program also describes the typical construction site practices expected to be implemented for common construction activities, as well as the minimum construction site practices required to protect water quality. The minimum measures include scheduling, preservation of existing vegetation, stockpile management, non-stormwater management, and disturbed soil area management.

The purpose of the Post Construction Runoff Control Program of the SWMP is to protect water quality and control runoff from all development or redevelopment projects greater than or equal to 1 acre during the operation period of the developments. This is achieved through the construction, implementation, and long-term operation and maintenance of BMPs. The SWMP requires full compliance with El Dorado County's Grading, Erosion and Sediment Control Ordinance, Design and Improvement Standards Manual, and Drainage Manual. The SWMP states that a site specific Storm Water Mitigation Report (SWMR) documenting permanent stormwater quality mitigation measures must be developed during the planning/design stage of a proposed project; however, for practical purposes, the documentation of these measures is included in the project drainage study, rather than in the SWMR.[33,34]

(8) El Dorado County General Plan. The following goals, objectives, and policies from the El Dorado County General Plan related to hydrology and water quality pertain to the proposed project.

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[30] El Dorado County, 2007. *Design and Improvement Standards Manual*. Volume III: Grading Erosion and Sediment Control. May 5. Website: www.edcgov.us/Government/DOT/Manuals.aspx?terms=county%20of%20el%20dorado%20drainage%20manual.

[31] El Dorado County, 1995. County of El Dorado Drainage Manual. Resolution No.:67-95. Website: www.edcgov.us/Government/DOT/Manuals.aspx?terms=county%20of%20el%20dorado%20drainage%20manual. March 14.

[32] El Dorado County, 2004, op. cit.

[33] El Dorado County, 1995, op. cit.

[34] Crawford, Eileen, 2013b. Senior Civil Engineer. El Dorado County. Personal communication with BASELINE Environmental Consulting. September 6.

Conservation and Open Space Element[35]

- *Goal 7.3: Water Quality and Quantity*. Conserve, enhance, and manage water resources and protect their quality from degradation.
- *Objective 7.3.1 Water Resources Protection*. Preserve and protect the supply and quality of the County's water resources including the protection of critical watersheds, riparian zones, and aquifers.
- Policy 7.3.1.1: Encourage the use of Best Management Practices, as identified by the Soil Conservation Service, in watershed lands as a means to prevent erosion, siltation, and flooding.
- Policy 7.3.1.2: Establish water conservation programs that include both drought tolerant landscaping and efficient building design requirements as well as incentives for the conservation and wise use of water.
- Policy 7.3.1.3: The County shall develop the criteria and draft an ordinance to allow and encourage the use of domestic gray water for landscape irrigation purposes. (See Title 22 of the State Water Code and the Graywater Regulations of the Uniform Plumbing Code).
- *Objective 7.3.2 Water Quality*. Maintenance of and, where possible, improvement of the quality of underground and surface water.
- Policy 7.3.2.1: Stream and lake embankments shall be protected from erosion, and streams and lakes shall be protected from excessive turbidity.
- Policy 7.3.2.2: Projects requiring a grading permit shall have an erosion control program approved, where necessary.
- Policy 7.3.2.3: Where practical and when warranted by the size of the project, parking lot storm drainage shall include facilities to separate oils and salts from stormwater in accordance with the recommendations of the Storm Water Quality Task Force's California Storm Water Best Management Practices Handbooks (1993).
- *Objective 7.3.3 Wetlands*. Protection of natural and man-made wetlands, vernal pools, wet meadows, and riparian areas from impacts related to development for their importance to wildlife habitat, water purification, scenic values, and unique and sensitive plant life.
- Policy 7.3.3.1: For projects that would result in the discharge of material to or that may affect the function and value of river, stream, lake, pond, or wetland features, the application shall include a delineation of all such features. For wetlands, the delineation shall be conducted using the U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual.
- Policy 7.3.3.4: The Zoning Ordinance shall be amended to provide buffers and special setbacks for the protection of riparian areas and wetlands. The County shall encourage the incorporation of protected areas into conservation easements or natural resource protection areas.

  Exceptions to riparian and wetland buffer and setback requirements shall be provided to permit necessary road and bridge repair and construction, trail construction, and other recreational access structures such as docks and piers, or where such buffers deny reasonable use of the property, but only when appropriate mitigation measures and Best Management Practices are incorporated into the project. Exceptions shall also be provided for horticultural and grazing activities on agriculturally

[35] El Dorado County, 2004c. *El Dorado County General Plan Conservation and Open Space Element*. Website: www.edcgov.us/Government/Planning/Adopted_General_Plan.aspx. Amended March 2009.

zoned lands that utilize "best management practices (BMPs)" as recommended by the County Agricultural Commission and adopted by the Board of Supervisors.

Until standards for buffers and special setbacks are established in the Zoning Ordinance, the County shall apply a minimum setback of 100 feet from all perennial streams, rivers, lakes, and 50 feet from intermittent streams and wetlands. These interim standards may be modified in a particular instance if more detailed information relating to slope, soil stability, vegetation, habitat, or other site- or project-specific conditions supplied as part of the review for a specific project demonstrates that a different setback is necessary or would be sufficient to protect the particular riparian area at issue.

For projects where the County allows an exception to wetland and riparian buffers, development in or immediately adjacent to such features shall be planned so that impacts on the resources are minimized. If avoidance and minimization are not feasible, the County shall make findings, based on documentation provided by the project proponent, that avoidance and minimization are infeasible.

- Policy 7.3.3.5: Rivers, streams, lakes and ponds, and wetlands shall be integrated into new development in such a way that they enhance the aesthetic and natural character of the site while disturbance to the resource is avoided or minimized and fragmentation is limited.
- *Objective 7.3.4 Drainage*. Protection and utilization of natural drainage patterns.
- Policy 7.3.4.1: Natural watercourses shall be integrated into new development in such a way that they enhance the aesthetic and natural character of the site without disturbance.
- Policy 7.3.4.2: Modification of natural streambeds and flow shall be regulated to ensure that adequate mitigation measures are utilized.
- *Objective 7.3.5 Water Conservation*. Conservation of water resources, encouragement of water conservation, and construction of wastewater disposal systems designed to reclaim and re-use treated wastewater on agricultural crops and for other irrigation and wildlife enhancement projects.
- Policy 7.3.5.2: Require efficient water conveyance systems in new construction. Establish a program of ongoing conversion of open ditch systems shall be considered for conversion to closed conduits, reclaimed water supplies, or both, as circumstances permit.

2. Impacts and Mitigation Measures

This section analyzes the impacts related to hydrology and water quality that could result from the development of the proposed project. The section begins with criteria of significance, which establish the thresholds for determining whether a project impact is significant. The latter part of this section presents the potential hydrology and water quality impacts associated with the proposed project. Mitigation measures are provided as appropriate and feasible.

a. Significance Criteria. The proposed project would have a significant effect on hydrology or water quality if it would:

- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map;
- Place within a 100-year flood hazard area structures, which would impede or redirect flood flows;
- Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam; or
- Expose people or structures to inundation by seiche, tsunami or mudflow.

- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site;
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;
- Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff;
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted);
- Violate any water quality standards or waste discharge requirements;
- Otherwise substantially degrade water quality;

b. Project Impacts. The following discussion describes the potential hydrology and water quality impacts that would result from implementation of the proposed project.

(1) Flood Hazard. The project site is not located within a 100-year flood hazard area[36] or an area susceptible to inundation related to dam failure.[37] Consequently, the proposed project does not expose people or structures to a substantial risk of loss, injury, or death involving flooding.

(2) Coastal Hazards. The project site is located at a minimum elevation of 960 feet NAVD, and the nearest lake (Bass) is located approximately 1.5 miles northwest of the project site. As a result, the proposed project would not expose people or structures to a substantial risk of inundation by seiche, tsunami, extreme high tides, and/or sea level rise.

(3) Runoff and Drainage. The development of the project site would involve the construction of new impervious surfaces, such as buildings and roadways, on predominantly undeveloped land. Although this would alter the drainage patterns, the drainage study for the proposed project demonstrates that the proposed project would not increase stormwater runoff that would exceed the capacity of existing or planned stormwater drainage systems or result in on- or off-site flooding.[38] The drainage study calculated the pre- and post- development peak flows of the 10-year and 100-year storms and was completed in conformance with the guidelines and procedures of the El Dorado County Drainage Manual. The results indicate that post-development peak flows would not exceed pre-development peak flows at 14 of the 15 discharge points on the project site. The single discharge point on the project site with increased post-development flows was estimated to increase flows 6

[36] Federal Emergency Management Agency, 2009. *Flood Insurance Rate Map (FIRM), Community-Panel Number 06017C0725E, El Dorado County Unincorporated and Incorporated Areas*. September 26, 2008.

[37] El Dorado County, 2004a. *El Dorado County General Plan, Appendix A, Dam Failure Inundation Zone Maps*. July 19. Website: www.edcgov.us/Government/Planning/Adopted_General_Plan.aspx.

[38] CTA Engineering and Surveying, 2013, op. cit.

percent and 5 percent for the 10-year and 100-year storm, respectively. Under the proposed project, if it is determined that downstream facilities cannot accept the increased flows in conformance with the requirements of the El Dorado County Drainage Manual, increases in peak flows at this discharge point would be conveyed to another outfall with the capacity to accept the peak flows. The details of the flow balance for this modification would be included in the final drainage plan submitted to El Dorado County for review and approval prior to project construction.

(4) Groundwater Recharge. The project site is predominantly undeveloped, and partially covering undeveloped areas with impervious surfaces, as proposed by the project, could reduce infiltration of rainfall and runoff, which in turn could adversely affect aquifer recharge and groundwater supplies. However, the proposed project would not substantially interfere with groundwater recharge because the project site is underlain by bedrock and low permeability soils[39] and does not overlie a regionally significant groundwater aquifer[40]. In addition, although the project site encompasses an area of approximately 280 acres, approximately 84 of these acres would remain as open space or landscaped areas, including parks, through which infiltration would continue to occur. Furthermore, the development of a detention basin on the southwest corner of the project site would facilitate the infiltration of stormwater runoff from impervious surfaces into the local groundwater aquifer. Lastly, the development of the project site would not interfere with groundwater recharge via water infiltration through creeks because no major modification or realignments of Green Spring Creek or any of the other existing site drainages are proposed. This potential impact to groundwater recharge would therefore be less than significant.

(5) Groundwater Depletion. Temporary dewatering measures may be necessary when installing utilities in areas where groundwater is perched on shallow bedrock.[41] Because the anticipated dewatering activities are both short-term and target only on-site shallow perched groundwater, they would not result in a substantial reduction of groundwater supplies that could impact nearby wells. Three wells are known to exist on the project site. The existing Dixon residence (Lot 1) is proposed to continue using its existing well and septic system. It is assumed that the water use after implementation of the proposed project would be comparable to current water use. The second well is located near the second house currently located on the project site, which will be demolished as part of the project. The third well is located near Lot 249. The second and third wells will be abandoned, in accordance with County and State requirements, upon completion of the proposed project.

(6) Water Quality. The following describes a water quality impact associated with the proposed project.

<u>Impact HYD-1</u>: The construction period and operation period of the project could result in degradation of water quality in Green Spring Creek and downstream receiving waters by reducing the quality of stormwater runoff and increasing erosion/sedimentation. (S)

[39] Youngdahl Consulting Group, 2011, op. cit.

[40] California Department of Water Resources, 2003. Groundwater Basins of California. October. Website: www.water.ca.gov/groundwater/bulletin118/gwbasin_maps_descriptions.cfm.

[41] Youngdahl Consulting Group, 2011, op. cit.

(7) Construction-Period Impacts. The development of the project site would require demolition, excavation, construction, and/or grading. During these activities, there would be the potential for surface water runoff from construction sites to carry sediment and pollutants into stormwater drainage systems and local waterways.

Excavation and the exposure of shallow soils related to grading could result in erosion and sedimentation. The accumulation of sediment could result in the blockage of flows, potentially causing increased localized ponding or flooding. Construction activities would require the use of gasoline and diesel-powered heavy equipment, such as bulldozers, backhoes, water pumps, and air compressors. Chemicals such as gasoline, diesel fuel, lubricating oil, hydraulic oil, lubricating grease, automatic transmission fluid, paints, solvents, glues and other substances could be used during construction. An accidental release of any of these substances could degrade the quality of the surface water runoff and adversely affect receiving waters.

(8) Operation-Period Impacts. New construction and intensified land uses within the project site could result in increased vehicle use and the discharge of associated pollutants. Leaks of fuel or lubricants, tire wear, brake dust, and fallout from exhaust contribute petroleum hydrocarbons, heavy metals, and sediment to the pollutant load in runoff being transported to receiving waters. Runoff from new landscaped areas may contain residual pesticides and nutrients. The development of medium- and high-density residential units and public open spaces could increase the amount of pathogens in water from pet waste and the amount of trash and debris entering the stormwater drainage system. Consequently, the long-term degradation of runoff water quality within the project site and of receiving waters could occur as a result of the proposed project.

Mitigation Measure HYD-1: Implementation of the following two-part mitigation measure would reduce construction- and operation-period impacts to water quality to a less-than-significant level:

HYD-1a: Consistent with the requirements of the statewide Construction General Permit, the project applicant shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) designed to reduce potential adverse impacts to surface water quality during the project construction period. The SWPPP shall be designed to address the following objectives: (1) all pollutants and their sources, including sources of sediment associated with construction, construction site erosion and all other activities associated with construction activity are controlled; (2) where not otherwise required to be under a Regional Water Board permit, all non-stormwater discharges are identified and either eliminated, controlled, or treated; (3) site Best Management Practices (BMPs) are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity; and (4) stabilization BMPs installed to reduce or eliminate pollutants after construction are completed.

The SWPPP shall be prepared by a Qualified SWPPP Developer. The SWPPP shall include the minimum BMPs required for the identified Risk Level. BMP implementation shall be consistent with the BMP requirements in the most recent version of the California Stormwater Quality Association Stormwater Best Management Handbook-Construction or the Caltrans Stormwater Quality Handbook Construction Site BMPs Manual.

The SWPPP shall include a construction site monitoring program that identifies requirements for dry weather visual observations of pollutants at all discharge locations, and as

appropriate, depending on the project Risk Level, sampling of site effluent and receiving waters. A Qualified SWPPP Practitioner (QSP) shall perform or supervise all inspection, maintenance, repair, and sampling activities. Although the QSP may delegate any or all of these activities to a trained employee, the QSP shall ensure that all tasks are adequately completed.

In addition to the SWPPP requirement, the project shall fully comply with El Dorado County's SWMP, Grading, Erosion and Sediment Control Ordinance (Chapter 15.14), Design and Improvement Standards Manual, and Drainage Manual.

HYD-1b: The project sponsor shall fully comply with the requirements of the Phase II General Permit, as implemented by El Dorado County through the SWMP, Grading, Erosion and Sediment Control Ordinance (Chapter 15.14), Design and Improvement Standards Manual, Drainage Manual, and General Plan Goal 7.3. Responsibilities include, but are not limited to, designing BMPs into project features and operations to reduce potential impacts to surface water quality and to manage changes in the timing and quantity of runoff associated with development of the project site. The BMPs shall include Low Impact Development (LID) measures, such as minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source, to the maximum extent practicable. It should be noted that because the project site is characterized by shallow bedrock and low permeability soils, some LID measures, such as those that rely on infiltration, are not likely to be feasible at the project site.[42] Funding for the maintenance of all BMPs for the life of the proposed project shall be specified (as the County will not assume maintenance responsibilities for BMPs within private developments). The project sponsor shall establish a stormwater system operation and maintenance plan that specifies a regular inspection schedule of stormwater treatment facilities. The plan and subsequent reports documenting the inspections and remedial actions shall be submitted to the County for review and approval. (LTS)

Implementation of this two-part mitigation measure will reduce this impact to a less-than-significant level.

c. Cumulative Impacts. Grading and construction associated with the project, in combination with construction of other areas within the vicinity, could increase erosion and sedimentation and degrade storm water runoff quality particularly if grading and excavations occur during the wet season. Implementation of existing regulatory requirements, including preparation and implementation of a SWPPP is required under current NPDES regulations. These measures would reduce potential construction-period cumulative impacts to a less-than-significant level. Therefore, the project, in combination with other past, present, and reasonably probable future projects, would not make a significant cumulative contribution to adverse hydrology and water quality impacts within the watershed. Construction-period cumulative impacts, therefore, would be less than significant.

Cumulative operational impacts associated with violating water quality standards, providing substantial additional sources of polluted runoff, or otherwise substantially degrading the water

[42] Youngdahl Consulting Group, 2011, op. cit.

quality of downstream receiving waters would also be less than significant. In accordance with the Phase II General Permit and County requirements, all new development projects that add and/or replace 10,000 square feet or more of impervious area must incorporate BMPs and LID measures for treating runoff prior to discharge. Compliance with these existing permit requirements has been determined to adequately address cumulative impacts by the regulating agencies.

K. HAZARDS AND HAZARDOUS MATERIALS

This section describes the potential presence of hazards and hazardous materials[1] on and near the project site and evaluates its potential impact to public health and safety and the environment. The evaluation presented in this section was based on a review of project information provided by the applicant, a reconnaissance of the project site conducted in September 2013, a review of a Phase I Environmental Site Assessment (Phase I ESA)[2] and geotechnical investigation report[3] for the project site, and other published materials.

1. Setting

This section discusses the project site hazardous materials setting and includes a description of other public health and safety concerns including wildfire hazards, emergency response plans, and electrical magnetic field (EMF) hazards. EMF hazards are a potential concern due to the location of transmission lines running along the south side of the project site.

This section also summarizes regulatory framework and existing conditions for hazardous materials and hazardous waste; lead, asbestos, and other hazardous building materials; applicable worker health and safety requirements; and local policies and programs related to public health and safety.

a. Project Site Hazardous Materials Setting. A Phase I ESA[4] was performed by Youngdahl Consulting Group (YCG) for the project site in 2011. The Phase I ESA was performed in accordance with Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process adopted by ASTM International in Method E1527-05. The Phase I ESA included a review of environmental records, physical setting documents, historical land use information, and other project site related documents; interviews with persons knowledgeable about the study area; and a reconnaissance of the study area.

The study area included seven parcels identified with the following Assessor's Parcel Numbers: 126-150-13 (Vanderburg), 126-150-15 (Mikulaco), 126-150-23 (Louie), 126-020-02 (Louie), 126-020-03/04 (Louie), 126-150-21 (Norris), and 115-080-04 (Peters). Parcel 126-020-01, identified as the Dixon family residence, is part of the project site but was not included in the study area for the Phase I ESA.

[1] The California Health and Safety Code defines a hazardous material as, "...any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety, or to the environment. Hazardous materials include, but are not limited to, hazardous substances, hazardous waste, radioactive materials, and any material which a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment." (California Health and Safety Code Section 25501).

[2] Youngdahl Consulting Group, Inc., 2011a. *Phase I Environmental Site Assessment, Dixon Ranch, Green Valley Road, El Dorado Hills, California*, April 12.

[3] Youngdahl Consulting Group, Inc., 2011b. *Preliminary Geotechnical Engineering Study for Dixon Ranch Subdivision, Green Valley Road, El Dorado Hills, El Dorado County, California*, April 29.

[4] Youngdahl Consulting Group, Inc., 2011a, op. cit.

(1) Historical Land Uses. Historical land use information on the study area and adjoining properties was identified through a review of historical land use records, including aerial photographs, fire insurance maps, property tax files, recorded land title records, topographic maps, local street directories, building department records, and zoning/land use records.

The Phase I ESA identified single-family residences as the first developed use for parcels 126-150-13 (1993) and 126-150-15 (1973). According to the owner of parcel 126-150-13 (Vanderburg), the parcel has also been historically used for horse grazing. The remaining five parcels were never developed but were also used for grazing. No other historical land uses were identified for parcels within the Phase I ESA study area.[5]

Historical land uses on adjoining properties included residences and roadways. The residential subdivision to the west of the study area was first identified on a 1993 aerial photograph. Green Valley Road to the north of the study area was first identified on an 1893 topographic map and was shown realigned in its current configuration on a 1973 topographic map. No other historical land uses were identified on properties adjoining the study area.[6]

(2) Current Land Uses. Current land uses on the study area and adjoining properties were identified during a 2011 reconnaissance for the Phase I ESA. Land uses on the study area observed during the reconnaissance included residential properties (126-150-13 [Vanderburg] and 126-150-15 [Mikulaco]); a vacant lot (126-150-21 [Norris]); commercial and agricultural uses, and landfill from nearby swimming pool excavations (115-080-04 [Peters]); and agricultural, residential, grazing, and open space (126-150-23, 126-020-03/04, and 126-020-02 [Louie]). Residential land uses were also identified on the following adjoining properties: two parcels between 126-150-15 (Mikulaco) and 126-150-21 (Norris), on 126-020-01 (Dixon family residence) between 126-020-02 (Louie) and 126-020-03 (Louie), and west of the project site.

Parcel 115-080-04 (Peters) contained a strawberry field, landscaping equipment, storage sheds, an aboveground diesel storage tank, and a stockpile of soil. The Phase I ESA did not identify the contents of the storage sheds; however, paint cans and fuel containers were observed stored next to a metal container box. According to the property owner, the fuel tank had been empty for six years and had been filled only twice, once with gasoline and once with diesel. The owner added that the tank never leaked and no fuel has spilled at the tank location. According to the property owner, clean spoils from swimming pool excavations were deposited on the property under a permit issued by El Dorado County around 2006. When the permit expired, the County issued a permit violation to the property owner.

Parcels 126-150-23, 126-020-03/04, and 126-020-02 (Louie) were observed to be mostly vacant and used for grazing. Parcel 126-150-23 was also observed to contain a strawberry field, former water irrigation tanks used for temporary fuel storage, a storage shed, a storage yard, and the Dixon Ranch residence with animal shed and barn. According to the owner of parcel 126-150-15 (Mikulaco), the strawberry field is farmed organically. In addition, the County agricultural commissioner, interviewed

[5] Youngdahl Consulting Group, Inc., 2011a, op. cit.

[6] Ibid.

for the Phase I ESA, indicated that strawberry fields do not use legacy chemicals that persist in soil over time.[7] The storage shed and barn were observed to contain chemicals, fertilizers, old car batteries, vehicles, gasoline containers, and a lawnmower, among other items.

On September 4, 2013, a professional engineer with BASELINE Environmental Consulting (Baseline) performed an additional reconnaissance of the project site. The purpose of the 2013 reconnaissance was to verify information from the Phase I ESA and identify any potential changes in condition or land use of the project site or adjoining properties since that investigation was conducted. The reconnaissance included inspection of the project site with the exception of parcel 126-020-01 (Dixon family residence) and adjoining properties. Observations for adjoining properties were made from the project site and public rights-of-way.

The reconnaissance identified strawberry and blackberry fields, a storage yard, and the Dixon Ranch on parcel 126-150-23 (Louie). The tanks used for water irrigation were not observed on-site. The storage yard was occupied by a landscaping company and contained mounds of soil, equipment, tools, supplies, and various containers. The Dixon Ranch included a residence and outbuildings for animal shelter and storage. The outbuildings contained various residential items and appeared partially ruined. No evidence of spills, soil staining, or distressed vegetation was observed at parcel 126-150-23 (Louie).

The remaining portion of the project site (except for the Dixon family residence) was mostly vacant. The area was covered with vegetation and contained few remnants of grazing equipment and a portion of a power transmission line. No evidence of hazardous materials use, storage, or release was observed at the remaining portion of the project site.

Land uses on adjoining properties were the same as those reported in the 2011 Phase I ESA. Therefore, the reconnaissance found the condition of the project site and adjoining properties to be consistent with the Phase I ESA.

(3) Review of Environmental Records. The Phase I ESA included a review of available agency records from federal, tribal, state, and local regulatory agencies. The purpose of the records review was to determine whether hazardous materials use or release at the study area and within search distances specified by the ASTM Standard, if any, could affect conditions at the study area. The Phase I ESA reported that the seven parcels within the study area and the Dixon family residence (parcel 126-020-01) were not identified in any regulatory agency database.[8] One property (Sanford Ranch located at 2321 Green Valley Road) was identified on a hazardous materials release database within the minimum search distance specified by the ASTM Standard. However, based on the location of the site, more than one half mile east of the project site, and available site details, the Phase I ESA concluded that the conditions at that release site did not present a significant potential to affect conditions at the study area.[9]

[7] Ibid.

[8] Ibid.

[9] Ibid.

(4) Phase I ESA Conclusions. The Phase I ESA did not find any recognized environmental conditions that could affect conditions at the study area.[10] Based on the findings of the Phase I ESA, further investigation was not recommended. The three fuel tanks observed on the study area were recommended for cleaning and disposal in accordance with applicable regulations. The Phase I ESA did not include a hazardous building materials assessment but indicated the potential for lead-based paint or asbestos to be present in the building materials of older structures on the study area.

(5) Naturally-Occurring Asbestos. The geotechnical investigation report for the study area identified serpentinite bedrock underlying part of the project site.[11] Serpentinite often contains naturally-occurring asbestos fibers, which may be released to the air when the material is disturbed. The northern portion of the project site is located in a buffer zone on the County Asbestos-Review Areas map,[12] indicating that part of the project site is within one-quarter mile of rock formations the California Division of Mines and Geology (now California Geological Survey) identified as likely to contain naturally-occurring asbestos. Due to this mapping, El Dorado County AQMD has indicated that construction at the site will require preparation and approval of an Asbestos Dust Mitigation Plan to address potential hazards, in order to comply with County grading permit requirements.[13] Seven soil samples from parcels where serpentinite bedrock was not present were analyzed for asbestos content during the geotechnical investigation. Six of those samples did not contain asbestos above laboratory reporting limits. The geotechnical report concluded that grading on two of the project site parcels (126-020-02 and 126-020-03/04), where serpentinite bedrock was not identified and soil samples did not contain asbestos, may not require an Asbestos Dust Mitigation Plan, if the grading activities were isolated to those two parcels.[14] A separate geotechnical investigation for parcel 126-020-01 (Dixon residence), which is located outside the County Asbestos-Review areas, did not identify any serpentinite in the soils;[15] grading activities on that parcel may also not require an Asbestos Dust Mitigation Plan. However, for all grading activities at the project site, a fugitive dust mitigation plan would be required to comply with other County grading permit requirements.

b. Emergency Response and Evacuation Plans. El Dorado County has adopted a Multi-Jurisdiction Hazard Mitigation Plan.[16] The plan was prepared using guidance from the California Office of Emergency Services to identify potential hazards and protect life, safety, and property by establishing detailed procedures for preventing and responding to those hazards. The plan includes guidelines for floods, dam/levee failure, earthquakes, sinkholes, landslides, winter storms, volcanic activity, erosion, severe thunderstorms and tornadoes, hurricanes and tropical storms, and avalanches.

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[10] Ibid.

[11] Youngdahl Consulting Group, Inc., 2011b, op. cit.

[12] El Dorado County, 2005. Surveyor/GIS Division. *Asbestos Review Areas, Western Slope, County of El Dorado, State of California, Map*. July 21.

[13] El Dorado County, 2012. AQMD Comments on Notice of Preparation of an Environmental Impact Report for the Dixon Ranch Residential Project, December 20.

[14] Youngdahl Consulting Group, Inc., 2011b, op. cit.

[15] Youngdahl Consulting Group, Inc., 2011c. Preliminary Geotechnical Engineering Study – Addendum Parcel, Dixon Ranch Subdivision. June 14.

[16] El Dorado County, 2004. *Multi-Jurisdiction Hazard Mitigation Plan*, November.

All development projects in the project area are reviewed by the El Dorado Hills Fire Department to ensure that the development meets established standards for emergency access and evacuation.

c. Wildfire Hazard Setting. In accordance with California Public Resource Code Section 4201 4204 and Government Code Section 51175-51189, the California Department of Forestry and Fire Protection (CalFIRE) has mapped areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. These zones, referred to as Fire Hazard Severity Zones (FHSZ), represent the risks associated with wildland fires. Fire Hazard Severity Zones mapped by CDF for state and local responsibility areas are classified as either "Moderate," "High," or "Very High" based on fire hazards. The project site is mapped in a "Moderate" wildfire hazard zone.[17]

Under State law, owners of properties in areas rated as Moderate, High, or Very High fire hazard are subject to the maintenance requirements of the Public Resources Code, Section 4291. Under Section 4291, anyone who owns, leases, controls, operates, or maintains any building or structure in or adjoining wildlands must:

- Maintain a 30-foot-wide firebreak around each building or structure;
- Remove all brush, flammable vegetation, or combustible brush within 100 feet of buildings or structures;
- Remove any portion of any tree that extends within 10 feet of a chimney or stovepipe;
- Maintain any tree adjacent to or overhanging a structure to keep it free of dead or dying wood;
- Remove leaves, needles, or other vegetative material from roof; and
- Provide and maintain screens over every chimney or stovepipe.

The El Dorado Hills Fire Department implements State wildfire safety requirements by requiring that developments adjacent to wildlands develop, implement, and maintain a Wildland Fire Safe Plan.

d. Electrical Transmission Lines/Electromagnetic Fields (EMFs). High-voltage electrical transmission lines owned by Sacramento Municipal Utilities District (SMUD) are located along the south border of the project site. Occupants of properties near high-voltage electrical transmission lines may be exposed to EMFs generated by these power lines, in addition to EMFs from lower voltage electrical distribution lines, building wiring, appliances, and natural phenomena, including lightning and static electricity.

The overall strength of EMFs dissipates quickly with distance from the source. However, even far away from EMF sources, there is a low, but measurable "background" level of EMFs in the environment that is not related to any particular human-made source. Typically, EMFs are measured at "background" levels about 3 to 4 feet away from an electrical appliance, 60 to 200 feet from an electrical distribution line, and about 300 to 1,000 feet from a transmission line.[18]

[17] CalFIRE, 2007. El Dorado County, Fire Hazard Severity Zones in State Responsibility Area, Fire Hazard Map. November 7.

[18] California Department of Public Health Services, 1999. *Short Fact Sheet on EMF*, California EMF Program.

There has been public concern about the potential health effects associated with EMFs from human-made sources, such as transmission lines. Human cells have their own electric fields, and some laboratory studies have shown that these internal fields can be disrupted by exposure to even low-energy EMFs. However, determining what effects, if any, EMFs may have on living tissue over long periods of time has proved to be a difficult scientific challenge.

A 1999 review of the literature, prepared by the National Institute of Environmental Health Science (NIEHS), concluded that "the NIEHS believes that there is weak evidence for possible health effects from EMF exposures, and until stronger evidence changes this opinion, inexpensive and safe reductions in exposure should be encouraged."[19] A more recent analysis of the relationship between EMFs and childhood leukemia, reviewing studies conducted since the NIEHS review, similarly concluded that EMFs are possibly carcinogenic but that scientific uncertainties regarding the apparent association remain.[20]

Although no laws or regulations govern the construction of residences near electrical transmission lines, SMUD has several restrictions on land use within its electrical transmission line easements. Prior to any grading or building permits within the easement, a joint-use agreement with SMUD must be obtained. Trees, landscaping, light standards, and construction equipment may not exceed 15 feet within the easement area at any time. No structures or buildings are permitted to be built within the easement area, including swimming pools, spas, gazebos, trash enclosures, wells, or man-made reservoirs.

As no specific health effects of EMFs have been conclusively demonstrated, there are no health-based or regulatory risk standards for EMF exposure. The assessment of effects of EMFs in this EIR is therefore limited to the qualitative discussion in this subsection, and no impacts related to EMFs are identified.

e. Hazardous Materials Regulatory Framework. The following section provides the federal, State, and local regulatory framework for hazardous materials and hazardous waste, hazardous building materials, and worker health and safety.

(1) Hazardous Materials and Hazardous Waste. The use, storage, and disposal of hazardous materials, including management of contaminated soils and groundwater, is regulated by numerous local, state, and federal laws and regulations. The U.S. Environmental Protection Agency (U.S. EPA) is the federal agency that administers hazardous materials and hazardous waste regulations. State agencies include the California EPA (Cal/EPA), which includes the California Department of Toxic Substances Control (DTSC), the State Water Resources Control Board (State Water Board), the California Air Resources Board (CARB), and other agencies. The Central Valley Regional Water Quality Control Board (Regional Water Board), the El Dorado County Air Quality Management District (El Dorado County AQMD), and the El Dorado County Environmental Management Department (EDCEMD) have jurisdiction on a regional level.

[19] National Institute of Environmental Health Science, 1999. *Health Effects from Exposure to Power-Line Frequency Electric and Magnetic Fields*, Prepared in response to the 1992 Energy Policy Act. NIH Publication No. 99-4493.

[20] Kheifets et al., 2010. Pooled Analysis of Recent Studies on Magnetic Fields and Childhood Leukemia. British Journal of Cancer: 102, 1128-1135. Website: www.ncbi.nlm.nih.gov/pmc/articles/PMC2965855/#bib24.

A description of each federal, state, and regional agency's jurisdiction and involvement in the management of hazardous materials and wastes is provided below.

Federal. The U.S. EPA is the federal agency responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials and hazardous waste. The federal regulations are primarily codified in Title 40 of the Code of Federal Regulations (40 CFR). The legislation includes the Resource Conservation and Recovery Act of 1976 (RCRA), the Superfund Amendments and Reauthorization Acts of 1986 (SARA), and the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The U.S. EPA provides oversight for site investigation and remediation projects, and has developed protocols for sampling, testing, and evaluation of solid wastes.[21]

State. Three State agencies, described below, regulate hazardous materials and waste that may occur on or around the project site.

Department of Toxic Substances Control. In California, DTSC is authorized by the U.S. EPA to enforce and implement federal hazardous materials laws and regulations. California regulations pertaining to hazardous materials are equal to or exceed the federal regulation requirements. Most state hazardous materials regulations are contained in Title 22 of the California Code of Regulations (CCR). DTSC generally acts as the lead agency for soil and groundwater cleanup projects that affect public health, and establishes cleanup levels for subsurface contamination that are equal to, or more restrictive than, federal levels. DTSC has also developed land disposal restrictions and treatment standards for hazardous waste disposal in California.

State Water Resources Control Board. The State Water Board enforces regulations on how to implement underground storage tank (UST) programs. It also allocates monies to eligible parties who request reimbursement of funds to clean up soil and groundwater pollution from UST leaks. The State Water Board also enforces the Porter-Cologne Water Quality Act through its nine regional boards, including the Central Valley Regional Water Quality Control Board, described below.

California Air Resources Board (ARB). This agency is responsible for coordination and oversight of state and local air pollution control programs in California, including implementation of the California Clean Air Act of 1988. ARB has developed State air quality standards, and is responsible for monitoring air quality in conjunction with the local air districts.

Regional Agencies. The following regional agencies have regulatory authority over the proposed project's management of hazardous materials and waste.

Central Valley Regional Water Quality Control Board. The nine Regional Water Boards, including the Central Valley Regional Water Quality Control Board, provide for protection of State waters in accordance with the Porter-Cologne Water Quality Act of 1969. The Regional Water Board can act as lead agency to provide oversight of sites where the quality of groundwater or surface waters is threatened, and has the authority to require investigations and remedial actions.

[21] U.S. Environmental Protection Agency, 2008. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846.* Website: www.epa.gov/epaoswer/hazwaste/test/main.htm (accessed July 18, 2013).

El Dorado County Air Quality Management District. The El Dorado County AQMD has primary responsibility for control of air pollution from sources other than motor vehicles and consumer products (which are the responsibility of U.S. EPA and ARB). The El Dorado County AQMD is responsible for preparing attainment plans for non-attainment criteria pollutants, controlling stationary air pollutant sources, and limiting emissions of fugitive dust and naturally-occurring asbestos from construction activities (District Regulation 223).

El Dorado County Environmental Management Department. The EDCEMD is responsible for enforcement of State and federal laws and County ordinances pertaining to hazardous materials and wastes. The EDCEMD implements a variety of programs to protect public health and safety and ensure proper management of hazardous materials and wastes. Some of the programs include a water well program, household hazardous waste program (HHWP), and solid waste and recycling program.

(2) Lead, Asbestos, and Other Hazardous Building Materials. Prior to 1978, lead was commonly used in exterior and interior paints. Lead is a suspected human carcinogen (i.e., may cause cancer), a known teratogen (i.e., causes birth defects), and a reproductive toxin (i.e., can cause sterility). Prior to the 1980s, building materials often contained asbestos fibers, a known human carcinogen. Asbestos, used to provide strength and fire resistance, was frequently incorporated into insulation, roofing and siding, textured paint and patching compounds used on wall and ceiling joints, vinyl floor tiles and adhesives, and water and steam pipes.

Fluorescent lighting tubes and ballasts, computer displays, and several other common items containing hazardous materials (including mercury and polychlorinated biphenyls (PCBs)) are regulated as "universal wastes" by the State of California. Universal waste regulations allow common, low-hazard wastes to be managed under less stringent requirements than other hazardous wastes. Management of other hazardous wastes is governed by DTSC hazardous waste rules.

(3) Naturally-Occurring Asbestos. In addition to asbestos added to building materials, rock and soil can contain naturally-occurring asbestos fibers. This asbestos may be released to the air during grading and other construction activities. To address this hazard, El Dorado County AQMD enforces Rule 223-2 Fugitive Dust-Asbestos Hazard Mitigation. It requires that an Asbestos Dust Mitigation Plan be submitted and approved by El Dorado County AQMD prior to any construction activity involving 20 cubic yards or more of graded material in areas where naturally-occurring asbestos may be disturbed.

(4) Worker Health and Safety. Worker health and safety is regulated at the federal level by the U.S. Department of Labor, Occupational Safety and Health Administration (OSHA). The federal Occupational Safety and Health Act of 1970 authorizes states (including California) to establish their own safety and health programs with OSHA approval. Worker health and safety protections in California are regulated by the California Department of Industrial Relations (DIR). The DIR includes the Division of Occupational Safety and Health (DOSH), which acts to protect workers from safety hazards through its California OSHA (Cal/OSHA) program, and provides consultant assistance to employers. California standards for workers dealing with hazardous materials are contained in CCR Title 8 and include practices for all industries (General Industrial Safety Orders), and specific practices for construction, and other industries. Workers at hazardous waste sites (or workers who may be exposed to hazardous wastes that might be encountered during excavation of contaminated soils) must receive specialized training and medical supervision according to the Hazardous Waste

Operations and Emergency Response (HAZWOPER) regulations.[22] Additional regulations have been developed for construction workers potentially exposed to lead[23] and asbestos.[24] Cal/OSHA enforcement units conduct on-site evaluations and issue notices of violation to enforce necessary improvements to health and safety practices.

f. El Dorado County General Plan. The El Dorado County General Plan[25] was adopted in 2004. It provides basic planning strategies for development and land use in the County. The Public Health, Safety, and Noise Element of the El Dorado County General Plan presents safety goals and policies to address fire hazards, seismic hazards, flood hazards, noise, hazardous materials, air quality, airport safety, and highway safety. The Public Health, Safety, and Noise Element was updated in 2009. This subsection presents the safety goals, safety policies, and implementation programs for hazardous materials, emergency response and evacuation plans, and wildfire safety that would apply to the proposed project.

Public Health, Safety, and Noise Element

Hazardous Materials

- *Goal 6.6: Management of Hazardous Materials*. Recognize and reduce the threats to public health and the environment posed by the use, storage, manufacture, transport, release, and disposal of hazardous materials.
- Policy 6.6.1.1: The Hazardous Waste Management Plan shall serve as the implementation program for management of hazardous waste in order to protect the health, safety, property of residents and visitors, and to minimize environmental degradation while maintaining economic viability.
- Policy 6.6.1.2: Prior to the approval of any subdivision of land or issuing of a permit involving ground disturbance, a site investigation, performed by a Registered Environmental Assessor or other person experienced in identifying potential hazardous wastes, shall be submitted to the County for any subdivision or parcel that is located on a known or suspected contaminated site included in a list on file with the Environmental Management Department as provided by the state of California and federal agencies. If contamination is found to exist by the site investigations, it shall be corrected and remediated in compliance with applicable laws, regulations, and standards prior to the issuance of a new land use entitlement or building permit.
- Policy 6.3.1.2: The County shall establish a mandatory disclosure program, where potential buyers and sellers of real property in all areas likely to contain naturally occurring asbestos (based on mapping developed by the California Department of Conservation [DOC]) are provided information regarding the potential presence of asbestos subject to sale. Information shall include potential for exposure from access roads and from disturbance activities (e.g., landscaping).
- Measure HS-E: The County shall adopt a Naturally Occurring Asbestos Disclosure Ordinance that includes the provisions in the policy described in Policy 6.3.1.2.

[22] Title 8, CCR Section 5192.

[23] Title 8, CCR Section 1532.1.

[24] Title 8, CCR Section 1529.

[25] El Dorado County, 2004. *El Dorado County General Plan.* July 19.

- Measure HS-F: Develop a program to track asbestos-related information as it pertains to El Dorado County.
- Measure HS-M: Maintain and update the Hazardous Waste Management Plan for management of hazardous waste to protect the health, safety, and property of residents and visitors, and to minimize environmental degradation.
- Measure HS-N: Collect and maintain information on sites known, or suspected to be contaminated by hazardous materials. The information shall include current data from the California Department of Toxic Substances Control's Hazardous Waste and Substance Sites List compiled pursuant to Section 65962.5 of the Government Code.
- Measure HS-V: Amend prescriptive standard for the Fugitive Dust Prevention and Control Plan and Contingent Asbestos Hazard Dust Mitigation Plan.

Emergency Response and Evacuation Plans

- *Goal 6.1: Coordination*. A coordinated approach to hazard and disaster response planning.
- Policy 6.1.1.1: The El Dorado County Multi-jurisdictional Local Hazard Mitigation Plan (LHMP) shall serve as the implementation program for the coordination of hazard planning and disaster response efforts within the County.
- Policy 6.2.3.2: As a requirement of new development, the applicant must demonstrate that adequate access exists, or can be provided to ensure that emergency vehicles can access the site and private vehicles can evacuate the area.
- Measure HS-A: Maintain emergency response procedures and programs, including agreements with other local, state, and federal agencies, to provide coordinated disaster response and programs to inform the public of emergency preparedness and response procedures.

Wildfire Hazards

- *Goal 6.2: Fire Hazards*. Minimize fire hazards and risks in both wildland and developed areas.
- Policy 6.2.2.1: Fire Hazard Severity Zone Maps shall be consulted in the review of all projects so that standards and mitigation measures appropriate to each hazard classification can be applied. Land use densities and intensities shall be determined by mitigation measures in areas designated as high or very high fire hazard.
- Policy 6.2.2.2: The County shall preclude development in areas of high and very high wildland fire hazard or in areas identified as "urban wildland interface communities within the vicinity of federal lands that are a high risk for wildfire," as listed in the Federal Register of August 17, 2001, unless such development can be adequately protected from wildland fire hazard, as demonstrated in a Fire Safe Plan prepared by a Registered Professional Forester (RPF) and approved by the local Fire Protection District and/or California Department of Forestry and Fire Protection.
- Policy 6.2.3.4: All new development and public works projects shall be consistent with applicable state Wildland Fire Standards and other relevant state and federal fire requirements.
- Policy 6.2.4.1: Discretionary development within high and very high fire hazard areas shall be conditioned to designate fuel break zones that comply with fire safe requirements to benefit the new and, where possible, existing development.
- Policy 6.2.4.2: The County shall cooperate with the California Department of Forestry and Fire Protection and local fire protection districts to identify opportunities for fuel breaks in zones of high and very high fire hazard either prior to or as a component of project review.

- Policy 6.2.5.1: The County shall cooperate with the U.S. Forest Service, California Department of Forestry and Fire Protection, and local fire districts in fire prevention education programs.
- Measure HS-B: Work with the local Fire Safe Councils, fire protection districts, U.S. Forest Service, and California Department of Forestry and Fire Protection to develop and implement a countywide Wildfire Safety Plan.

2. Impacts and Mitigation Measures

This section analyzes the impacts related to hazardous materials and public health and safety that could result from implementation of the proposed project. Criteria of significance are defined, which establish the thresholds for determining whether a project impact is significant. Potential hazardous materials and public health and safety impacts from the proposed project are then presented, with mitigation measures to reduce potential impacts to a less-than-significant level.

a. Criteria of Significance. The proposed project would result in a significant hazard or hazardous materials impact if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials;
- Create a significant hazard to the public or environment through reasonably foreseeable upset or accident conditions involving the release of hazardous materials into the environment;
- Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼- mile of an existing or proposed school;
- Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment;
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan; or
- Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands.

b. Project Impacts. The following discussion describes the potential impacts related to hazards and hazardous materials that would result from implementation of the proposed project.

(1) Routine Transport, Use, or Disposal of Hazardous Materials. The proposed project involves a residential subdivision that includes single-family homes, a clubhouse, parks, and trails. Residential land uses typically do not involve transport, use, or disposal of significant quantities of hazardous materials. Generally, small quantities of hazardous materials, such as paints, cleaning chemicals, and fertilizers, are used in residential subdivisions for routine maintenance. The El Dorado County Environmental Management Department implements the HHWP which provides assistance to residents for proper disposal of household hazardous wastes. Implementation of the HHWP reduces improper disposal of household hazardous wastes to protect of human health and the environment.

Routine maintenance of the two proposed parks (Village Park and Neighborhood Park) would be performed by El Dorado Hills Community Services District (EDHCSD).[26] No significant transportation, use, or disposal of hazardous materials would be anticipated for park maintenance. EDHCSD would be subject to existing regulatory requirements for hazardous materials, which would serve to mitigate any potential significant impacts related to routine hazardous materials transportation, use, and disposal. The potential impact related to routine transport, use, or disposal of hazardous materials would be considered less than significant.

(2) Foreseeable Upset and Accident Conditions. The proposed residential subdivision would not involve storage or use of hazardous materials (except for small quantities for routine maintenance as described above) or generation of significant hazardous wastes. As such, potential significant impacts related to a foreseeable upset would not be expected.

During construction, hazardous materials such as fuel, lubricants, paint, sealants, and adhesives would be transported and used at the project site. Management of these materials at the project site would be subject to the requirements of the National Pollutant Discharge Elimination System (NPDES) Construction General Permit. As detailed in Mitigation Measure HYD-1 in the Hydrology and Water Quality Section, compliance would require preparation and implementation of a Stormwater Pollution Prevention Plan (SWPPP) designed to reduce the risk of spills or leaks from the reaching the environment. The SWPPP would also include a Spill Response Plan to address minor spills of hazardous materials. Compliance with SWPPP requirements would ensure that potential significant hazards associated with routine transport, use, or disposal of hazardous materials during and after construction would be less than significant.

Release of asbestos fibers from disturbance of soil and rock containing naturally-occurring asbestos during construction would be mitigated by implementation of El Dorado County AQMD Rule 223-2. Any construction or grading permit disturbing greater than 20 cubic yards of graded material that is likely to include naturally occurring asbestos would be required to comply with this rule, which requires the preparation of an Asbestos Dust Mitigation Plan. This plan would require that no equipment or construction operation emits visible dust that may cross the property line. Among other measures, this typically requires keeping construction areas adequately wetted, applying chemical dust suppressants if necessary, covering active soil stockpiles with tarps and installing wind barriers across open areas and between the project and any adjacent occupied residential or business properties. Additional discussion of potential impacts from naturally-occurring asbestos is included in Section IV.D, Air Quality.

Additionally, based on historical land use resources and the apparent age of the buildings on site, there may be a potential for lead, asbestos, and other hazardous materials to be present. Though these materials are not a significant concern during the active life of the buildings, they may be released to the air during demolition, potentially creating a risk to project construction workers, nearby members of the general public, and the environment.

[26] Currently, it is anticipated that the Neighborhood Park would be dedicated to EDHCSD for management. However, if the final design of the proposed project included gating, which prevents general public access to the Neighborhood Park, it is then anticipated that the park would be a private park maintained by the future Home Owner's Association.

Impact HAZ-1: Demolition of existing structures on the project site could release lead, asbestos, and/or other hazardous materials, presenting a risk to human health and the environment. (S)

> Mitigation Measure HAZ-1: A hazardous building materials survey shall be conducted by a qualified and licensed professional for all structures proposed for demolition under the project. All loose and peeling lead-based paint and asbestos-containing material (ACM) shall be abated by certified contractor(s) in accordance with local, State, and federal requirements. All other hazardous materials shall be removed from buildings prior to demolition in accordance with DOSH regulations. If required, the completion of the abatement activities shall be documented by a qualified environmental professional(s) and submitted to the County for review with applications for issuance of construction and demolition permits. (LTS)

Implementation of this mitigation measure will reduce this impact to a less-than-significant level.

(3) School Hazardous Materials Conflicts. As described above, no significant emissions of hazardous materials would be anticipated during construction or operation of the proposed project. The project site is located within the Rescue Union School District and the El Dorado Union High School District.[27] Jackson Elementary, 2561 Francisco Drive, and Pleasant Grove Middle School, 2540 Green Valley Road, are the closest schools to the project site, and are both located more than one-quarter mile from the project site. No potential hazards associated with emissions of hazardous materials within one-quarter mile of a school would result from the project.

(4) Hazardous Materials Release Sites. Government Code Section 65962.5 requires the Cal/EPA to develop at least annually an updated list of hazardous materials release sites known as the Cortese List. The project site and nearby properties were not identified on the Cortese List or other hazardous material release databases during review of regulatory records for the 2011 Phase I ESA.[28]

Current hazardous material release site records were reviewed online using the State Water Board Geotracker[29] and the DTSC Envirostor[30] databases. The County does not maintain a database of hazardous materials release sites. The review found that properties at and near the project site were not identified on any hazardous materials release sites. Therefore, no impacts associated with hazardous materials release sites would result from the project.

(5) Emergency Response and Evacuation Plans. The proposed project involves a residential subdivision on contiguous parcels and would not impair implementation of or interfere with the County Multi-Jurisdictional Hazard Mitigation Plan. No other emergency response or evacuation plans are known to exist in the vicinity of the project site. County General Plan Policy

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[27] El Dorado County, 2013. Office of Education. *District Boundaries.* Website: www.edcoe.k12.ca.us/districts/districtmapping.html (accessed July 26, 2013).

[28] Youngdahl Consulting Group, Inc., 2011a, *op cit.*

[29] State Water Board, 2013. Geotracker website: geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=Green+Valley+Road+El+Dorado (accessed 26 July 2013).

[30] California Department of Toxic Substances Control, 2013. Envirostor website: www.envirostor.dtsc.ca.gov (accessed July 26, 2013).

6.2.3.2 requires that project design allow for adequate emergency vehicle access and private vehicle evacuation. The El Dorado Hills Fire Department has indicated that the project will be required to maintain adequate emergency access throughout construction and project phasing and must maintain proposed emergency vehicle access roadways.[31] No impact to emergency response or evacuation plans would result from the project.

(6) Wildland Fires. The project site is located in an area of moderate wildfire hazard risk. In accordance with state requirements and General Plan Policy 6.2.2.2, a Wildland Fire Safe Plan has been prepared for the proposed project.[32] The Wildland Fire Safe Plan identifies measures to reduce hazards and risks associated with wildland and urban fires for protection of life, property, and native vegetation. In addition, the project would also be required to conform to the California Fire Code, Uniform Building Code, and other applicable state and local fire district standards. Any proposed fire suppression systems would be reviewed by the El Dorado Hills County Water District (District) to ensure the design meets District standards. Compliance with fire protection requirements and applicable building codes would reduce any potential hazard or risk from wildland fires to a less-than-significant level.

c. Cumulative Impacts. Past, present, and reasonably foreseeable future development within El Dorado County would not compound or increase environmental impacts related to hazards and hazardous materials. Hazards and hazardous materials impacts are generally site-specific and/or have limited mobility, and would not be expected to have cumulatively considerable effects beyond the project site. Construction activities could increase the potential exposure of persons to hazardous materials, including hazardous buildings materials; however, the use, storage, and disposal of hazardous materials are regulated by federal, State, and local laws and regulations. The handling of hazardous materials at the project site would be subject to these laws and regulations, and as a result the cumulative hazardous materials risks would not be significant. Therefore, implementation of the proposed project, in combination with other past, present, and reasonably probable future projects, would not result in any significant cumulative hazards and hazardous materials impacts. The impact, therefore, would be less than significant.

[31] El Dorado Hills Fire Department, 2013. A11-0006/Z11-0008/PD11-006 & TM11-1505 Revised Dixon Ranch letter. June 7.

[32] CDS Fire Prevention Planning, 2013. *Dixon Ranch Wildland Fire Safe Plan*. Revised July 22.

L. UTILITIES

This section describes the utility systems (water, wastewater, solid waste, energy, and telecommunications) serving the project site and identifies the potential impacts to utilities that could result from implementation of the proposed project. Mitigation measures are recommended, as appropriate.

1. Setting

This section addresses the following utilities: water supply, treatment, and distribution; wastewater collection, treatment, and disposal; solid waste; and energy and telecommunications.

a. Water Service. The following discussion provides background information on water supply, water treatment facilities, and the water distribution system. Most of the information in this section is based on El Dorado Irrigation District's (EID) Urban Water Management Plan 2010 Update[1] and SB 610 Water Supply Assessment for the Dixon Ranch Residential Project (WSA) prepared for and approved by EID as the public water system supplier for the project.[2] The WSA prepared for and approved by EID is included as Appendix F of this EIR. Current water use at the project site consists of three existing domestic water wells. The water wells have historically been used to serve residential uses and grazing operations on the property.

(1) Water Supply. El Dorado Irrigation District maintains two primary interconnected water systems in its contiguous service area: the El Dorado Hills system and the Western/Eastern system, along with a separate recycled water system. The El Dorado Hills water system obtains its primary supplies under rights and entitlements from Folsom Reservoir. The Western/Eastern system derives its supplies from sources under rights and entitlements emanating from further up the American River watershed and the Cosumnes River watershed. The recycled water system uses treated wastewater from the El Dorado Hills wastewater treatment plant and the Deer Creek wastewater treatment plant.

The water assets can be further categorized by the service area they primarily serve and the treatment plant they flow through. Water derived from Folsom Reservoir is delivered to the El Dorado Hills water treatment plant and serves the El Dorado Hills area. Water derived from upstream American River watershed diversions and storage reservoirs generally use the Reservoir 1 Water Treatment Plant while the Cosumnes River diversions use Reservoir A Water Treatment Plant to serve the Western/Eastern area. Water assets from these upstream diversions can be delivered by gravity feed to the El Dorado Hills area, but assets from Folsom Reservoir are not delivered outside the El Dorado Hills area due to infrastructure limitations.

EID's treated water supplies identified for the proposed project are derived from a number of water rights and entitlements as detailed in Table IV.L-1. The maximum available water assets column in Table IV.L-1 does not account for other hydrological, technical, regulatory, and contractual limitations that apply to the water assets for normal year and dry year deliveries. These issues are addressed in the other two columns in the table. EID's water assets available for the proposed project include

[1] El Dorado Irrigation District, 2011. *Urban Water Management Plan 2010 Update*. July.

[2] Tully & Young, 2013. *El Dorado Irrigation District SB 610 Water Supply Assessment for the Dixon Ranch Residential Project,* August 26.

water rights and entitlements that EID currently has in its possession and planned water rights and entitlements that it will control in the future.

Table IV.L-1: Water Rights, Entitlements, and Supply Availability

Water Right or Entitlement	Maximum Water Assets Available (Ac-ft)	Normal Year Planned Supply Availability (Ac-ft)	Dry-Year Planned Supply Availability (Ac-ft)
License 2184 and pre-1914 ditch rights including Warren Act Contract 06-WC-20-3315	4,560	4,560	3,000
Licenses 11835 and 11836	33,400	23,000	20920[A]
CVP Contract 14-06-200-1375A-LTR1	7,550	7,550	5,660
Pre-1914 American River diversion and storage rights	15,080	15,080	15,080
Permit 21112	17,000	17,000	17,000
Subtotal Existing	**77,590**	**67,190**	**61,660**
Central Valley Project Fazio water entitlement (PL 101-514 (1990) Fazio) [D]	7,500	7,500	5,625
Applications 5645X12, 5644X02 and partial assignment of Applications 5645, 5644 with El Dorado-SMUD Cooperation Agreement [E]	40,000[B]	30,000	5,000[C]
Subtotal Planned	**47,500**	**37,500**	**10,625**
Recycled Water	5,600	5,600	5,600
Total	**130,690**	**110,290**	**77,885**

[a] This is the modeled safe-yield of this water right during a single dry year. For planning purposes, the second and third dry years of a three-year dry period are assumed to be 17,000 acre-feet, and 15,500 acre-feet respectively.
[b] Section 5.1.1 of the el Dorado SMUD Cooperation Agreement indicates that 40,000 acre-feet of SMUD water will be available after 2025. For conservative Normal Year planning purposes, the District uses 30,000 acre-feet of available supply.
[c] Available supply is 15,000 acre-feet in a single dry year but in preparing for multiple dry years, EID anticipates using only 5,000 acre-feet per year for a three-year period.
[d] Available starting in 2015.
[e] Available starting in 2025.

Source: Tully & Young, 2013. Dixon Ranch Residential Project Water Supply Assessment. August 26.

Water that would serve the project site would be derived from both Folsom Reservoir and upstream American River and Cosumnes River diversions. As shown in Table IV.L-1, the primary water assets for diversion at Folsom Reservoir are: CVP Contract 14-06-200-1375A-LTR1, and License 2184 and several pre-1914 water rights incorporated into Warren Act contract 06-WC- 20-3315. These assets are reasonably certain to be available to serve the project because EID holds the rights to these supplies.

EID is also seeking to finalize its Warren Act contract for diversions of Permit 21112 at Folsom Reservoir. In order to perfect this right, EID must put all of its water assets under the permit to beneficial use. Upon putting the water to beneficial uses and meeting all of the other conditions in the water right permit, EID will be eligible to obtain a water right license for this appropriate water right. Attaining a water right license further fortifies the legitimacy of the water right for EID's continual use in the future. There is no indication that EID will have difficulty in obtaining a water right license

for Permit 21112; therefore, this source is considered a reasonably certain water supply to serve the proposed project and EID's other demands.

EID is also pursuing additional water assets under the El Dorado – SMUD Cooperation Agreement and a Central Valley Project water entitlement derived from El Dorado County Water Agency's Fazio water supply. Because EID has not yet secured these water assets, for the purposes of this impact analysis, these potential supplies are considered "planned" water supplies.

Each of these existing and planned water assets are further described in the WSA included as Appendix F to this report.

(2) Water Treatment Facilities. The three primary water treatment plants and related subsystems in the EID system include: 1) Reservoir 1 Water Treatment Plant and El Dorado Forebay Subsystem; 2) Reservoir A Water Treatment Plant and Jenkinson Lake Subsystem; and 3) El Dorado Hills Water Treatment Plant and Folsom Reservoir Subsystem. Table IV.L-2 describes each water treatment facility's treatment process, capacity, and conveyance process.

(3) Water Distribution System and Facilities. The EID water conveyance system is a combination of pipelines, regulating reservoirs, diurnal storage tanks, and a few Gold Rush Era ditches. The piped potable system consists of 1,250 miles of pipe ranging in size from 2 inches to 48 inches. The EID has 27 miles of ditches, 5 water treatment plants, 37 pumping stations, and a total of 36 tanks with a combined storage capacity of 109 million gallons (mg).

In addition to a potable water system, the EID operates a recycled water system that provides tertiary treated recycled water from the El Dorado Hills Wastewater Treatment Plant (EDHWWTP) and the Deer Creek Wastewater Treatment Plant (DCWWTP) to serve portions of the service area to the west bordering Sacramento County. EID currently does not use groundwater as a supply source. EID owns two wells in the Swansboro community north of the South Fork American River; however, they are physically disconnected from the system.[3]

The proposed project would likely connect to an existing 8-inch water line located on Lima Way to the west, to an existing 10-inch water line at the intersection of Clarksville Road and Greenview Drive to the south, and/or to an existing 12-inch water line at Green Valley Road to the east.[4]

[3] El Dorado Irrigation District, 2011. *Urban Water Management Plan 2010 Update*. July.

[4] CTA Engineering and Surveying, 2013. Dixon Ranch Subdivision Offsite Sewer and Water Exhibit-Preferred Alternative (Map). March.

Table IV.L-2: Water Treatment Facilities Characteristics

Water Treatment Facility	Treatment Process	Capacity	Conveyance
Reservoir A Water Treatment Plant and Jenkinson Lake Subsystem	Treats water from Jenkinson Lake. Treatment processes include a raw water intake, chemical addition, rapid mix vault, dual-media gravity filters, and chlorination. Filter backwash wastewater is piped to an equalization basin and pumped to settling/drying beds.	Supplies up to 64 mgd of potable water to customers	Water is treated and conveyed to Reservoir A. A small portion of the finished water is pumped to the Sly Park Hills Pressure Zone where the water is used to serve customers at higher elevations. From Reservoir A, water is distributed based on system demands northwest into Reservoirs 2 and 2A in the El Dorado Forebay subsystem via the Camino Conduit, and southwesterly via the Pleasant Oak Main. Water flowing in the Pleasant Oak Main is conveyed through Reservoirs B and C. Water leaving Reservoir C flows westerly to Reservoir 7, where it enters the Diamond Springs Main (DSM). The DSM conveys water in a westerly direction through the Diamond Springs, El Dorado, Logtown, Shingle Springs, and Cameron Park service zones and terminates at Reservoir 12 located east of Cameron Park.
Reservoir 1 Water Treatment Plant and El Dorado Forebay Subsystem	Treats water from the South Fork American River via Forebay Reservoir Treatment process includes a manually-cleaned trash screen, automatically-cleaned bar screen, flocculation tanks, sedimentation basin, dual-media gravity filter, and chlorination.	Supplies up to 26 mgd of potable water to customers throughout the service area.	Raw water is diverted at the El Dorado Forebay where it travels through 3 miles of open ditch to the Reservoir 1 Water Treatment Plant. Water is stored in the adjacent Reservoir 1 storage reservoir which then flows by gravity to Reservoir 2/2A and the Town of Camino, or is pumped to the Pollock Pines Reservoir to customers at higher elevations. From Reservoir 2/2A, El Dorado Main (EDM) 1 and 2 continues westward conveying water through Placerville into the Gold Hill area. Prior to reaching the Gold Hill area, three major storage facilities (Reservoirs 3, 4, and 5) are situated along EDM 1 and EDM 2. EDM 2 begins at Reservoir 2A in Camino and extends in a westerly direction, generally following the alignment of EDM 1. EDM 2 also terminates in the Gold Hill area. Reservoir 2A is supplied from the Jenkinson Lake subsystem via the Camino Conduit and the Forebay Subsystem via the Moosehall Transmission Main. The Gold Hill Intertie (GHI) connects to EDM 2 in the Gold Hill area and extends to the El Dorado Hills area along Green Valley Road. This pipeline provides water to the Cameron Park/Shingle Springs service zones. “Leg A” of the GHI connects with the DSM and extends from Green Valley Road to Reservoir 12. Another extension of the GHI, the AD3 Conduit extends from Bass Lake Road to the Bass Lake Tanks and to the Oakridge Tanks in the El Dorado Hills service zone.

Table IV.L-2: Water Treatment Facilities Characteristics

Water Treatment Facility	Treatment Process	Capacity	Conveyance
El Dorado Hills Water Treatment Plant and Folsom Reservoir Subsystem	Treats raw water from Folsom Reservoir to supply potable water to the El Dorado Hills service zone. Treatment processes include raw water pumping, chemical addition facilities, includes storage, chemical addition, and plate settlers.	An expansion of the EDHWTP has recently been completed to increase the plant's rated capacity from 19.5 to 26.0 mgd.	A series of high service water pumps distribute potable water to the distribution system.

mgd = million gallons per day

Source: El Dorado Irrigation District, 2011. *Urban Water Management Plan 2010 Update.*

(4) Regulatory Setting. The following section describes the federal, State, and local water supply regulatory framework.

Federal Regulations. The following described federal water regulations.

Safe Drinking Water Act. The Safe Drinking Water Act (SDWA) of 1974 gave the United States Environmental Protection Agency (U.S. EPA) the authority to set standards for contaminants in drinking water supplies. The U.S. EPA was required to establish primary regulations for the control of contaminants that affected public health and secondary regulations for compounds that affect the taste, odor, and aesthetics of drinking water. Under the provisions of SDWA, the California Department of Health Services (DHS) has the primary enforcement responsibility. Title 22 of the California Administrative Code establishes DHS authority, and stipulates state drinking water quality and monitoring standards.

State Regulations. The following describes state water regulations.

Urban Water Management Planning Act. In 1983, the California Legislature enacted the Urban Water Management Planning Act (Water Code Sections 10610–10656). The act requires that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 AFY, prepare and adopt an Urban Water Management Plan (UWMP). Water suppliers are to prepare a UWMP within a year of becoming an urban water supplier and update the plan at least once every 5 years. The act also specifies the content that is to be included in an UWMP. It is the intention of the legislature to permit levels of water management planning commensurate with the number of customers served and the volume of water supplied. The act states that urban water suppliers should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple-dry years. The act also states that the management of urban water demands and the efficient use of water shall be actively pursued to protect both the people of the state and their water resources.

Senate Bill 610 and SB 221. In 2003, Senate Bill (SB) 610 and SB 221 were signed into law by Governor Gray Davis. SB 610 requires public water systems that supply water to proposed projects determine whether the projected water demand (associated with the proposed project) could be met when existing and planned future uses are considered. For the purposes of SB 610, Water Code Section 10912 (a)(2) requires all projects with a water demand equivalent to 500 or more dwelling units, or which include over 250,000 square feet of commercial office building, to obtain a Water Supply Assessment (WSA). In addition, SB 610 requires a quantification of water received by the water provider in prior years from water rights, water supply entitlements, and water service contracts. Under SB 221, approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply.

The Water Conservation Act of 2009 (Senate Bill x7-7 (2009). Senate Bill x7-7 (SBx7-7) requires all water suppliers to increase water use efficiency. SBx7-7 mandates the reduction of per capita water use and agricultural water use throughout the state by 20 percent by 2020.

Local Policies. The following describes local water policies and regulations.

El Dorado Irrigation District Urban Water Management Plan. Updated every five years in accordance with California's Urban Water Management Act, the EID UWMP provides an overview of EID's water supply sources and usage, recycled water, and conservation programs. The most recently adopted plan is the 2010 UWMP Update (July 2011).

El Dorado Irrigation District Board Policy 5010. EID Board Policy 5010 – Water Supply Management states that the District will not issue any new water meters if there is insufficient water supply.

El Dorado Irrigation District Board Policies 9020 and 9021. EID Board Policy 9020 – Establishing New Service and Administrative Regulation, and EID Board Policy 9021 – Eligibility for New Service, outline the process an applicant must comply with in order to purchase a water meter. As part of the application process for a project, an applicant must request a Facility Improvement Letter (FIL) from the District, which describes the existing system and any improvements that will be needed in order to receive service. For more complicated projects, the applicant must have a licensed engineer prepare a Facility Plan Report (FPR) for District review and approval. The FIL and FPR both assess the adequacy of the water system to provide service to the applicant and thereby identify the necessary improvements that must be constructed prior to the issuance of water meters. These facility improvements range from distribution facilities that must be funded and constructed by the developer, to District financed capital improvement projects such as transmission mains and storage tanks.

The applicant can receive service only when the required facilities are completed and accepted by the District. These regulations and service procurement procedures, coupled with the guidelines in this report of meter availability, provide a solid basis to ensure that both adequate supply and infrastructure are in place to serve existing and new connections throughout the District.

County of El Dorado General Plan. The County of El Dorado General Plan includes the following policies and programs related utilities and infrastructure.

- *Goal 5.1: Provision of Public Services*. Provide and maintain a system of safe, adequate, and cost-effective public utilities and services; maintain an adequate level of service to existing development while allowing for additional growth in an efficient manner; and, ensure a safe and adequate water supply, wastewater disposal, and appropriate public services for rural areas.
- Policy 5.1.2.1: Prior to the approval of any discretionary development, the approving authority shall make a determination of the adequacy of the public services and utilities to be impacted by that development. Where, according to the purveyor responsible for the service or utility as provided in Table 5-1, demand is determined to exceed capacity, the approval of the development shall be conditioned to require expansion of the impacted facility or service to be available concurrent with the demand, mitigated, or a finding made that a CIP project is funded and authorized which will increase service capacity.
- Policy 5.1.2.2: Provision of public services to new discretionary development shall not result in a reduction of service below minimum established standards to current users, pursuant to Table 5-1.

  The following Levels of Service shall apply to the review of discretionary projects.

TABLE 5-1 MINIMUM LEVELS OF SERVICE

	Community Region	Rural Center and Rural Region
Public water source	As determined by purveyor	As determined by purveyor, when applicable
Private wells	Environmental Management	Environmental Management
Public water treatment capacity	As determined by purveyor	As determined by purveyor
Public sewer treatment capacity	As determined by purveyor	As determined by purveyor
On-site sewage disposal	Environmental Management	Environmental Management
Storm drainage	Transportation Division	Transportation Division
Solid waste	Environmental Management	Environmental Management
Country and State road circulation system	LOS E	LOS D
Schools	As determined appropriate by the school districts	As determined appropriate by the school districts
Parks	Specific plan for new communities or Quimby Fee/dedication program for tentative maps	Quimby Fee/dedication program for tentative maps
Fire district response	8-minute response to 80% of the population	15 to 45-minute response
Sheriff	8-minute response to 80% of the population	No standard
Ambulance	10-minute response to 80% of the population	20-minute response in Rural Regions and "as quickly as possible" in wilderness areas*

*In accordance with State standards

- Policy 5.1.2.3: New development shall be required to pay its proportionate share of the costs of infrastructure improvements required to serve the project to the extent permitted by State law. Lack of available public or private services or adequate infrastructure to serve the project which cannot be satisfactorily mitigated shall be grounds for denial of any project or cause for the reduction of size, density, and/or intensity otherwise indicated on the General Plan land use map to the extent allowed by State law.
- *Objective 5.2.1: County-wide Water Resources Program*. Establish a County-wide water resources development and management program to include the activities necessary to ensure adequate future water supplies consistent with the General Plan.
- Policy 5.2.1.2: An adequate quantity and quality of water for all uses, including fire protection, shall be provided for with discretionary development.
- Policy 5.2.1.3: All medium-density residential, high-density residential, multifamily residential, commercial, industrial and research and development projects shall be required to connect to public water systems when located within Community Regions and to either a public water system or to an approved private water systems in Rural Centers.
- Policy 5.2.1.4: Rezoning and subdivision approvals in Community Regions or other areas dependent on public water supply shall be subject to the availability of a permanent and reliable water supply.
- Policy 5.2.1.6: Priority shall be given to discretionary developments that are infill or where there is an efficient expansion of the water supply delivery system.
- Policy 5.2.1.7: In times of declared water shortages, the Board of Supervisors shall give priority within the affected water district to approving affordable housing and non-residential development projects.

- Policy 5.2.1.9: In an area served by a public water purveyor or an approved private water system, the applicant for a tentative map or for a building permit on a parcel that has not previously complied with this requirement must provide a Water Supply Assessment that contains the information that would be required if a water supply assessment were prepared pursuant to Water Code section 10910. In order to approve the tentative map or building permit for which the assessment was prepared the County must (a) find that by the time the first grading or building permit is issued in connection with the approval, the water supply from existing water supply facilities will be adequate to meet the highest projected demand associated with the approval on the lands in question; and (b) require that before the first grading permit or building permit is issued in connection with the approval, the applicant will have received a sufficient water meters or a comparable supply guarantee to provide adequate water supply to meet the projected demand associated with the entire approval. A water supply is adequate if the total entitled water supplies available during normal, single, dry, and multiple dry years within a 20-year projection will meet the highest projected demand associated with the approval, in addition to existing and 20-year projected future uses within the area served by the water supplier, including but not limited to, fire protection, agricultural, and industrial uses, 95% of the time, with cutbacks calculated not to exceed 20% in the remaining 5% of the time.
- Policy 5.2.1.10: The County shall support water conservation and recycling programs and projects that can reduce future water demand consistent with the policies of this General Plan. The County will develop and implement a water use efficiency program for existing and new residential, commercial/industrial, and agricultural uses. The County will also work with each of the county's water purveyors to develop a list of the type of uses that must utilize reclaimed water if feasible. The feasibility of using reclaimed water will be defined with specific criteria developed with public input and with the assistance of the El Dorado Irrigation District (EID), and will be coordinated with their ongoing reclaimed water (also referred to as recycled water) planning and implementation process. The County shall encourage all water purveyors to implement the water conservation-related Best Management Practices already implemented by EID and in compliance with the related criteria established by USBR.
- Policy 5.2.1.11: The County shall direct new development to areas where public water service already exists. In Community Regions, all new development shall connect to a public water system. In Rural Centers, all new development shall connect either to a public water system or to an approved private water system.
- *Objective 5.2.3: Groundwater Systems*. Demonstrate that water supply is available for proposed groundwater dependent development and protect against degradation of well water supplies for existing residents.
- Policy 5.2.3.4: All applications for divisions of land and other discretionary or ministerial land uses which rely on groundwater for domestic use, or any other type of use, shall demonstrate that groundwater is adequate as part of the review and approval process. The County shall not approve any discretionary or ministerial projects unless the County finds, based on evidence provided by the applicant, or other evidence that may be provided, that the groundwater supply for the project in question is adequate to meet the highest demand associated with the approval in question.
- *Goal 5.3: Wastewater Collection and Treatment*. An adequate and safe system of wastewater collection, treatment, and disposal to serve current and future County residents.
- *Objective 5.3.1: Wastewater Capacity*. Ensure the availability of wastewater collection and treatment facilities of adequate capacity to meet the needs of multifamily, high-, and medium-density residential areas, and commercial and industrial areas.
- Policy 5.3.1.1: High-density and multifamily residential, commercial, and industrial projects shall be required to connect to public wastewater collection facilities as a condition of approval except in Rural Centers and areas designated as Platted Lands (-PL). In the Community Region of

Camino/Pollock Pines, the long term development of public sewer service shall be encouraged; however, development projects will not be required to connect to wastewater collection facilities where such connection is infeasible, based on the scale of the project. (Res. No. 298-98; 12/8/98)

- Policy 5.3.1.7: In Community Regions, all new development shall connect to public wastewater treatment facilities. In Community Regions where public wastewater collection facilities do not exist project applicants must demonstrate that the proposed wastewater disposal system can accommodate the highest possible demand of the project.
- *Goal 5.5: Solid Waste*. A safe, effective and efficient system for the collection and processing of recyclable and transformable materials and for the disposal of residual solid wastes which cannot otherwise be recycled or transformed.
- *Objective 5.5.1: Integrated Waste Management Program*. Comply with El Dorado County Integrated Waste Management program which complies with the intent and requirements of the California Public Resources Code, Division 30, Waste Management.
- *Objective 5.5.2: Recycling, Transformation, and Disposal Facilities*. Ensure that there is adequate capacity for solid waste processing, recycling, transformation, and disposal to serve existing and future users in the County.
- Policy 5.5.2.1: Concurrent with the approval of new development, evidence will be required that capacity exists within the solid waste system for the processing, recycling, transformation, and disposal of solid waste.
- Policy 5.5.2.3: The County shall adopt a Construction and Demolition Debris Diversion Ordinance requiring that a minimum of 50 percent of the debris from construction and demolition projects be reused or recycled. The County shall encourage a higher rate of diversion.
- *Goal 5.6: Gas, Electric, and Other Utility Services*. Sufficient utility service availability consistent with the needs of a growing community.
- *Objective 5.6.1: Provide Utility Services*. Community Regions shall be provided with adequate and reliable utility services such as gas, electricity, communication facilities, satellite and/or cable television, and water distribution facilities, while recognizing that levels of service will differ between Community Regions, Rural Centers, and Rural Regions.
- Policy 5.6.1.1: Promote and coordinate efforts with utilities for the undergrounding of existing and new utility distribution lines in accordance with current rules and regulations of the California Public Utility Commission and existing overhead power lines within scenic areas and existing Community Regions and Rural Centers.
- Policy 5.6.1.2: Reserve adequate rights-of-way to facilitate expansion of services in a timely manner.
- Policy 5.6.1.4: Special use permits shall be required for the installation of community telecommunication facilities (e.g., microwave towers) in residential areas to ensure that siting, aesthetics, environmental issues, surrounding land uses, and health and safety are considered.

b. Wastewater. The following provides background information on the wastewater system, including collection, treatment and recycled water.

(1) Wastewater System. The following discussion provides background information on the County's wastewater collection and treatment system, including information from the Urban Water Management Plan 2010 Update and the EID Wastewater Facilities Master Plan.[5]

[5] HDR, 2013. *Wastewater Facilities Master Plan, El Dorado Irrigation District*, July 31.

(2) Wastewater Collection. The EID has five wastewater service areas. The three largest service areas of El Dorado Hills, Deer Creek, and Motherlode are served by a series of lift stations, force mains, and gravity mains, which convey sewage to either the El Dorado Hills Wastewater Treatment Plant (EDHWWTP) or the Deer Creek Wastewater Treatment Plant (DCWWTP). Sewage from the El Dorado Hills service area flows to the EDHWWTP, and sewage from both the Deer Creek and Motherlode service areas flow to the DCWWTP.[6] The project site is located within the El Dorado Hills service area.

The EDHWWTP is located approximately 1.25 miles south of Highway 50 directly adjacent to Latrobe Road, and situated along a hillside with both Carson Creek and Latrobe Road bordering the plant to the west, and a 66 million gallon (mg) storage pond bordering the plant to the east. The El Dorado Hills wastewater system serves an area of approximately 24.9 square miles and is located between the western El Dorado County boundary and Bass Lake Road. The collection system consists of 34 lift stations and approximately 192 miles of pipeline comprised of 180 miles of gravity sewers and 12 miles of force mains. The average dry weather flow (ADWF) capacity at EDHWWTP is 4 mgd.[7] The EDHWWTP 2012 average dry weather flow was 2.17 mgd.[8]

(3) Wastewater Treatment and Disposal. Treated effluent is either recycled or discharged to Carson Creek, a tributary to the Cosumnes River. The EDHWWTP typically discharges to Carson Creek between November and April and distributes all treated effluent to the recycled water system between May and October. According to 2010 records, approximately 43 percent of the treated effluent produced at the EDHWWTP was sent to the recycled water system for reuse. Disinfected, tertiary treated recycled water produced at the EDHWWTP is distributed for irrigation of residential and commercial landscapes and also for use in construction.[9]

(4) Recycled Water. In 2004, the EID Board of Directors mandated the use of recycled water for all new subdivisions and developments in the recycled water service area. EID produces recycled water at both EDHWWTP and DCWWTP, which is then used by EID customers for irrigation of residential landscape, commercial landscape, recreation turf and in a few areas for fire suppression and dust control.[10] Currently, the EDHWWTP and DCWWTP produce more than 1 billion gallons of recycled water each year for almost 4,000 customers and businesses in the El Dorado Hills community.[11]

The availability of recycled water is currently limited to the El Dorado Hills and Cameron Park areas.[12] The EID recycled water system consists of supply from EDHWWTP and DCWWTP, an interconnected network of transmission and distribution pipelines, pump stations, storage tanks,

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[6] El Dorado Irrigation District, 2011. *Urban Water Management Plan 2010 Update*. July.

[7] Ibid.

[8] HDR, 2013, op. cit.

[9] El Dorado Irrigation District, 2011, op. cit.

[10] Ibid.

[11] El Dorado Irrigation District, 2013. *Recycled Water*. Website: www.eid.org/index.aspx?page=117 (accessed January 9).

[12] El Dorado Irrigation District, 2011, op. cit.

pressure reducing stations, and facilities located within the communities of El Dorado Hills and Cameron Park.[13] The project site is not identified within the recycled water service area.[14]

Daily wastewater influent flows and the 66 mg recycled water storage reservoir limit current recycled water supplies to approximately 3,500 acre feet per year (afy). In the future, when the EDHWWTP and DCWWTP operate at their estimated buildout of 5.7 and 5.0 mgd, respectively, dry season influent flows and the 66 mg reservoir are estimated to limit daily recycled water supplies to approximately 4,100 afy.[15]

c. Solid Waste. The following discussion provides background information on the County's solid waste services, including information from the California Department of Resources, recycling and Recovery, El Dorado Hills Community Services District, and El Dorado County Solid Waste Management Plan.[16]

(1) Non-Hazardous Solid Waste. The El Dorado Hills Community Services District (EDHCSD) contracts with El Dorado Disposal Service, a Wastes Connections Company, for franchised solid waste collection, disposal, and recycling services. El Dorado Disposal Service is located at 4100 Throwita Way, in Diamond Springs. Services include curbside garbage, recycling, and yard trimmings pickup from homes, businesses, and schools. El Dorado Disposal Service transports waste to the Western El Dorado Recovery Systems (WERS) Transfer Station and Material Recovery Facility, located at 4100 Throwita Way in Placerville. The WERS Transfer Station and Material Recovery Facility handles mixed municipal waste and has a maximum permitted throughput of 400 tons per day.[17] After undergoing processing, non-recyclable waste from the WERS Transfer Station and Material Recovery Facility are delivered to the Potrero Hills Landfill, located at 3675 Potrero Hills Lane, in Suisun City. The landfill handles agricultural, ash, construction and demolition, industrial, mixed municipal, sludge, and tire waste.[18] The Potrero Hills Landfill has a maximum permitted capacity of 83.1 million cubic yards and as of the year 2006, a remaining estimated capacity of approximately 13.872 million cubic yards, or 16.7 percent of the landfill's total capacity. The landfill receives a maximum disposal of 4,330 tons per day and is anticipated to have sufficient capacity until 2048.[19]

(2) Regulatory Framework. The following section describes the state and local solid waste regulatory framework.

California Integrated Waste Management Act (AB 939). In 1989, the California Legislature enacted the California Integrated Waste Management Act (AB 939), which requires the diversion of

[13] Ibid.

[14] HDR, 2013. *Wastewater Facilities Master Plan, El Dorado Irrigation District*, Figure ES-2, July 31.

[15] Ibid.

[16] NewPoint Group, 2012. *El Dorado County Solid Waste Management Plan. Volume I, Executive Summary*. January 31.

[17] California Department of Resources Recycling and Recovery (CalRecycle), 2013. Solid Waste Information System (SWIS), Facility/Site Search. Website: www.calrecycle.ca.gov/SWFacilities/Directory/Search.aspx (accessed January 9).

[18] Ibid.

[19] Ibid.

waste materials from landfills in order to preserve landfill capacity and natural resources. Cities and counties in California were required to divert 25 percent of solid waste by 1995, and 50 percent of solid waste by the year 2000. AB 939 further requires every city and county to prepare two documents demonstrating how the mandated rates of diversion will be achieved. The Source Reduction and Recycling Element (SRRE) must describe the chief source of the jurisdiction's waste, the existing diversion programs, and current rates of waste diversion and new or expanded diversion programs. The Household Hazardous Waste Element (HHWE) must describe each jurisdiction's responsibility in ensuring that household hazardous wastes are not mixed with non-hazardous solid wastes and subsequently deposited at a landfill. In 2010, El Dorado County had diverted approximately 65 percent of its solid waste and had met the requirements of the California Integrated Waste Management Act.[20] Locally, EDHCSD diverted 55.7 percent of its solid waste by mid-2011.[21]

El Dorado County Construction and Demolition Debris Recycling Ordinance. The El Dorado County Construction and Demolition Debris Recycling Ordinance[22] establishes a program for the recycling and salvage of construction and demolition debris. The ordinance requires at least 50 percent of the debris from construction and demolition project with structure footprints exceeding 5,000 square feet to be diverted from landfills through recycling practices. Prior to the issuance of a permit, the project applicant must file a Debris Recycling Acknowledgment (DRA) with the County's Environmental Management Division. A Debris Recycling Report (demonstrating compliance with the 50 percent diversion goal) must be filed within 60 days after final and/or occupancy approval. If the Debris Recycling Report is not filed or approved within two years of the date the DRA was filed, the project applicant would be required to submit a Performance Securities with subsequent DRAs.[23]

d. Energy and Telecommunications. The following discussion provides background information on energy and telecommunications.

(1) Energy. The Pacific Gas & Electric Company (PG&E) provides electricity and natural gas service to the El Dorado Hills community. PG&E charges connection and user fees for all new development, in addition to sliding rates for electrical and natural gas service based on use.

Gas supplies in northern California come primarily from gas fields in the Sacramento Valley.[24] However, PG&E produces much of its energy from renewable sources and has plans in place to increase reliance on renewable energy sources. Of the energy provided to PG&E customers in 2010, approximately 16 percent came from renewable resources. In 2010, 24 percent of energy provided to PG&E customers came from nuclear generation; 23 percent was from unspecified sources; 20 percent

[20] NewPoint Group, 2012, op. cit.

[21] El Dorado Hills Community Services District, 2011. *AB 939 Diversion Report, Source Reduction and Recycling.* August 3.

[22] El Dorado County, 2003. *El Dorado County Ordinance Code, Chapter 8.43, Construction and Demolition Debris Recycling within the County of El Dorado.*

[23] El Dorado County, 2013. Environmental Management Department Solid Waste Program, Construction and Demolition Debris Recycling, *Guidelines for Construction and Demolition Debris Recycling within the County of El Dorado*. Website: www.edcgov.us/Government/EMD/SolidWaste/Construction_and_Demolition_Debris_Recycling.aspx (accessed January 9).

[24] California Gas and Electric Utilities, 2011. *2010 California Gas Report.* Website: www.pge.com/pipeline/library/regulatory/cgr_index.shtml (accessed November 8).

was from natural gas; 16 percent was from large hydroelectric facilities; and 16 percent was from renewable resources (e.g., wind, geothermal, biomass, small hydroelectric sources, and solar); and less than 2 percent came from coal and other fossil fuels.[25] In addition, PG&E has plans to increase the use of renewable power. For instance, PG&E purchases power from customers that install small-scale renewable generators (e.g., wind turbines or photovoltaic cells) up to 1.5 megawatts in size.[26]

Because many agencies in California have adopted policies seeking increased use of renewable resources (and have established minimum standards for the provision of energy generated by renewable resources), it is expected that PG&E will continue to meet future demand for energy via an increasing reliance on renewable resources, including small-scale sources such as photovoltaic panels and wind turbines, in addition to larger-scale facilities, such as wind farms.

The PG&E electric system is designed to deliver safe and reliable energy to customers throughout Northern and Central California. PG&E produces or buys its energy from a mix of conventional and renewable generating sources, which travel through PG&E's electric transmission and distribution systems.[27]

The PG&E gas transmission pipeline system serves approximately 4.2 million gas customers in northern and central California. The system is operated under an inspection and monitoring program. The system operates in real time on a 24-hour basis, and includes leak inspections, surveys, and patrols of the pipelines. A new program, the Pipeline 2020 program, aims to modernize critical pipeline infrastructure, expand the use of automatic or remotely-operated shut-off valves, catalyze development of next-generation inspection technologies, develop industry-leading best practices, and enhance public safety partnerships with local communities, public officials, and first responders.

Regulatory requirements for efficient use of electricity and gas are contained in Title 24, Part 6, of the California Code of Regulations, entitled "Energy Efficiency Standards for Residential and Nonresidential Buildings." These regulations specify the State's minimum energy efficiency standards and apply to new construction of both residential and nonresidential buildings. The standards regulate energy consumed for heating, cooling, ventilation, water heating, and lighting. Compliance with these standards is verified and enforced through the local building permit process.

(2) Telecommunications. The EDHCSD provides and manages a franchise agreement with Comcast Cable to provide cable television services to most areas within EDHCSD boundaries. AT&T cable is also provided to El Dorado Hills residents through a franchise managed by the State.[28]

Comcast and AT&T provide or host a variety of other telecommunication services, such as Digital Subscriber Line (DSL), Internet Service Provider (ISP), web hosting, virtual private networking, U-

[25] Pacific Gas & Electric Company, 2013. *Clean Energy Solutions*. Website: www.pge.com/mybusiness/environment/pge/cleanenergy/index.shtml (accessed January 9).

[26] Ibid.

[27] Pacific Gas and Electric Company, 2013. *Electric System.* Website: www.pge.com/mybusiness/edusafety/systemworks/electric/ (accessed January 9).

[28] El Dorado Hills Community Services District, 2013. *Our Services. Cable Television*. Website: www.edhcsd.org/cable_television.html (accessed January 9).

verse, Multi-protocol Label Switching (MPLS), content delivery network (CDN), and wireless/ cellular paging services.

The California Public Utilities Commission requires that telecommunications providers anticipate and serve new growth. To meet this requirement, these providers continually upgrade their facilities and infrastructure, adding new facilities and technology to remain in conformance with California Public Utilities Commission tariffs and regulations and to serve customer demand in the City. Telecommunication providers also work with the El Dorado Hills community to ensure that construction of new facilities does not interfere with any new or newly-paved streets.

2. Impacts and Mitigation Measures

This section discusses utility and infrastructure impacts that could result from the proposed project. The section begins with the significance criteria, which establish the thresholds used to determine whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, if appropriate.

a. Significance Criteria. The project would have a significant impact on the environment related to utilities and infrastructure if it would:

- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects, or would require new or expanded entitlements for water supplies;
- Generate a demand for wastewater treatment that exceeds the capacity of the wastewater treatment provider when considered in addition to the provider's existing commitments; or result in a determination by the wastewater treatment provider that serves, or may serve, the project that it does not have adequate capacity to serve the project's projected demand in addition to the provider's existing commitments;
- Generate a demand for solid waste disposal that cannot be accommodated by the landfill serving the project area or be inconsistent with federal, State or local statutes and regulations related to solid waste; or
- Result in inefficient, wasteful, or unnecessary consumption of energy.

b. Project Impacts. The following describes the utility impacts associated with implementation of the proposed project.

(1) Water Supply Availability. Water demand associated with the proposed project was determined as part of the preparation of the WSA. The majority of this section includes information from the WSA prepared for the proposed project, which is included as Appendix F.

Water Demand. The proposed project includes general lot-size designations for various lots within the proposed project; lot size will have the largest impact on the water demand associated with the proposed project, due primarily to landscaping. Indoor water demand remains relatively constant regardless of lot size.

As the proposed project is similar in nature to existing housing built in the Serrano and El Dorado Hills area over the past few decades, recent water use data for housing within these neighborhoods provided a foundation for the WSA to establish new project-specific water demands. Through comparison of proposed project land-use elements to existing land uses, EID determined appropriate

existing, established neighborhoods and non-residential facilities that best aligned with each unique residential and non-residential project element. For each comparable neighborhood, EID gathered and assessed total annual water use for the years 2008 through 2012. This selected period of water use best represents: 1) the greatest number of homes occupied within each selected area (including established backyard landscapes); and 2) varied water use over a range of climatic conditions reflecting various rainfall amounts and timing.

Since construction of these existing houses, a few changes have occurred that will reduce the proposed project's water demands from the baseline unit water demands derived from existing meter data. These include CAL Green Code and California Model Water Efficient Landscape Ordinance. There are briefly described below:

- **CAL Green Code.** In January 2010, the California Building Standards Commission adopted the statewide mandatory Green Building Standards Code (CAL Green Code) that requires the installation of water-efficient indoor infrastructure for all new projects beginning January 1, 2011. The CAL Green Code applies to the planning, design, operation, construction, use and occupancy of every newly constructed building or structure. All proposed land uses must satisfy the indoor water use infrastructure standards necessary to meet the CAL Green Code. The CAL Green Code requires residential and nonresidential water efficiency and conservation measures for new buildings and structures that will reduce the overall potable water use inside the building by 20 percent.
- **California Model Water Efficient Landscape Ordinance.** In 2006, the Water Conservation in Landscaping Act was enacted, which required the Department of Water Resources to update the Model Water Efficient Landscape Ordinance (MWELO). The provisions of the MWELO are applicable to new construction with a landscape area greater than 2,500 square feet.

Collectively, these and other factors will put downward pressure on the baseline residential unit water demand factors – potentially dropping each unit demand by up to 10 percent for the larger lots. Table IV.L-3 provides a summary of the baseline demand factor for each residential land-use category, the anticipated savings from the conservation mandates, and the resulting unit demand factor used to estimate the proposed project's water use.

Table IV.L-3: Residential Water Demand Factors

EID Water Demand Category	Lot Size	Current Factor (af/du)	Conservation Applied	Factor Use (af/du)
3-Acre Custom Estate Lot	3 acres	3.48	10%	3.13
1-Acre Custom Home Lot	1 acre	1.16	10 %	1.04
¼ and ½-Acre Hillside Lot	½ to 1 acre	0.87	8 %	0.80
8,000 to 10,000 SF Lot	8,000 to 10,000 SF	0.55	5%	0.53
5,000 to 7,000 SF Lot	5,000 to 8,000 SF	0.50	5%	0.48
Age Restricted Large Lot	5,000 to 8,000 SF	0.50	5%	0.48
Age Restricted Small Lot	5,000 to 8,000 SF	0.50	5%	0.48

Source: El Dorado Irrigation District, *SB 610 Water Supply Assessment for the Dixon Ranch Residential Project*, 2013.

Similar to residential water demand factors, non-residential factors are based upon recent water use trends for similar types of land classifications. For purposes of the water supply assessment, per-lot demand for non-residential lots is described as "the acre-feet of water use annually per acre of land" – or acre-feet/acre (af/ac), and reflects both indoor and outdoor water needs. These non-residential demand factors are included in Table IV.L-4.

Table IV.L-4: Non-Residential Demand Factors

Land Use	Use Factor	Units
Community Center (Clubhouse)	4.48	AF/Unit
Parks	2.77	AF/Acre
Right-of-Way Landscaping	3.30	AF/Acre
Sewer Lift Station	2.50	AF/Unit
Open Space	0.00	AF/Acre

Source: El Dorado Irrigation District, *SB 610 Water Supply Assessment for the Dixon Ranch Residential Proj*ect, 2013.

Combining the proposed project's land-use details with the demand factors presented in Tables IV.L-3 and IV.L-4, the water demands for the project from initiation to build-out are estimated. In addition, there is the potential to serve the existing residence, located on a 5-acre lot on the northern border of the project (Lot 1). This parcel currently uses a personal well; however, with the construction of the proposed project, EID water will be available to use at Lot 1. To accommodate this possibility, the existing residence is assumed to have the same demand as the 3-acre custom estate lots – or 3.13 acre-feet per year at build-out.

At completion, the proposed project is estimated to require 482 acre-feet of water annually (including non-revenue water)[29] as shown in Table IV.L-5. Not including the proposed project or other planned future uses, EID's existing current water demand is 38,984 acre-feet of water annually (see WSA, Table 3-1). By 2035, EID's existing demands (i.e., the demands of current customers and uses), including non-revenue water, are anticipated to be 41,150 annual acre feet (see *ibid*). Therefore, in year 2035, EID's existing plus project water demands are anticipated to be 41,632 acre-feet of water annually.

As described in the WSA, in normal years, EID's existing water supplies total 67,190 acre-feet per year and 5,600 acre-feet of recycled water per year for a total of 72,790 acre-feet per year. In multi-dry years, the existing water supplies available to EID total 56,240 acre-feet per year (WSA Table 5-1). Accordingly, even in multi-dry years, EID's existing water supplies would be more than sufficient to meet EID's existing demands (current customers and uses) plus the demands of the proposed project. Even factoring uncertainties associated with global climate change (discussed below), it is anticipated that EID's existing water supplies would be reasonably likely to be available to meet EID's existing (current customers and uses) water demands and the water demands of the proposed project. Therefore, the proposed project, by itself, would not be expected to require new or expanded water infrastructure or water rights.

[29] The water demand factors presented earlier in this section represent the demand for water at the customer's meter for each category. To fully represent the demand on EID's water resources, non-revenue water also needs to be included. Non-revenue water represents all of the water necessary for delivery and reflects distribution system leaks, water demands from potentially un-metered uses such as fire protection, hydrant flushing, and unauthorized connections, and inescapable inaccuracies in meter readings. Consistent with the District's methodology for calculating future water meter availability, as defined in the *2012 Water Resources and Service Reliability Report*, non-revenue water is projected at a fixed rate of 13 percent. Non-revenue demand is estimated to add 55 acre-feet per year at build-out to the proposed project's land-use demands, bringing the estimated build-out water demand attributed to the proposed project to 482 acre-feet annually.

Table IV.L-5: Estimated Proposed Project Water Demands from Start-Up to Build-Out

	Unit Count or Acreage						Demand Factor (af/du or af/ac)						Demand (af/yr)					
Category	Current	2015	2020	2025	2030	2035	Current	2015	2020	2025	2030	2035	Current	2015	2020	2025	2030	2035
Residential [A]																		
Existing Large-Lot Estate	1	1	1	1	1	1	0.00	3.13	3.13	3.13	3.13	3.13	0	3	3	3	3	3
3-Acre Custom Estate Lots	0	1	5	5	5	5	3.48	3.13	3.13	3.13	3.13	3.13	0	3	16	16	16	16
1-Acre Custom Home Lots	0	1	5	5	5	5	1.16	1.04	1.04	1.04	1.04	1.04	0	1	5	5	5	5
1/4 and 1/2 Ac Hillside Lots	0	20	112	112	112	112	0.87	0.80	0.80	0.80	0.80	0.80	0	16	90	90	90	90
8,000-10,000 sf Lots	0	23	173	173	173	173	0.55	0.53	0.53	0.53	0.53	0.53	0	12	91	91	91	91
5,000-7,000 sf Lots	0	20	149	149	149	149	0.50	0.48	0.48	0.48	0.48	0.48	0	10	71	71	71	71
Age Restricted Large Lot	0	30	80	80	80	80	0.50	0.48	0.48	0.48	0.48	0.48	0	14	38	38	38	38
Age Restricted Small Lot	0	30	80	80	80	80	0.50	0.48	0.48	0.48	0.48	0.48	0	14	38	38	38	38
												Subtotal		73	351	351	351	351
Public																		
Community Center	0	1	1	1	1	1	4.48	4.48	4.48	4.48	4.48	4.48	0	4	4	4	4	4
Village Park	0	0	9	9	9	9	2.77	2.77	2.77	2.77	2.77	2.77	0	0	25	25	25	25
Neighborhood Park	0	0	2	2	2	2	2.77	2.77	2.77	2.77	2.77	2.77	0	0	5	5	5	5
Lift Station	0	2	2	2	2	2	2.50	2.50	2.50	2.50	2.50	2.50	0	5	5	5	5	5
Open Space	0	66	66	66	66	66	0	0	0	0	0	0	0	0	0	0	0	0
												Subtotal		9	40	40	40	40
Other																		
Mitigation	0	15	31	31	15	0	1.00	1.00	1.00	1.00	1.00	1.00	0	15	31	31	15	0
ROW & Landscape	0	6.3	6.3	6.3	6.3	6.3	3.30	3.30	3.30	3.30	3.30	3.30	0	21	21	21	21	21
Pond Supplementation	0	4.4	4.4	4.4	4.4	4.4	3.30	3.30	3.30	3.30	3.30	3.30	0	15	15	15	15	15
Construction Water	0	1	1	0	0	0	1.00	1.00	1.00	1.00	1.00	1.00	0	1	1	0	0	0
												Subtotal		52	67	66	51	35
												Total Water Demand	**0**	**135**	**459**	**458**	**442**	**427**
												Non-Revenue Demand at 13%	0	17	59	59	57	55
												Total Proposed Project Demand	**0**	**152**	**518**	**517**	**499**	**482**

[a] The distribution of housing units over time is EID's representation of the anticipated total number of units planned under each phase.

Source: Tully & Young, 2013. *Dixon Ranch Residential Project Water Supply Assessment*. August 26.

Although EID's existing water supplies are expected to be adequate to serve EID's current (existing) water demands plus the water demands of the proposed project at buildout, from a water planning perspective, it is important to consider whether EID's water supplies are sufficient to meet all planned and reasonably foreseeable future uses that will rely on EID water supplies. As described in the WSA, the annual water demand estimate from all existing and planned projects in the contiguous EID service area is approximately 67,300 acre-feet per year by 2035. The WSA concludes that after accounting for these demand projections for the next 20 years, EID should have sufficient water to meet the demands of the proposed project and its other service area demands for the next 20 years assuming the following:[30]

- EID, EDCWA, and EDWPA successfully execute the contracts and obtain the water right permit approvals for currently unsecured water supplies discussed in Section 4 of the WSA included in Appendix F. Absent these steps, the water supplies currently held by EID and recognized to be diverted under existing contracts and agreements would be insufficient in 2035 to meet the Proposed Project demands along with all other existing and planned future uses.
- EID will commit to implement Facility Capacity Charges in an amount sufficient to assure the financing is available as appropriate to construct the necessary infrastructure as detailed in the March 2013 EID Integrated Water Resources Master Plan.
- Demand in single-dry years includes an additional 5 percent of demand over the normal year demand during the same time period. This conservative assumption accounts for the likelihood that EID customers will irrigate earlier in the season to account for dry spring conditions. This hypothetical demand augmentation may or may not manifest in dry years, but this conservative assumption further tests the sufficiency of water supplies during dry conditions.
- The estimated demands include 13 percent to account for non-revenue water losses (e.g., distribution system losses).

<u>Impact UTL-1</u>: A degree of uncertainty is inherent in EID's ability to meet long-term cumulative water supplies, which could result in the need to construct new or expand existing water facilities, the construction of which could cause significant environmental effects, and/or could require new or expanded entitlements for water supplies (S).

As noted, EID's existing water supplies are reasonably certain to be available to serve EID's existing water demands (i.e., current customers and uses) and the water demands of the proposed project. However, as described in the WSA, EID's existing water supplies would not be sufficient to meet EID's existing water demands and the buildout water demands of the proposed project when combined with all other past, present and reasonably probable future uses.

In *Vineyard Area Citizens for Responsible Growth v. City of Rancho Cordova* (2007) 40 Cal 4th 412 (hereafter *Vineyard*), the California Supreme Court identified specific requirements for an adequate analysis of water supply issues in an EIR. The court explained that future water supplies identified

[30] Tully & Young, 2013. *El Dorado Irrigation District SB 610 Water Supply Assessment for the Dixon Ranch Residential Project,* August 26.

and analyzed in an EIR must be reasonably likely to prove available. Speculative water sources and unrealistic water allocations do not provide an adequate basis for a public agency's decision-making. The Supreme Court said that when a full analysis of future water supplies for a project leaves some uncertainty regarding the availability of the identified future supplies, the EIR must discuss possible replacement or alternative supply sources. In addition, the EIR must discuss the potential environmental effects of resorting to those alternative supply sources. The court held that it is not sufficient to address issues relating to future water supplies by simply stating that future development will not go forward in the absence of a sufficient water supply.

The court also recognized that the ultimate question under CEQA "is not whether an EIR establishes a likely source of water, but whether it adequately addresses the reasonably foreseeable impacts of supplying water to the project." Accordingly, if uncertainties inherent in long-term planning make it impossible to identify the future water sources with certainty, an EIR may satisfy CEQA if it acknowledges the degree of uncertainty involved, discusses the reasonably foreseeable water supply alternatives, and discloses the significant foreseeable environmental effects of each alternative, as well as mitigation measures to minimize each adverse impact.

Accordingly, the *Vineyard* opinion outlined the following general principles governing an EIR's analysis of water supply issues:

- An adequate environmental impact analysis for a long-range development plan cannot be limited to the water supply for the first stage of development. It must consider supplies necessary for the entire development.
- Future water supplies identified and analyzed in an EIR must be reasonably likely to prove available. Speculative sources and unrealistic paper allocation do not provide an adequate basis for decision-making under CEQA.
- When, despite a full analysis, "it is impossible to confidently determine that anticipated future water sources will be available," CEQA requires some discussion of possible replacement or alternative supply sources, and of the environmental consequences of resorting to those sources.
- An EIR for a land use plan need not demonstrate that the water supply for the project is assured through enforceable agreements with a provider and built or approved treatment and delivery facilities. To interpret CEQA as requiring firm assurances of future water supplies at early stages of the planning process would be inconsistent with the water supply statutes, which call for an assured supply only at the end of the approval process.
- The "ultimate question under CEQA is not whether an EIR establishes a likely source of water, but whether it adequately addresses the reasonably foreseeable impacts of supplying water to the project."

As noted, EID's secured water supplies are adequate to meet EID's existing (current customers and uses) water demands plus project buildout water demands. From a future cumulative perspective, however, the WSA identified a potential water shortfall in very dry years absent planned water supplies (as detailed below). This EIR, therefore, characterizes alternative water sources for the identified cumulative development and the associated environmental impacts that utilization of these

supplies might create. Information regarding the alternative water sources is taken from a memorandum provided by Tully & Young, which is included in Appendix F.[31]

Sources of Uncertainties. As detailed in Section 4 of the WSA and summarized in Table IV.L-1, the EID water supplies are separated into two classifications: existing and planned. Combined, the WSA concluded that these supplies provide sufficient water for all existing and planned future uses, including the proposed project.

While there is reasonable certainty that all of the existing secured EID water supplies are available, there is a degree of uncertainty whether the planned Central Valley Project Fazio water entitlement (Fazio supply), or the supplies anticipated under the El Dorado-SMUD Cooperation Agreement (UARP supply) will manifest in the quantities or on the schedule currently planned as EID proceeds through regulatory approval and contracting processes.

In addition to the uncertainties inherent in EID's planned water supplies, climate change, environmental considerations, and existing regulatory requirements pose some threat to EID's secured and planned water supplies. As explained in EID's 2013 Integrated Water Resources Master Plan:

> Residents of El Dorado County (County) served by the District depend on surface water from the watersheds of the Sierra Nevada for their water supply. The Sierra Nevada snowpack serves as natural storage for much of the region's annual precipitation. These watersheds can experience large variations in annual precipitation and the resultant water supply. The State of California (State) has historically experienced significant droughts, and climate change may increase the frequency and severity of droughts in the future, resulting in reduced snowpack. The projected population growth and increase in water demands in the County will amplify the severity of drought impacts.
>
> In addition, as a result of supply limitations during dry years and those imposed by environmental constraints, the reliability of the Bureau of Reclamation's (USBR's) Central Valley Project (CVP) surface water supplies has been impacted. This uncertainty can create challenges in managing the District's other water supply sources. It is likely that the reliability of CVP surface water supplies will continue to decline.
>
> Several ongoing planning processes in the Sacramento-San Joaquin River Delta threaten to further complicate management of District water supplies and/or impact the District's water supply reliability by requiring the use of water from sources upstream of the Delta to meet environmental or other in-Delta needs. Therefore, considering the potential impacts of climate change, coupled with the reduced reliability of CVP and other supplies, the long-term water supply plan must consider both projected growth and supply reliability.

Due to the uncertainties in water supplies associated with more restrictive environmental requirements, hydrologic variations due to climate change, and other factors, the District recognizes the need to continue to investigate and secure additional water supplies to provide long-term dry and multi-dry

[31] Tully & Young, 2014. *Water Supply Options to El Dorado Irrigation District's Long Term Planned Water Supplies*. March 7.

year reliability as well as to meet projected buildout water demands. The District's 2013 Integrated Water Resources Management Plan[32] outlines demand management methods and water supply and water infrastructure planning opportunities potentially available to EID to help secure reliable future water supplies in the face of uncertainties.

Based on these uncertainties, an analysis of options that would provide sufficient water to meet EID's existing and planned future water demands is provided. The following discussion characterizes three water supply options that are viable alternative methods to serve the EID's existing and planned future demands.

Quantities of Water to Replace. To understand the quantity each water supply option must provide, an evaluation of the Dixon Ranch WSA conclusions about surplus water in the cumulative conditions is necessary. Table 5-1 of the WSA summarizes the assessment of supply and demand for the year 2035. As demonstrated in that table, surplus water exists under all hydrologic conditions: normal, single-dry, and multi-dry years. Absent the Fazio and the UARP water supplies, however, the surpluses shown in WSA Table 5-1 are reduced or even become shortfalls. Table IV.L-6 presents the surplus as analyzed in the Dixon Ranch WSA and the resulting change when the Fazio and UARP planned water supplies are removed.

As demonstrated in Table IV.L-6, at future cumulative build-out conditions (2035) during a normal year there is still surplus water, absent the planned supplies, and thus no alternative supply is necessary. During single-dry and multi-dry hydrologic conditions, the anticipated supply when considering the "planned supplies" becomes a shortfall with their absence. The worst-case shortfall occurs during a single-dry hydrologic year – when supplies are curtailed and temporary demand management efforts are yet to be triggered by EID. Under these shortfall conditions, EID would not have sufficient water to serve the proposed project and other existing and planned uses. In order to meet future cumulative plus project demands, a water supply option must be identified and its impacts assessed for a water supply that would provide up to 3,400 acre-feet during a single dry-year.

Table IV.L-6: Comparison of Surplus/Shortfall Conditions with and Without Planned Supplies at Buildout Conditions (2035)

Hydrologic Year Type	Surplus Water (T 5-1 of WSA) acre-feet/year	Quantity of "Planned Supplies" acre-fee/year		Surplus/(Shortfall) Water w/o "Planned Supplies" acre-feet/year
		Fazio	UARP	
Normal	42,995	7,500	30,000	5,495
Single Dry	7,225	5,625	5,000	(3,400)
Multi Dry (Year 1)	7,225			(3,400)
Multi Dry (Year 2)	8,251			(2,374)
Multi Dry (Year 3)	12,404			1,779

Source: Tully & Young, 2013. Memorandum: Water Supply Options to El Dorado Irrigation District's Long-Term Planned Water Suppliers. August.

[32] The 2013 Integrated Water Resources Master Plan is hereby incorporated by reference. The plan is available at: http://www.eid.org/modules/showdocument.aspx?documentid=3554 and at the El Dorado County Community Development Agency, Planning Services Division, 2850 Fairlane Court, Placerville, California, 95667.

Analysis of Water Supply Options. The analysis of Water Supply Options in this section provides a qualitative assessment of the impacts that could result from the use of these alternative supplies. To enable comparison to the sufficient water supplies identified by the WSA and detailed in the summary of the WSA above, this analysis also includes information as to whether an identified Water Supply Option would result in greater, similar, or lesser impacts than the WSA's identified water supplies. The following water supply options have been developed to meet the 3,400 acre-feet shortfall and are assessed in this section:

- Option 1 – Construct Alder Reservoir
- Option 2 – Construct recycled water seasonal storage and implement additional conservation
- Option 3 – Participate in regional groundwater banking and exchange programs

Option 1: Construct Alder Reservoir. Water Supply Option 1 (Option 1) envisions the construction of a new dam and storage reservoir in the Alder Creek watershed. Option 1 would provide more than ample dry-year water supplies to meet the targeted shortfall identified in Table IV.L-6 above. A storage facility on Alder Creek has been studied for many years, with the most recent analysis included in EID's 2013 *Integrated Water Resources Master Plan* (IWRMP). In the IWRMP, construction of the Alder Reservoir is an integral part of the EID recommended water resources plan. The IWRMP is included in this EIR by reference.[33]
As described in the IWRMP:

> *"[T]he Alder Dam would be a rock-fill dam approximately 143 feet high with a crest length of 800 feet and width of 30 feet at elevation 5,333 feet. The Alder Reservoir would have a capacity of 31,700 acre-feet and capture approximately 23,100 acre-feet of water in an average runoff year from the Alder Creek drainage basin of 18.6 square miles. A new penstock and 10 megawatt powerhouse would be located near the existing El Dorado Canal allowing water withdrawn from Alder Reservoir to be used for hydroelectric generation and released into the El Dorado Canal downstream of the Alder Creek inverted siphon."(IWRMP, p. 201)*

The new reservoir is projected to provide a dry-year safe yield of 11,250 acre-feet. Water captured and stored during the spring snowmelt runoff period would be released throughout the remaining months at either: (1) Jenkinson Lake via the Hazel Creek Tunnel; (2) the Forebay Reservoir; (3) Folsom Reservoir; or (4) a new point of diversion such as the proposed White Rock diversion. While the estimated safe yield is more than three times the quantity necessary for a water supply option, the Alder Reservoir project as currently planned by EID provides a well-documented alternative that has already undergone assessment and is included in the EID Board-adopted IWMRP.

As detailed in the IWRMP, Alder reservoir would have a capacity of 31,700 acre-feet, capturing about 23,000 acre-feet in an average runoff year from the Alder Creek watershed. The safe yield of the reservoir is estimated to be about 11,250 acre-feet per year. This option provides significantly more water than is necessary to replace the WSA's planned water supplies. Thus, even if the

[33] El Dorado Irrigation District, 2013. *Integrated Water Resource Master Plan.* Website: www.eid.org/modules/showdocument.aspx?documentid=3554. March.

hydrology estimates produced lower runoff quantities, there would still be significantly more water than is required for replacement, resulting in a high level of certainty of availability during dry-years.

If Option 1 were necessary, due to absence of the WSA's planned water supplies, environmental impacts associated with construction and operation of the dam would likely be significant, as this option would construct and operate a new on-stream reservoir on Alder Creek in El Dorado County. In 2004, a Joint Benefit Investigation Plan Technical Analysis of Preliminary Alternatives (JBIP) was prepared by El Dorado County Water Agency, EID, Sacramento Municipal Utility District, and the Georgetown Divide Public Utility District, which, among other things, investigated the potential feasibility of an Alder Creek Reservoir. The JBIP explained the following concerning the possible environmental impacts of a proposed Alder Creek Reservoir:

> The Alder Creek Reservoir is located on U.S. Forest Service lands requiring approval for its construction. Inundation caused by the construction of the Alder Creek Dam and Reservoir would lead to potential losses in wetland and riparian habitat, fish stream habitat, vegetation, deer and wildlife habitat, and archeological and cultural resources along the river, which would require consultation with the appropriate resource agencies and possible mitigation measures. Construction may also inundate residential and commercial structures, which may require monetary compensation and/or relocation. Inundated roadways would need to be rerouted around the reservoir. A new FERC license or amendment to the El Dorado Project (FERC No. 184) would be required if hydroelectric power is pursued with this alternative. Creation of the Alder Creek Reservoir would reduce shore and wade fishing opportunities along Alder Creek, but would create flat water recreation opportunities on Alder Creek Reservoir with the potential to develop additional campgrounds and day use recreation areas.[34]

Future compliance with CEQA and other applicable environmental statutes and regulations would be required in connection with a proposal to construct a new on-stream reservoir on Alder Creek. Compliance with such statutory and regulatory standards would likely reduce the environmental impacts associated with this option, although not necessarily to less than significant levels.

Option 2: Construct Recycled Water Seasonal Storage and Implement Additional Conservation. Water Supply Option 2 (Option 2) includes two components: (1) a recycled water seasonal storage reservoir to capture treated wastewater produced by EID that is otherwise in excess of the daily demand for recycled water, and (2) additional water conservation actions implemented by EID and its customers to reduce customer demand and/or reduce delivery system losses.

- *Seasonal Storage Reservoir*. The first component, seasonal storage, has been analyzed by EID. In a report[35] published in May of 2011 (Design Report), EID detailed an assessment of potential seasonal storage locations. Of the twenty locations assessed in the Design Report, two locations were determined most suitable for additional analysis. These sites were thoroughly investigated to determine each location's ability to store 2,500 acre-feet of annual recycled water supply. Section 4 of the Design Report provides detailed information

[34] Mead & Hunt, 2004. *Joint Benefit Investigation Plan Technical Analysis of Preliminary Alternatives.* Website: www.ca-water.com/files/JBIT-Report.pdf.

[35] El Dorado Irrigation District, 2011. *Basis of Design Report - EID Recycled Water Seasonal Storage Reservoir.* May.

regarding site location, geology, embankment design, pipeline routing, and other relevant information. These site are:

- El Dorado Hills Reservoir - Site 15 located south of the El Dorado Hills Wastewater Treatment Plant
- Deer Creek Reservoir – Site 20 located just south of the Deer Creek Wastewater Treatment Plant

- *Water Conservation.* With availability of 2,500 acre-feet from a recycled water storage reservoir to help meet the 3,400 acre-foot shortfall in dry years, the water conservation component of Option 2 would need to provide an additional 900 acre-feet. This supply may manifest either as additional reduction in EID customer demands, or as a reduction in distribution system losses, with the latter enabling EID to route the saved water to meet customer demands.

  Currently, EID implements a variety of water conservation practices consistent with the best management practices (BMPs) identified in the California Urban Water Conservation Council's (CUWCC) Memorandum of Understanding. These programs are part of EID's on-going operations, and include, but are not limited to: tiered pricing, water meters, leak audits, and public education. EID's Water Efficiency Programs offer numerous options directed towards conserving water uses for commercial, residential, and landscaping purposes.

  As demonstrated in Section 3.3 of the WSA and summarized in Table 3-1, the existing EID customers are anticipated to reduce their demands through implementing conservation actions over the analysis period. Specifically, EID anticipates current customer demands will reduce by 2 percent by 2020 and an additional 1 percent by 2035. As shown in WSA Table 3-1, these savings are estimated to reduce current customer demands by 690 acre-feet annually.

  Under this portion of Option 2, additional conservation actions will target generating an additional 900 acre-feet, slightly more than the conservative estimates in the Dixon Ranch WSA.

  Though there may begin to be limits for additional conservation opportunities from existing EID customers, EID also recognizes opportunities to conserve water through improvements to its existing water delivery infrastructure. As detailed in Section 3.4 of the WSA, a "non-revenue" component of total water demands represents the system losses, meter inaccuracies, illegal connections, and other factors that help explain the differences between metered customer use and water entering EID's distribution system. For purposes of the WSA, and as a conservative planning tool in other EID water planning efforts, this non-revenue value is assumed to hold constant at 13 percent of the overall customer demand. The 13 percent reflects over 4,500 acre-feet of water essentially unaccounted for in EID's system under current delivery conditions. With increased customer demands, this value increases to over 7,500 by 2035. By fixing system leaks and addressing other elements of non-revenue demands, water can be recaptured and made available to meet customer demands.

  As a routine part of its operations, EID works to identify sources of non-revenue demand, seeking to improve delivery system efficiencies as economically feasible. Though the specific requirements and resulting water savings from addressing overall distribution system losses and inefficiencies are an evolving process, EID has been successful in the

past and will continue to be so into the future. As issues are identified, EID evaluates options, assesses costs, and details savings opportunities. As these plans are developed, they are assigned a project number, priority level, and moved into EID's Capital Improvement Plan (CIP) as specific projects.

One example of a water conservation project EID has assessed and included as part of its CIP is the Main Ditch piping project from Forebay Reservoir to the Reservoir 1 Water Treatment Plant. The conservation savings from piping a 3-mile long earthen canal that carries as much as 15,080 acre-feet annually are estimated to be as high as 1,300 acre-feet per year. In addition to the water savings from this project, public health benefits will also accrue including lower sediment levels in the raw water reaching the treatment plant and greatly reduced risk of contamination. EID has included this project in its latest Board approved CIP and is currently working to secure funding. For purposes of Option 2, this particular system loss reduction project is assumed to achieve the additional 900 acre-feet of conservation supply.

In 2004 EID participated in the testing of the new American Water Works Association water audit methodology (AWWA audit) to evaluate the losses from its delivery system. From the AWWA audit, EID recognized it had significantly reduced its water losses over the previous decade, from 28 percent in 1991 to 13 percent in 2004. With a decade passing since the AWWA audit, there have been improvements in leak detection technologies as well as growth in the number and experience of contractors specializing in leak detection and repair. As EID continues to improve its distribution system to efficiently meet customer needs, some of the opportunities identified by the 2004 AWWA audit may now be cost effective to investigate, assess and implement.

Along with continued investigation, assessment and implementation of actions to reduce non-revenue demands, EID can expand current rebate programs and other customer-focused water conservation measures. An additional 1 percent reduction in the demands of current customers, beyond the savings already anticipated in the WSA, could reduce demand by another 350 acre-feet annually.

As a conservative assumption, an additional 1 percent reduction in customer demands through conservation measures and a 1 percent reduction in the non-revenue demands could produce over 900 acre-feet of water annually. Greater reduction in either category and/or piping the Main Ditch would only increase the savings further

Combined, the recycled water seasonal storage reservoir and additional conservation measures could generate at least 3,400 acre-feet needed in dry years. Because the seasonal storage facility would capture and regulate the consistent outflows of EID's wastewater treatment plants, the identified yield is considered to be highly reliable under all hydrologic conditions. Long-term reductions in customer demand and fixes to distribution system inefficiencies also provide a consistent savings regardless of hydrologic conditions. Thus, this Water Supply Option provides a high level of certainty of availability during dry years

Seasonal storage and water conservation could result in environmental impacts primarily associated with construction and operation of the facilities. Both the El Dorado Hills and Deer Creek Reservoir sites have a highly variable geology setting; such conditions may require mitigation during construction. Construction activity would also potentially result in transportation, noise, air quality, and greenhouse gas emissions impacts. In addition to constructing the reservoir, roads to service the

reservoir would be required. Construction of these components would likely result in the loss of plant and animal habitats. Future compliance with CEQA, and other applicable environmental statutes and regulations, would be required in connection with constructing these resources; compliance with such statutory and regulatory standards would likely reduce the environmental impacts associated with this option, although not necessarily to a less-than-significant level.

Potential environmental impacts associated with water conservation measures would be dependent on the specific location of such improvements. For the Main Ditch Piping project,[36] there would be temporary air and water quality impacts associated with the pipeline and appurtenances; however, it is anticipated that best management practices could address these potential impacts. Construction activities would likely generate temporary sources of noise and traffic. Raptors and migratory birds have the potential to occur within the area, and appropriate mitigations would avoid impacts to raptors and migratory birds. The project site is located north of habitat for the California red-legged frog, but previous surveys indicated no suitable breeding habitat is present. Future compliance with CEQA, and other applicable environmental statutes and regulations, would be required in connection with constructing these resources; compliance with such statutory and regulatory standards would likely reduce the environmental impacts associated with this option, although not necessarily to a less-than-significant level.

Option 3: Participate in Regional Groundwater Banking and Exchange Programs. Under Water Supply Option 3, EID would coordinate with other regional water purveyors to exchange wet and normal year EID surface water supplies for use of non-EID water supplies in critical dry years. Option 3 could be achieved in partnership with one or more of many water purveyors that share access to the American River. Any opportunity, however, is premised on an agreement among the parties and regulatory approvals to allow EID surface water supplies to be used or stored outside of EID's existing place of use during normal and wet conditions, and EID's use of a partner's American River-related water supplies during dry conditions.

Like the other two options, Option 3 needs to assure a minimum of 3,400 acre-feet of water is available to EID during a single dry year.

As presented in the WSA, during normal and wet years, EID has a surplus of secured water supplies totaling about 5,500 acre-feet annually. All or a portion of this supply is assumed available for delivery to another regional water purveyor to enable the conjunctive use exchange opportunities envisioned under this option.

Several water purveyors with surface water rights and entitlements on the American River could participate with EID to develop this water supply option. As envisioned, EID would exchange normal year water for use of a portion of the partner's surface supplies (e.g., if Sacramento County Water Agency was the partner, the supply exchanged to EID could be SCWA's dry year CVP contract water supply or other SCWA water rights). In wetter and normal water years, EID would deliver its 5,500 acre-feet surplus to its conjunctive use partner for use in the partner's service area (i.e., SCWA would deliver the surface water to its customers). In taking EID's surplus surface water, the partnering

[36] El Dorado Irrigation District, 2014. *Reclamation WaterSMART Water and Efficiency Grant, Funding Opportunity Announcement No. RHA50000, El Dorado Irrigation District Main Ditch Piping*. January 23.

agency would forego groundwater use and thus "bank" groundwater supplies as stored water in the underground aquifer. During critical dry years, the partnering agency would rely upon this banked groundwater to meet local needs and allow EID to divert up to 3,400 acre-feet of its surface rights or entitlements at an existing EID facility in Folsom Reservoir or another existing EID diversion and treatment facility.

This water supply option could generate up to 3,400 acre feet of water for diversion by EID in dry years on a reasonably certain basis – given that any conjunctive use partnership would only be established with a purveyor(s) able to reliable provide adequate dry year surface supplies to EID.

Water Supply Option 3, which would exchange groundwater supplies and surface supplies in the Sacramento region, includes concerns and potential environmental impacts related to the long-term reliability of groundwater supplies. In addition, there are also concerns related to the migration of existing groundwater contamination in eastern Sacramento County as a result of additional pumping under this water supply option, so potential environmental impacts related to hazards would be a potential impact associated with this alternative. If additional water infrastructure is required for this alternative, construction-related impacts (construction traffic, noise, air quality impacts) could result. Future compliance with CEQA and other applicable environmental statutes and regulations would be required in connection with this option. Compliance with such statutory and regulatory standards would likely reduce the environmental impacts associated with this option, although not necessarily to a less-than-significant level.

Conclusion. EID's existing secured supplies are adequate to supply EID's existing (current customers and uses) water demands plus the 482 annual acre feet of water required to serve the proposed project at build-out. However, in the cumulative condition (existing, plus planned future uses, plus project), a potential water shortfall in very dry years absent planned water supplies is identified beginning in the year 2030 (WSA Table 5-1). Although it is anticipated that the proposed project would be fully constructed before the shortfall associated with the existing and planned future development occurs, due to the uncertainties associated with the County's Oak Woodland policies (see Chapter IV, section G, Impact BIO-2), and uncertainties with the market, in general, there is a possibility that the project would not be built out by this time and would need to secure a reliable water supply in the face of a future cumulative shortage. Sources for this alternative water supply include the three water supply options discussed above. In order to ensure that an adequate water supply is available to meet the project's demands, Mitigation Measure UTL-1 is required:

> Mitigation Measure UTL-1: Prior to approval of any final subdivision map for the proposed project, the applicant shall secure a "will serve" letter or equivalent written verification from EID demonstrating the availability of sufficient water supply for the project. (LTS)

With implementation of Mitigation Measure UTL-1, the project will not go forward unless EID has adequate secured supplies to meet the project's water demands. If secured water supplies are not available to meet the project's water demands, a permanent curtailment of development within the project could occur. Impacts associated with curtailment of development within the project could include (1) impacts associated with infrastructure construction and the provisions of services; (2) impacts associated with the pattern of development (e.g., land use patterns that are discontiguous and the effects such patterns may have on land use compatibility and other resources; and (3) economic impacts. Regarding infrastructure impacts, project buildout would not outpace the development of its infrastructure and therefore no impacts would be expected to occur. Development of only part of the project would not likely result in significant impacts associated with discontiguous land-use patterns.

The project site is currently largely undeveloped and the development of fewer residential units than originally proposed would not cause impacts beyond those already described with respect to development of the entire project. In addition, due to the proposed project's land use being purely residential and not a mix of uses, there will not be a risk of imbalance between commercial/office/ retail uses and residential uses if the project is not built out as proposed. Lastly, although partial (as opposed to full) buildout of the project would not yield the same economic benefits of the project, and, indeed, could result in a financial loss to the developer, these economic impacts would be unlikely to lead to significant adverse physical changes to the existing environment. However, because the General Plan directs growth to the Community Regions, vacancies on the project site could lead to growth being proposed in other areas of El Dorado County that are less suitable for residential development than the proposed project site. Depending on the location and extent of such development, this could be a significant land use impact. It would be speculative, however, to try to predict the precise locations or level of impact that would occur based on displacement of growth currently proposed for the project site to other areas of El Dorado County or the region, generally.

Water Service Infrastructure. Water infrastructure would be installed on-site to provide water to the proposed development. In addition, offsite water infrastructure would be connected to the project site infrastructure at Lima Way, at Green Valley Road along the A-Drive, and/or at East Green Springs Road. With the exception of the connection to East Green Springs Road, water infrastructure would be located within existing roadway easements or proposed EVA easements, as shown in Figure III-11.

The EID provided a Facility Improvement Letter to the project applicant that outlined requirements regarding water and sewer service.[37] The letter noted that the adjacent Highland View Subdivision does not have adequate pressure or capacity to serve the proposed project.

Impact UTL-2: Existing water infrastructure does not provide adequate pressure or capacity to serve the proposed project. (S)

EID identified measures, which have been incorporated into Mitigation Measure UTL-2 below, to provide adequate fire flow and receive service.

> Mitigation Measures UTL-2: The applicant shall construct a looped water line extension connecting to the 12-inch water line located in Green Valley Road (near the future intersection of Silver Springs Parkway) and/or also to the 10-inch water line located at the intersection of Clarksville Road and Greenview Drive. Additionally, the project will be required to connect to the 8-inch water line located near the western project boundary. It is likely that at least one pressure reducing station will be required in order to accommodate this connection. The Facility Plan Report (FPR), which shall be prepared by the applicant, shall analyze the future storage in this region based on potential future developments and the timing of the project. At the current time, additional storage is not required in the Bass Lake Tank service area to meet current demand and fire flow requirements. (LTS)

Implementation of the identified mitigation measure would reduce the identified impact to a less-than-significant level.

[37] El Dorado Irrigation District, 2011. *Written communication with Joel Korotkin,* July 1.

(2) Wastewater Treatment. The project site does not currently include a connection to the EID wastewater system, and the project applicant is seeking annexation to the EID service system. As part of the connection process, the applicant would be required to pay all applicable service connection fees and charges.

As noted previously, the EDHWWTP average dry weather flow (ADWF) capacity is 4 mgd, and the 2012 average dry weather flow was 2.17 mgd. Additionally, a subsequent expansion phase of the EDHWWTP will be implemented to provide the ultimate buildout capacity of 5.45 mgd.

Assuming a wastewater generation rate of 240 gallons per day per unit, and a rate of 1 gallon per minute for the clubhouse, daily wastewater generation associated with the proposed project would be approximately 146,640 gallons per day. This amount would represent approximately 3.7 percent of the capacity of the EDHWWTP. When improvements are made to expand capacity of the EDHWWTP to 5.45 mgd, the project would represent 2.7 percent of the full buildout capacity. As there is existing treatment capacity at the EDHWWTP, and additional expansions are currently anticipated, the proposed project would not result in a significant impact related to treatment of wastewater.

Wastewater Infrastructure. Wastewater infrastructure would be installed on the project site, as shown in Figure III-11. The EID provided a Facility Improvement Letter to the project applicant that outlined service regarding water and sewer service. The letter noted several concerns about wastewater infrastructure capacity near the project site.

Impact UTL-3: There is currently inadequate wastewater infrastructure to serve the proposed project. (S)

On-site sewer improvements are shown in Figure III-11. On-site sewer improvements would include a proposed lift station to be located within the proposed EID lot (Lot Z) at the north end of Lot 2, adjacent to Green Valley Road.

However, offsite sewer improvements would be required to serve the project site. The applicant has proposed four potential offsite sewer improvement alternatives. These potential alternatives are shown in Figures IV.L-1, IV.L-2, and IV.L-3. These alternatives proposed a variety of potential off-site improvements, which could involve up-sizing existing wastewater lines, improvements to existing wastewater lines, or construction of a new lift station. If the installation of a new lift station is required, the lift station would be fully enclosed and meet all EID requirements.

The majority of off-site improvements to existing sewer lines would occur within existing roadway easements. However, all alternatives would include installation of a new wastewater line outside of a roadway easement and within a SMUD Corridor (as shown in Figure IV.L-4). This wastewater line could be installed without the removal of any additional oak trees.[38] The off-site sewer does provide nesting and foraging habitat for Swainson's hawk and the State endangered bald eagle; Mitigation Measure BIO-1 would require a qualified biologist survey the area prior to construction activities.

[38] Mann Made Resources, 2014. *Arborist Memorandum for Dixon Ranch Off-Site Sewer at SMUD Corridor,* March 31.

As part of the design of this wastewater line, and in conformance with Mitigation Measure GEO-1, a design-level geotechnical report would be prepared prior to installation of the line. No known cultural resources are within the area; however, should cultural resources be discovered during construction, Mitigation Measures CULT-1, CULT-2 and CULT-3 would reduce any impact to a less-than-significant level. In addition, Mitigation Measures AIR-1, AIR-2, and NOI-1 would be applicable to address any potential construction related impacts. However, there is a swale on the site, as well the potential for special status plant species to be disturbed during construction.

Mitigation Measure UTL-3: The project applicant, in consultation with EID and El Dorado County, shall undertake the following actions to the satisfaction of the EID and El Dorado County:

- Prior to any construction activities within the SMUD corridor, the existing swale on site shall be marked and identified by a wetland biologist, and all construction activities shall occur outside of the marked area.
- Prior to any construction activities, botanical surveys conducted by a qualified botanist at the appropriate blooming period shall occur within the off-site sewer SMUD corridor. These surveys shall include big-scaled balsamroot, Brandegee's clarkia, Bisbee Peak rush rose, and dwarf downingia. Should these or other special-status plant species be found on the project site, a mitigation plan shall be prepared and implemented to the satisfaction of the El Dorado County Development Services Division and the California Department of Fish and Wildlife.
- Wastewater Expansion: All three alternatives include the following: (1) on-site sewer lift station, force main and gravity lines; (2) connecting to the existing gravity sewer line in Lima Way; (3) improvements to split the sewer flows near the intersection of Lima Way and Aberdeen Way; and (4) use of the existing sewer system in Highland Views to the existing Highland Hills Lift Station (HHLS).
    - **Offsite Alternative 1 (Preferred Alternative).** Under this alternative, when the existing capacity of HHLS has been reached, it would be necessary to improve the existing facility in order to serve the project. In addition to HHLS improvements, a new force main would be constructed. The proposed force main alignment would start at HHLS and run through the Highland Hills subdivision within existing streets to Silva Valley Parkway. It would then continue south along Silva Valley Parkway until reaching the SMUD corridor, where it would head west along the Stone Gate subdivision boundary, ultimately making a connection to an existing 15-inch gravity line.

      The existing capacity of the gravity lines running through the streets of Highland View can adequately serve the project after the flows are split. Currently, there is capacity for an additional 200 equivalent dwelling units (EDUs) within the existing sewer line along the EID sewer access road downstream to HHLS. Once this capacity is reached, approximately 1,600 lateral feet of existing gravity sewer line within the access road would be upsized to accommodate proposed flows.[39]

[39] CTA Engineering & Surveying, 2013. *Offsite Water Improvements & Offsite Sewer Alternatives for Dixon Ranch, El Dorado Hills, California*. March, Revised August 2013.

- **Offsite Alternative 2.** Under this alternative, when capacity is reached at HHLS, a new lift station would be constructed on APN 126-360-18. This site currently houses an existing water pump. In order to accommodate the new sewer lift station, site improvements would be made. In addition, gravity sewer improvements would be made in Aberdeen Lane in the vicinity of the new station to route the flows to the new lift station. From there, a new force main would be constructed down the sewer access road and along Appian Way to Silva Valley Parkway. Once at the SMUD corridor, the force main would then head west along the Stone Gate subdivision boundary, ultimately making a connection to the existing 15-inch gravity line.
- **Offsite Alternative 3.** Under this alternative, when capacity at HHLS is reached, a new lift station would be constructed on APN 126-390-22. A new force main would also be constructed. Two potential force main alignments have been identified:
  - Alternative A would run to Loch Way, through Highland Hills subdivision within the existing streets to Silva Valley Parkway. It would then continue south along Silva Valley Parkway until reaching the SMUD corridor, where it would then head west along the Stone Gate subdivision boundary, ultimately making a connection to an existing 15-inch gravity line.
  - Alternative B would run back up the existing sewer access road, along Appian Way to Silva Valley Parkway, until reaching the SMUD corridor, where it would then head west along the Stone Gate subdivision boundary, ultimately connecting to an existing 15-inch gravity line. (LTS)

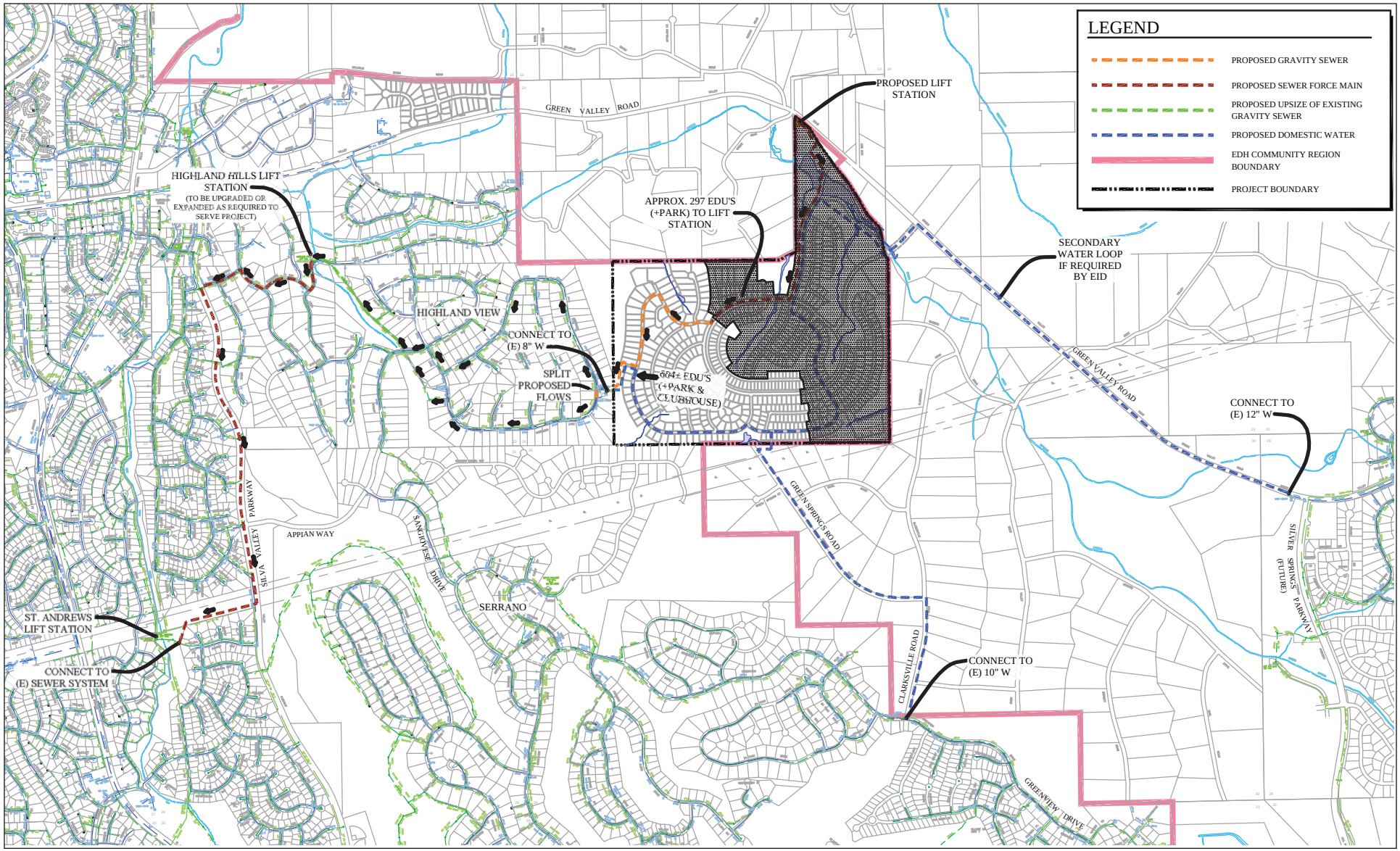
The existing capacity of the gravity lines running through the streets of Highland View can adequately serve the project after the flows are split. Currently, there is capacity for an additional 200+/- EDUs within the existing sewer line along the EID sewer access road. Once this capacity is reached, approximately 1,050 lateral feet of existing gravity sewer line within the access road would be upsized as part of the project to accommodate proposed flows.[40]

Implementation of the identified mitigation measure would reduce the potential impact to less-than-significant.

(3) Solid Waste. The California Integrated Waste Management Board estimates waste generation of 10 pounds per day for single-family homes.[41] While no waste generation rates are provided for parks or clubhouse use, for this analysis, it is assumed these uses generate 50 pounds of waste per day**.** Using these rates, the project would generate 6,100 pounds of waste per day. This represents approximately 0.07 percent of the permitted daily waste at the Potrero Hills Landfill facility. This facility is expected to remain operation until 2048. In addition, the proposed project would adhere to all required State or County waste management ordinance requirements. The proposed project would not result in a significant solid waste impact.

[40] Ibid.

[41] California Integrated Waste Management Board, 2013. *Waste Characterization, Residential Developments: Estimated Solid Waste Generation Rates,* January 16. Accessed September 19, 2013 (http://www.calrecycle.ca.gov/wastechar/wastegenrates/Residential.htm).



LSA

FIGURE IV.L-1

N

NOT TO SCALE

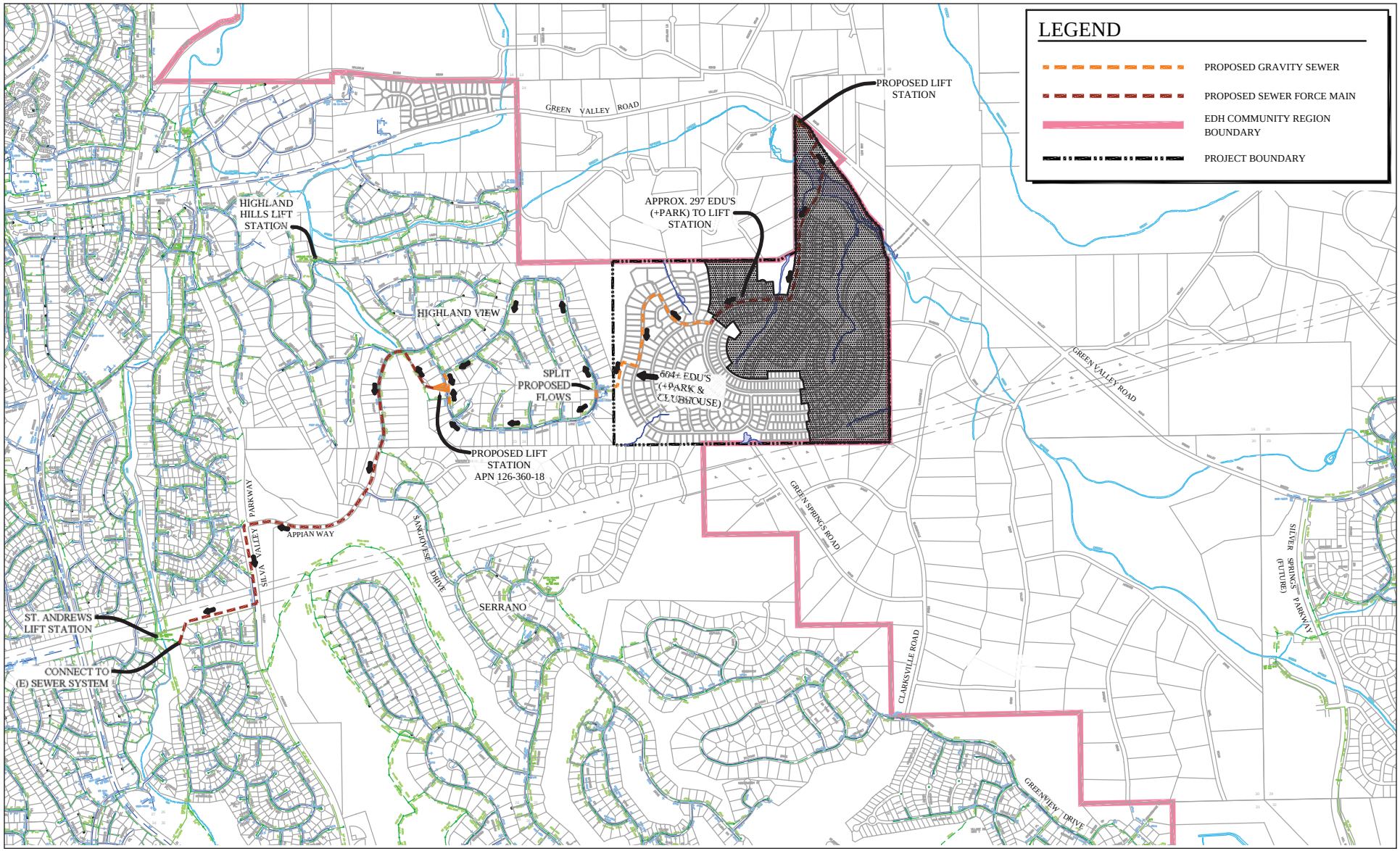
SOURCE: CTA, AUGUST 2013.

I:\EDC1101 Dixon Ranch\figures\EIR\Fig_IVL1.ai (4/16/14)

Dixon Ranch Residential Project EIR

Offsite Sewer

Alternative 1 (Preferred Alternative)



LSA

FIGURE IV.L-2

N

NOT TO SCALE

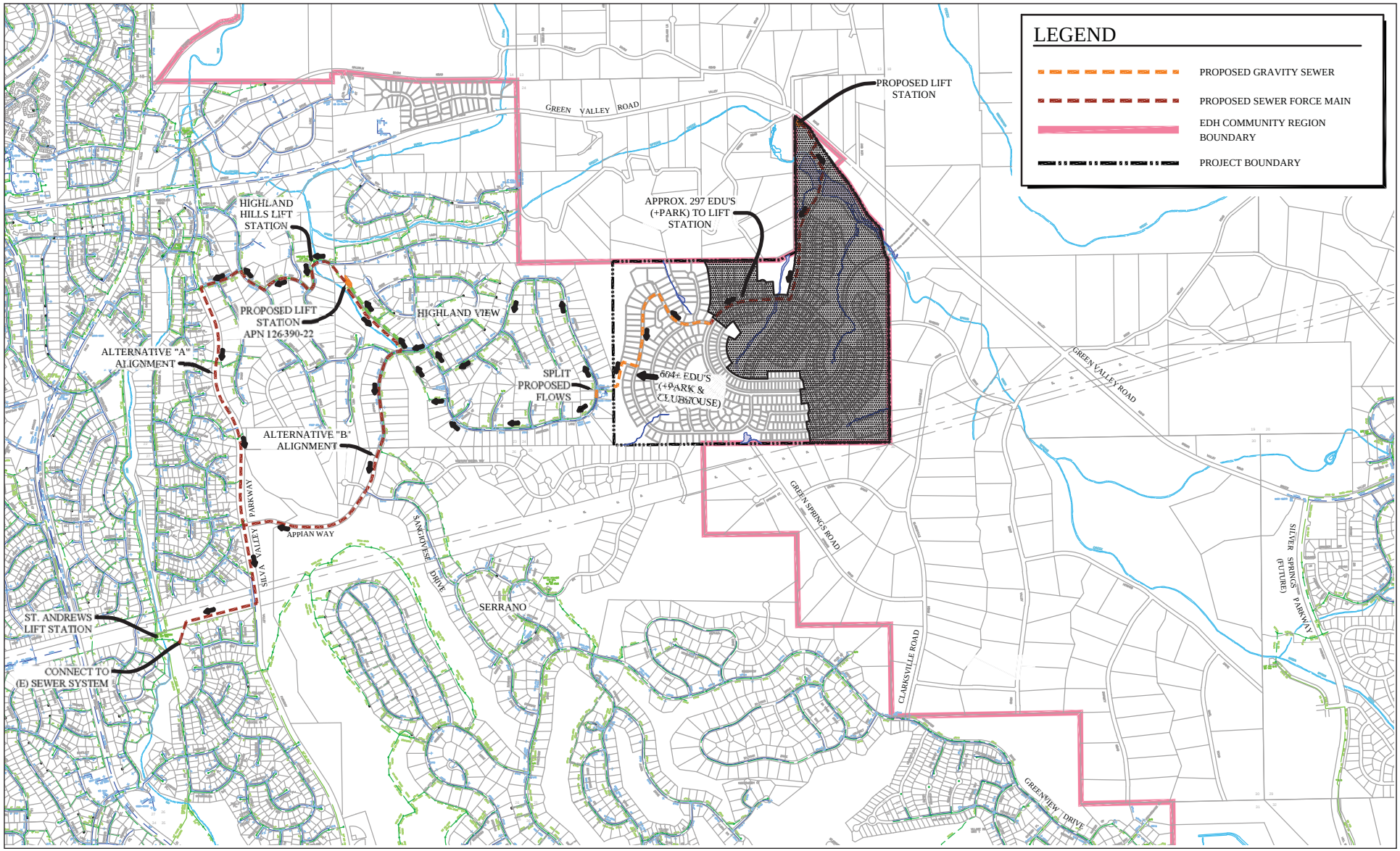
SOURCE: CTA, AUGUST 2013.

I:\EDC1101 Dixon Ranch\figures\EIR\Fig_IVL2.ai (4/16/14)

Dixon Ranch Residential Project EIR

Offsite Sewer Exhibit

Alternative 2



LSA

FIGURE IV.L-3

N

NOT TO SCALE

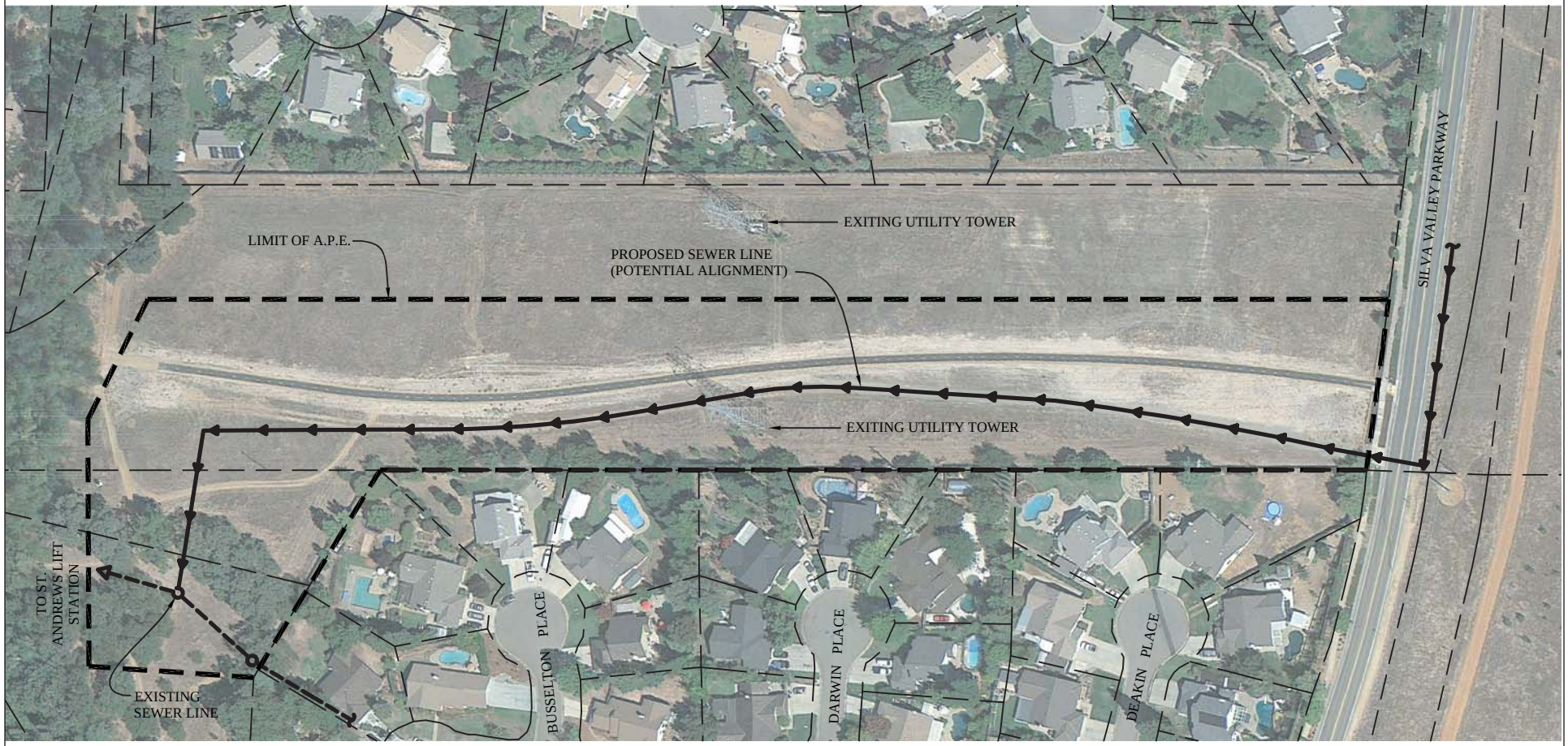
SOURCE: CTA, AUGUST 2013.

I:\EDC1101 Dixon Ranch\figures\EIR\Fig_IVL3.ai (5/8/14)

Dixon Ranch Residential Project EIR

Offsite Sewer Exhibit

Alternative 3a and 3b



LSA

FIGURE IV.L-4

N

NOT TO SCALE

SOURCE: CTA, MARCH 2014.

Dixon Ranch Residential Project EIR

Off-Site Wastewater Line within SMUD Corridor

I:\EDC1101 Dixon Ranch\figures\EIR\Fig_IVL4.ai (5/8/14)

(4) Electricity, Gas, and Telecommunications. Development of the proposed project would occur in a location that currently has electricity, gas, and telephone service. The proposed project would increase electricity and natural gas consumption, but not at a level that would be considered substantial in relation to regional or statewide energy supplies.

The project would be subject to the standards of Title 24, California's Energy Efficiency Standards for Residential and Nonresidential Buildings. Title 24 measures consist of developing an energy budget for structures and designing the structures to use no more energy that what is budgeted. The project would not result in energy demands that would require the development of new energy sources or affect service to existing customers. The proposed project would have a less-than-significant impact on electricity, gas, and telecommunications.

(5) Energy Conservation. Appendix F of the *CEQA Guidelines* requires that an EIR include information on the energy implications of a project, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. Implementation of the proposed project would use more energy than the existing on-site conditions. The implementation of the project would consume a large amount of energy in both the short-term during project construction and in the long-term during project operation. The proposed project would consume energy in four forms: (1) the fuel energy consumed by construction vehicles; (2) bound energy in construction materials, such as asphalt, steel, concrete, pipes, and manufactured or processed materials such as lumber and glass; (3) ongoing energy required for interior and exterior lighting, heating/ventilating/air conditioning (HVAC), computer and home electronics systems, electric cooking ranges, refrigerators, freezers, and security systems; and (4) the consumption of transportation energy.

Construction Vehicles. Fossil fuels used for construction vehicles and other energy consuming equipment would be used during project construction. Implementation of Mitigation Measure AIR-2 would ensure that fuel energy consumed in the construction phase would not be wasted through unnecessary idling or through the operation of poorly maintained equipment.

Construction Materials. The incremental increase in the use of energy bound in construction materials such as asphalt, steel, concrete, pipes and manufactured or processed materials such as lumber and gas would not substantially increase demand for energy compared to overall local and regional demand for construction materials. Construction materials would not be used in a wasteful manner in order to reduce project construction costs.

Operational Energy Requirements. In accordance with California Energy Code Title 24, the proposed project would not use energy in a wasteful manner. Minimum efficiency standards for household appliances, water and space heating and cooling equipment and insulation for doors, pipes, walls and ceilings would ensure that the proposed project would not use energy in a wasteful manner. Additionally, Mitigation Measures AIR-3 and GHG-1 would further ensure that energy is not used in a wasteful manner.

Transportation Energy. Implementation of the proposed project would require additional energy for transportation uses within El Dorado County. State and federal regulations regarding fuel efficiency standards for vehicles in California are designed to reduce wasteful, unnecessary and inefficient use of energy for transportation. In accordance with Mitigation Measure AIR-3, the proposed project would include pedestrian sidewalks and trails. The inclusion of park areas within

walkable distances in the project areas would reduce the energy consumption related to vehicle miles traveled associated with the implementation of the proposed project.

c. Cumulative Impacts. Development of the proposed project and cumulative projects would increase demand for water, wastewater service, solid waste disposal, and electricity/gas on a regional level. Utility improvements funded by the project sponsor, routine expansions of wastewater treatment infrastructure, and implementation of energy conservation measures would ensure that cumulative development within the County would result in less-than-significant impacts.

As noted above, the WSA concluded that adequate water supply is available to serve the project site and anticipated development. The project would construct water infrastructure on-site and offsite, and would be required to meet EID specifications. Implementation of the project would require on-site and off-site wastewater improvements. As additional projects are proposed and reviewed, site specific analysis would be undertaken to identify and rectify any wastewater infrastructure shortfalls. As noted above, the Potrero Hills Landfill facility is expected to remain in operation until 2048, and would have capacity to accommodate solid waste from cumulative development. The proposed project, in combination with other past, present, and reasonably probable future projects, would not result in any significant cumulative utility impacts. This impact, therefore, would be less than significant.

M. PUBLIC SERVICES

This section analyzes the potential impacts of the proposed project on public services, including: fire protection; police services; schools; open space; and recreation facilities. Potential impacts that could result from the proposed project are identified, and mitigation measures are recommended, as appropriate.

1. Setting

This section discusses current service locations, capacities, and planned expansion relating to public services, utilities, and recreation.

a. Fire Protection. A portion of the project site is within the Rescue Fire Protection District, and a portion is within the El Dorado Hills Fire Department Sphere of Influence. As the proposed project is proposed to be annexed into the El Dorado Hills Fire Department (EDHFD) service area, the following discussion focuses on the services provided by that department.

The El Dorado Hills Fire Department (EDHFD) provides fire suppression, emergency medical services and fire prevention within the El Dorado Hills community. Pre-hospital emergency medical and dispatch services are provided by EDHFD in cooperation with County Service Area No. 7 and El Dorado County Regional Pre-Hospital Emergency Services Operations Authority. EDHFD staffing, facilities, equipment, and response times are described below.

(1) Staffing. EDHFD consists of the following three divisions: Administrative, Support, and Operations. As of February 2013, staffing at EDHFD includes 55 personnel, which includes 10 staff in the Administrative Division (Fire Chief, Deputy Chief, Battalion Chief/Fire Marshal, Battalion Chief/Training, and 6 administrative support staff), and 45 staff (12 fire captains, 12 engineers and 21 firefighter paramedics) in the Operations Division. The EDHFD also utilizes 30 volunteer firefighters.[1] On a daily basis, EDHFD equipment and staffing consists of 3 engines (captain, engineer, and firefighter), one Truck (captain, engineer, 2 firefighters), and one Medic Unit (2 firefighters). A staff Chief also covers calls during the day and nighttime.[2]

Facilities and Equipment. Station 84 (also known as the Marina Station), located at 2180 Francisco Drive, is approximately 2.5 miles to the west and the closest fire station to the project site.[3] Station 84 is staffed by a captain, engineer, and firefighter, and houses one Type 1 (staffed) and one Type 3 (unstaffed) fire engine**.**

Station 85, located at 1050 Wilson Boulevard, is the second closest station to the project site and also serves as the EDHFD's administrative headquarters. Station 85 is located 5.1 miles southwest of the project site. [4] Station 85 is staffed by a captain, engineer, and four firefighters (two of which are on a

[1] Lilienthal, Michael, 2013. Battalion Chief/Fire Marshall. El Dorado Hills Fire Department, 2013. Personal communications with LSA Associates, Inc. February 21.

[2] Ibid.

[3] El Dorado Hills Fire Department, 2012. *Fire Station Locations*. Website: www.edhfire.com/contact-us/fire-station-locations (accessed November 29, 2012).

[4] Ibid.

Medic Unit), and houses one truck that is staffed 24 hours a day with a captain, engineer, and two firefighters, and one Medic Unit that is also staffed 24 hours with two firefighters. Station 85 also houses one Type 1 fire engine, one Type 5 fire engine, an Air Unit, and a Reserve Medic Unit (all of which are unstaffed).[5]

(2) Response Times. The EDHFD's response time goal 6 minutes 90 percent of the time. As of January 2013, EDHFD has met this performance goal 88 percent of the time at Station 84 and 72 percent of the time at Station 85.[6]

EDHFD participates in joint dispatching with other fire agencies in El Dorado County, in which the closest uncommitted unit responds to emergency calls, regardless of jurisdiction. In addition, the EDHFD participates in the Master Mutual Aid System for the State of California, which provides staff and mechanical assistance throughout the State.

b. Police Services. The El Dorado County Sheriff's Office is located at 300 Fair Lane in Placerville. The closest station to the project site, the El Dorado Hills Sub Station (EDH Sub Station), is located at 4354 Town Center Drive and is approximately 6.8 miles southwest of the project site.

(1) Staffing and Patrol Areas. The Sheriff's Office has a current staff of 250 sworn and 108 non-sworn personnel.[7] The Sheriff's Office sworn personnel includes one sheriff-coroner, one under-sheriff, three captains, seven lieutenants, 23 sergeants, 125 deputy sheriffs, and 90 correctional officers. Non-sworn personnel include 3 manager, 94 professional civilian professionals, and 11 security officers.[8]

The Patrol Division consists of the West Slope and Lake Tahoe areas. The West Slope patrol is responsible for the unincorporated area of El Dorado County from Strawberry to the El Dorado/ Sacramento County line and from the North Fork of the American River to the Highway 88/ Consumes River border and includes the project site.[9] The West Slope patrol includes one captain, 2 lieutenants, 10 sergeants, and 73 patrol deputies. Patrol deputies work 12-hour shifts with split times to ensure maximum coverage during peak business times.[10]

The Lake Tahoe patrol is responsible for the unincorporated area of El Dorado County from Strawberry east, to South Lake Tahoe and the Nevada State line and from Alpine County to the south and the Placer County line on the north.[11]

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[5] Lilienthal, Michael, 2013, Battalion Chief/Fire Marshall, op. cit.

[6] El Dorado Hills Fire Department, 2013. Meetings, Minutes, and Agendas. Website: www.edhfire.com/ administration/bod/minutes-and-agendas (accessed February 22).

[7] El Dorado County Sheriff's Office, 2013. *2012 Annual Report*.

[8] Ibid.

[9] Ibid.

[10] Ibid.

[11] Ibid.

(2) Response Times. The Sheriff's Office's average response times for the El Dorado Hills area are: 5 minutes and 56 seconds for Priority 1 calls; 6 minutes and 42 seconds for Priority 2 calls; 6 minutes and 30 seconds for Priority 3 calls; and 8 minutes and 4 seconds for Priority 4 calls.[12,13]

(3) Law Enforcement Issues. Countywide, primary law enforcement issues during 2012 included assaults, larceny, and burglary.[14] In 2012, the Sheriff's Office received 67,007 calls for service, which represented a 5 percent decrease from the number of calls for service made in 2011. The most common types of calls for service received related to traffic, medical and fire assistance, and alarm activation.[15]

c. Schools. The project site is within the vicinity of the Rescue Union School District (RUSD) and the El Dorado Union High School District (EDUHSD). These districts are described below.

(1) Rescue Union School District. The RUSD operates seven schools serving the communities of Cameron Park, El Dorado Hills, Shingle Springs and Rescue, including five elementary schools (K-5) and two middle schools (6-8).[16] The project site would be served by two elementary schools (Jackson Elementary School [K-5] and Green Valley Elementary School [K-5]), and two middle schools, Marina Village Middle School (6-8) and Pleasant Grove Middle School (6-8).[17]

The district-wide enrollment for the 2012-2013 school year was 3,899.[18] Current enrollment and Capacity at Jackson Elementary, Green Valley Elementary, Marina Village Middle, and Pleasant Grove Middle Schools are shown in Table IV.M-1.

New development is required to provide necessary funding and/or capital facilities for the school system, as determined by applicable State-mandated development impact fees. The developers of residential developments are required to pay $1.81 per square foot of dwelling area for the development of school facilities (assuming the developers do not develop school facilities as part of the project). Commercial and Industrial developers are required to pay $0.29 per square.[19]

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[12] Priority 1 calls are considered the highest priority calls and signal emergency dispatch.

[13] Becker, Tim, 2013. Lieutenant. El Dorado County Sheriff's Office. Personal communications with LSA Associates, Inc. June 21.

[14] El Dorado County Sheriff's Office, 2013, op. cit.

[15] Ibid.

[16] Rescue Union School District, 2012. Schools in District. Website: rusd-ca.schoolloop.com/Schools (accessed November 29, 2012).

[17] Rescue Union School District, 2012. School Locator. Website: www.schoolworksgis.com/Rescue/schoollocator.html (accessed November 29, 2012).

[18] California Department of Education, 2013. Educational Demographics Unit, Enrollment by Grade for 2012-2013, District and School Enrollment by Grade, Rescue Union School District. Website: dq.cde.ca.gov/dataquest/Enrollment/GradeEnr.aspx?cChoice=DistEnrGr2&cYear=2012-13&cSelect=0961978--RESCUE%20UNION%20ELEMENTARY&TheCounty=&cLevel=District&cTopic=Enrollment&myTimeFrame=S&cType=ALL&cGender=B (accessed September 5, 2013).

[19] Creel, Wendy, 2012. Secretary I, El Dorado County Office of Education. Written communication with LSA Associates, Inc. November 30.

Table IV.M-1: 2012-2013 RUSD Enrollment and Capacities

School	Enrollment	Capacity	Excess Capacity [a]
Jackson Elementary	453	453	0
Green Valley Elementary	597	597	0
Marina Village Middle School	804	804	0
Pleasant Grove Middle School	611	611	0
Total	**2,465**	**2,465**	**0**

[a] Positive numbers mean a school is under capacity.

Source: Rescue Union School District, Chief Business Official, Michael Albaugh personal communication with LSA Associates, Inc., 2013.

RUSD has a current maximum classroom student-to-teacher ratio of 30:1 for elementary schools and a ratio of 31:1 for middle schools.[20] RUSD uses a student generation rate of 0.556 students for residential units.

(2) El Dorado Union High School District. The EDUHSD operates ten schools serving the communities of Cameron Park, El Dorado Hills, Shingle Springs, Diamond Springs, Cold Springs, Coloma, Camino, Pollock Pines and the City of Placerville. Schools within the EDUHSD include four comprehensive high schools (9-12), five continuation and alternative high schools, and one virtual high school.[21] District-wide enrollment for the 2012-2013 school year was 6,862. The project site is located in the Oak Ridge High School attendance area; however EDUHSD does not guarantee that school-aged residents from the project site would be assigned to this high school.[22] Oak Ridge High School is located at 1120 Harvard Way in El Dorado Hills.

As shown in Table IV.M-2, the number of students enrolled at Oak Ridge High School for the 2012-2013 school year was 2,306, representing approximately 33.6 percent of current district-wide enrollment. Oak Ridge High School is currently operating at approximately 98 percent capacity.[23]

Table IV.M-2: 2012-2013 Enrollment and Capacities

School	Enrollment	Capacity	Excess Capacity [a]	Percent Full (%)
Oak Ridge High School	2,306	2,361	+55	97.7
District-wide	6,862	8,015	+1,153	85.6

[a] Positive numbers indicate additional capacity.

Source: El Dorado Union High School District and LSA Associates, Inc., 2013.

[20] Rescue Union School District, 2013. Statistics. Website: rusd-ca.schoolloop.com/cms/page_view?d=x&piid=&vpid=1301128248262 (accessed June 19).

[21] El Dorado Union High School District, 2012. Our District High Schools and Programs. Website: www.eduhsd.k12.ca.us/EDUHSD%20Schools.htm (accessed November 30).

[22] Tranter, Karen, 2013. Administrative Assistant. El Dorado Union High School District. Personal communication with LSA Associates, Inc. February 1.

[23] Ibid.

The estimated projected enrollment for the 2013-2014 school year for Oak Ridge High School and EDUHSD are 2,331 and 6,866 students, respectively. This projected enrollment yield would be similar to the 2012-2013 school year. For the 2018-2019 school year, EDUHSD anticipates that Oak Ridge High School would be operating at 94.8 percent capacity and schools district-wide would be operating at 82.9 percent capacity.[24]

EDUHSD has a current maximum classroom student-to-teacher ratio of 32:1. EDUHSD uses a student generation rate of 0.161 students per unit for residential units.[25] In June 2008, voters approved a $66.3 million bond, known as Measure Q. Funding from this bond is used to repair, update, construct, furnish, and equip school facilities, including technology, job training, science and health facilities, roofs, electrical, plumbing and heating systems. In September 2008, $34 million in bonds were issued for these projects.[26]

New development is required to provide necessary funding and/or capital facilities for the school system, as determined by applicable State-mandated development impact fees. The proposed project would be subject to Level 1 development impact fees, where the maximum fees for residential development is $2.97 per square foot for EDUHSD and RUSD. On the Western Slope, EDUHSD and elementary feeder districts have an agreement as to how fee revenues must be shared, under which elementary and middle school grades (K-8) would be allowed to collect 61 percent of the maximum fee amount, and high school grades (9-12) would be allowed to collect 39 percent of the maximum amount. EDUHSD's portion of the Level 1 fees is $1.16.[27] No new school facilities are currently planned for development that would benefit the project area.[28]

d. Parks and Recreation. El Dorado County and local community service and recreation districts, such as the El Dorado Hills Community Service District (EDHCSD), provide parks and trail facilities to El Dorado County residents. Descriptions of these parks and facilities are provided below.

(1) Local Community Service and Recreation Districts. Park facilities within local community service and recreation districts are intended primarily to serve the residents of respective communities, but are generally open to all members of the public. Each of these entities undertakes its own comprehensive planning process to evaluate current and projected park and trail needs for its residents.

The project site is located within the EDHCSD sphere of influence. The EDHCSD owns and operates parks, trails, and recreational programs. The EDHCSD includes approximately 140 acres of existing park space.[29] Table V.M-3 shows existing parks in EDHCSD and its approximate distance from the project site.

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[24] Ibid.

[25] Ibid.

[26] El Dorado Union High School District, 2013. Bond Measure Q. Website: www.eduhsd.k12.ca.us/Bond/Bond%20Meas-Q%20Comm.htm (accessed February 5).

[27] Tranter, Karen, 2013, Administrative Assistant, El Dorado Union High School District, op. cit.

[28] Ibid.

[29] El Dorado County, 2012. *El Dorado County Parks and Trail Master Plan.* Appendix B-City and District Parks. March 27.

EDHCSD uses a standard of 5 acres per 1,000 residents for neighborhood and community parks as guidelines for acquisition and development of park facilities.

(2) El Dorado County. El Dorado County is responsible for managing and maintaining six public recreational facilities and owns additional land to be developed into four future parks. The County's existing park and recreational space include neighborhood, community, and regional parks. As shown in Table V.M-4, El Dorado County has a total of approximately 274 acres of existing and proposed park and recreational facilities, of which 139 acres are existing and approximately 134 acres are proposed. El Dorado County also maintains the El Dorado Trail with the City of Placerville and the Rubicon Trail.

El Dorado County uses a standard of 1.5 acres per 1,000 residents for regional and community parks, and a standard of 2 acres per 1,000 residents for neighborhood parks as guidelines for acquisition and development of park facilities.

Table IV.M-3: Existing Parks in El Dorado Hills Community Service District

Park/Facility Name	Acreage	Location and Driving Distance from Project Site	Amenities
El Dorado Hills CSD			
Village Green Park	10	Located at the corner of Silva Valley and Serrano Parkways (approximately 5 miles southwest of project site)	Lawn Area/Native Oak Trees/Large Pond/ Stream and Waterfalls/Picnic Tables/Children's Play Structure/Walking Paths
El Dorado Hills Community Park	40	Located at 1021 Harvard Way (approximately 4 miles southwest of the project site)	3 multi-use sports fields/Basketball courts Nature Area/Picnic tables and barbecue/ Playground/Horseshoe pit/Courtyard/ Swimming pool/Pavilion Meeting/banquet facility (Senior Lounge, Classroom, Dance Room, Commercial Kitchen, Park Amenities)/ Restrooms/Teen Center Skate Park
New York Creek Nature Trail	28	Access located at Art Weisberg Park and Community Park	1.5 mile trail
Bass Lake (Sellwood) Field	3	Located off of Serrano Parkway, just northwest of Bass Lake Road (approximately 5 miles southeast of project site)	300-foot baseball field with a competition/ regulation soccer field overlay
Murray Homestead Park	4	Located along Aberdeen Lane and Amer Way (approximately 2.5 miles east of project site)	Large Natural Grass Area/Children's Play Structure/Picnic Tables/Barbecue Pit
Oak Knoll Park	2.6	Located off of Alyssum Circle (approximately 4 miles southeast of project site)	Clubhouse/Children's Play Structure/Grass Volley Ball Court/Native Oak Trees/Picnic Table/Parking lot
Fairchild Park	2.46	Located off of Brackenwood Place (approximately 3 miles west of project site)	Natural Turf/Children's Play Structure/Paved and Gravel Paths/Large Oak Trees/Picnic Table/ Drinking Fountain/Indian Grinding Rocks
Overlook Park	1.18	Access located at Kensington Drive or Beechwood Court (approximately 3 miles northwest of project site)	Children's Play Structure/Lawn Area/Picnic Tables/Barbeque/Drinking Fountain/Large Oak Tree
Wild Oaks Park	10.5	Located near the intersection of El Dorado Hills Blvd and Francisco Drive (approximately 3 miles west of project site)	Native oak and pine trees along with native grasses/Unimproved walking trails/Benches

Table IV.M-3: Existing Parks in El Dorado Hills Community Service District

Park/Facility Name	Acreage	Location and Driving Distance from Project Site	Amenities
Windsor Point Park	1	Located at the intersection of Francisco Drive and Schooner Drive (approximately 3 miles northwest of project site)	Natural area/Bench/Picnic Table/Basketball half-court/BBQ/Turf area
Lake Forest Park	9.76	1821 Francisco Drive (approximately 3 miles northwest of project site)	Children's Play Structure/Drinking Fountain/Group Picnic Area/Sand Volleyball/Bocce Ball/Two Tennis Courts/Nature Trail/Outdoor Classroom/Restroom
Waterford Park	1.15	Located at at the corner of Carnelian Circle and Bairdsley Place (approximately 3 miles northwest of project site)	Lawn Area/Picnic Tables/Water Fountain/ Children's Play Structure
Allan Lindsey Park	5	Located on Silva Valley Parkway, between Entrada Drive and Oak Meadow Elementary School (approximately 5 miles southeast of project site)	Baseball fields (2)/Soccer fields (2)/Shaded picnic area
Laurel Oaks Park	1.7	Located on Whistlers Bend Way (approximately 7 miles southeast of project site)	Children's Play Structure/Drinking Fountain/ Picnic Tables/Basketball Hoop/Natural Turf Field
Art Weisberg Park	4.27	Located on the corner of Francisco and Pendleton Drives, and across the street from Jackson Elementary School (approximately 3 miles west of project site)	Lawn Area/Picnic Tables/Barbeques/Horseshoe Pits/Drinking Fountain/Native Oak Trees/ Natural Open Space/Short Walking Trails
William McCabe Park	4.7	Located at the intersection of El Dorado Hills Blvd. and Francisco Drive (approximately 3 miles west of project site)	Children's Play Structure/Picnic Tables/ Barbecue Pits/Natural Turf Area/Drinking Fountain
Stephen Harris Park	5.93	Located off of Tam O'Shanter Drive (approximately 3.5 miles west of project site)	Tennis Courts (4)/Tennis Practice Wall/Basket-ball Hoops (2)/Soccer Field/¼-mile Walking/ Jogging Path/Exercise "Par" course/Children's Play Structure/Picnic Tables/Barbecue Pits/Drinking Water Faucets/Parking Lot
Total:	**135.25**		

Source: El Dorado Hills Community Service District; LSA Associates, Inc., 2013.

Table IV.M-4: El Dorado County Existing and Proposed Park and Recreation Areas

	Existing		Proposed	
Type of Park	**Number of Parks**	**Acreage (acres)**	**Number of Parks**	**Acreage (acres)**
Neighborhood Parks	1	2.7	0	0.0
Community Parks	3	73.0	1	26.0
Regional Parks	2	63.7	3	108.3
Total	**6**	**139.4**	**4**	**134.3**

Source: El Dorado County Parks and Trails Master Plan, 2012.

Existing park facilities near the project site include: Gateway Park, located approximately 3.5 miles southeast of the project site, which includes trails, a youth ball field, and picnic areas; Cameron Park Lake, located approximately 4 miles southeast of the project site, which includes tennis courts, a playground, walking/jogging trail, boat rentals, and a swim area; and Rasmussen Park, located approximately 4.5 miles southeast of the project site, which includes multi-use fields, a playground, and a picnic area. Bradford Park is located approximately 9 miles southeast of the project site in Shingle Springs and includes a large children's play area, a small sports field, a large covered picnic area, and a parking lot.

e. Regulatory Framework. This section describes applicable State, regional plans, and local policies and regulations that pertain to public services.

(1) State and Regional Policies. Relevant State and regional plans and policies are described below.

Quimby Act. Section 66477 of the Government Code (the Quimby Act) authorizes jurisdictions to establish ordinances requiring developers of residential subdivisions to dedicate parkland or pay in-lieu fees for park and recreation purposes. This provision of the State Subdivision Map Act enables cities and counties to require the dedication of land and/or payment of in-lieu fees for parks and recreation purposes as a condition of approval of a tentative map or parcel map subdivision. AB 1600 amended the Quimby Act in 1982 to hold local governments more accountable for imposing park development fees. The AB 1600 amendment requires agencies to clearly show a reasonable relationship between the public need for the recreation facility or park land and the type of development project upon which the fee is imposed. Cities and counties are required to show a strong direct relationship, or nexus, between the park fee exactions and the proposed project. Local ordinances must include definite standards for determining the proportion of the subdivision to be dedicated and the amount of the fee to be paid by the developer. AB 2936 was adopted as an amendment to the Quimby Act in 2002, and allows counties and cities to spend up to 10 percent of their Quimby Act fees to prepare master plans for park and recreation facilities every three years. El Dorado County works with cities and special districts to acquire land for and develop neighborhood and community parks using the Quimby Act as funding allows.

(2) El Dorado County General Plan. The El Dorado County General Plan includes the following policies and programs related to public services.

Public Services and Utilities Element

- *Goal 5.1: Provision of Public Services*. Provide and maintain a system of safe, adequate, and cost-effective public utilities and services; maintain an adequate level of service to existing development while allowing for additional growth in an efficient manner; and, ensure a safe and adequate water supply, wastewater disposal, and appropriate public services for rural areas.
- Policy 5.1.2.1: Prior to the approval of any discretionary development, the approving authority shall make a determination of the adequacy of the public services and utilities to be impacted by that development. Where, according to the purveyor responsible for the service or utility as provided in Table 5-1, demand is determined to exceed capacity, the approval of the development shall be conditioned to require expansion of the impacted facility or service to be available concurrent with the demand, mitigated, or a finding made that a CIP project is funded and authorized which will increase service capacity.

- Policy 5.1.2.2: Provision of public services to new discretionary development shall not result in a reduction of service below minimum established standards to current users, pursuant to Table 5-1.

The following Levels of Service shall apply to the review of discretionary projects:

El Dorado County General Plan Table 5-1: Minimum Levels of Service		
	Community Region	**Rural Center and Rural Region**
Public water source	As determined by purveyor	As determined by purveyor, when applicable
Private wells	Environmental Management	Environmental Management
Public water treatment capacity	As determined by purveyor	As determined by purveyor
Public sewer treatment capacity	As determined by purveyor	As determined by purveyor
On-site sewage disposal	Environmental Management	Environmental Management
Storm drainage	Department of Transportation	Department of Transportation
Solid waste	Environmental Management	Environmental Management
Country and State road circulation system	LOS E	LOS D
Schools	As determined appropriate by the school districts	As determined appropriate by the school districts
Parks	Specific plan for new communities or Quimby Fee/dedication program for tentative maps	Quimby Fee/dedication program for tentative maps
Fire district response	8-minute response to 80% of the population	15 to 45-minute response
Sheriff	8-minute response to 80% of the population	No standard
Ambulance	10-minute response to 80% of the population	20-minute response in Rural Regions and "as quickly as possible" in wilderness areas*
*In accordance with State standards		

- *Objective 5.1.3: Efficient Development Pattern*. Promote a development pattern that permits the efficient delivery of public services in a cost-effective manner.
- Policy 5.1.3.1: Growth and development and public facility expenditures shall be primarily directed to Community Regions and Rural Centers.
- Policy 5.6.1.2: Reserve adequate rights-of-way to facilitate expansion of services in a timely manner.
- *Goal 5.7: Emergency Services.* Adequate and comprehensive emergency services, including fire protection, law enforcement, and emergency medical services.
- *Objective 5.7.1: Fire Protection (Community Regions).* Ensure sufficient emergency water supply, storage, and conveyance facilities are available, and that adequate access is provided for, concurrent with development.
- Policy 5.7.1.1: Prior to approval of new development, the applicant will be required to demonstrate that adequate emergency water supply, storage, conveyance facilities, and access for fire protection either are or will be provided concurrent with development.
- *Objective 5.7.2: Fire Protection (Rural regions and Rural Centers).* Sufficient emergency water supply, storage, and conveyance facilities for fire protection, together with adequate access are available, or are provided for, concurrent with development.
- Policy 5.7.2.1: Prior to approval of new development, the responsible fire protection district shall be requested to review all applications to determine the ability of the district to provide protection services. The ability to provide fire protection to existing development shall not be reduced below acceptable levels as a consequence of new development. Recommendations such as the need for additional equipment, facilities, and adequate access may be incorporated as conditions of approval.

- *Objective 5.7.3: Law Enforcement.* An adequate, comprehensive, coordinated law enforcement system consistent with the needs of the community.
- Policy 5.7.3.1: Prior to approval of new development, the Sheriff's Department shall be requested to review all applications to determine the ability of the department to provide protection services. The ability to provide protection to existing development shall not be reduced below acceptable levels as a consequence of new development. Recommendations such as the need for additional equipment, facilities, and adequate access may be incorporated as conditions of approval.
- *Objective 5.7.4: Medical Emergency Services.* Adequate medical emergency services available to serve existing and new development recognizing that levels of service may differ between Community Regions, and Rural Centers and Regions.
- Policy 5.7.4.1: Prior to approval of new development, the applicant shall be required to demonstrate that adequate medical emergency services are available and that adequate emergency vehicle access will be provided concurrent with development.
- Policy 5.7.4.2: Prior to approval of new development, the Emergency Medical Services Agency shall be requested to review all applications to determine the ability of the department to provide protection services. The ability to provide protection to existing development shall not be reduced below acceptable levels as a consequence of new development. Recommendations such as the need for additional equipment, facilities, and adequate access may be incorporated as conditions of approval.
- *Objective 5.8.1: School Capacity*. Require that adequate school capacity exists and/or appropriate mitigation consistent with State law to serve new residents concurrent with development.
- Policy 5.8.1.1: School districts affected by a proposed development shall be relied on to evaluate the development's adverse impacts on school facilities or the demand therefore. No development that will result in such impacts shall be approved unless:
    1. To the extent allowed by State law, the applicant and the appropriate school district(s) have entered into a written agreement regarding the mitigation of impacts to school facilities; or
    2. The impacts to school facilities resulting from the development are mitigated, through conditions of approval, to the greatest extent allowed by State law.
- Policy 5.8.2.2: The affected school district shall be relied upon to review development applications to determine the ability of the district to serve the new development. The level of educational services shall not be reduced below acceptable levels as a consequence of new development to the extent permitted by State law.

(3) El Dorado Hills Community Service District Parks and Recreation Facilities Master Plan. The El Dorado Hills Community Service District (EDHCSD) Parks and Recreation Facilities Master Plan (2007), provides a 15-year vision for how parks, facilities, and recreation programs will be managed in the EDHCSD to respond to anticipated growth and changing recreation trends. The plan includes the vision and priorities of district residents, implementation strategies, and analysis of funding requirements.[30]

2. Impacts and Mitigation Measures

This section discusses public services impacts that could result from the proposed project. The section begins with the significance criteria, which establish the thresholds used to determine whether an

[30] Ibid.

impact is significant. The latter part of this section presents the impacts associated with the proposed project and identifies mitigation measures, if appropriate. Less-than-significant impacts are discussed first, followed by significant impacts and then cumulative impacts.

a. Significance Criteria. Development of the proposed project would have a significant impact on the environment related to public services if it would:

- Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically 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 following public services: fire protection; police protection; schools; or parks;
- Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; or
- Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

b. Project Impacts. The following discussion describes the potential impacts related to public services that would result from implementation of the proposed project.

(1) Fire Protection. EDHFD indicated that it has adequate equipment and staffing to serve the proposed project, but implementation of the proposed project would result in an increased need for emergency medical and fire protection services at the project site.[31] The closest fire engine (Engine 84) would be able to reach the project site entrance on Green Valley Road in approximately 3 minutes, assuming no traffic and that Green Valley Road was not blocked. If fire personnel were required to use an EVA to access the project site, the response time would be longer.

The ability of the EDHFD to access the site, as well as residents to evacuate, is of concern as the project site is located within the Moderate Fire Hazard Severity Zone, as determined by the California Department of Forestry and Fire protection. [32]

The EDHFD provided a letter to the County outlining requirements to provide fire and emergency medical services to the project site consistent with the El Dorado County General Plan, State Fire Safety Regulations, as adopted by the El Dorado County and the California Fire Code as amended locally.[33] All of the provisions identified by the EDHFD requiring compliance with their fire standards including, but not limited to: location of and specifications for fire hydrants; emergency vehicle access including roadway widths and turning radii; fire flow and sprinkler requirements; and defensible space and wildland fire-safe plans will be conditioned on the project, thereby reducing wildfire risk and public service impacts to less than significant.

[31] Lilienthal, Michael, 2013. Battalion Chief/Fire Marshall, El Dorado Hills Fire Department. Written communication to LSA Associates, Inc, February 21.

[32] California, State of, 2007. Department of Forestry and Fire Protection (CAL FIRE). Wildland Hazard and Building Codes. El Dorado County FHSZ Map. Website: www.fire.ca.gov/fire_prevention/fhsz_maps_eldorado.php.

[33] Lilienthal, Michael, 2013. Battalion Chief/Fire Marshall, El Dorado Hills Fire Department. Written communication to Pierre Rivas, El Dorado County Planning Department, June 7. Email communication to Lillian MacLeod, El Dorado County Planning Department, January 10, 2014.

(2) Police Protection. The proposed project would increase demand for police services due to the increased population and development at the project site. However, the increase in demand is expected to be incremental, and is not expected to require construction of a new police station to serve the project. According to the Sheriff's Office, funding considerations to supply increased police protection services would be addressed by the County Board of Supervisors.[34] Implementation of the proposed project would likely not require the construction of a new police station, construction of which could cause a significant environmental impact. The proposed project would result in a less-than-significant police protection impact.

(3) Schools. The proposed project would include 604 new residential units; however, 160 of the units would be "age-restricted" units for residents 55 years and older. For this school population analysis, it is assumed that age-restricted units would not generate elementary and high school students. Additionally, there is one existing residential unit on the project site that would remain after construction of the project.

The project would include 444 new units (604 new units – 160 age-restricted units) that would generate additional students within the school district. Using student generation rates provided by RUSD and EDUHSD (see Table IV.M-5), the project site could generate approximately 319 students. The table shows the projected distribution of new students in each school district.

Table IV.M-5: Project Related Student Generation

District	Proposed Dwelling Units	Student Generation Rate Used by School District for Residential Developments	Additional Students Generated by Proposed Project
Rescue Union School District	444	0.556	247
El Dorado Union High School District	444	0.161	72
		Total Students	**319**

Source: LSA Associates, 2014.

Rescue Union School District. As shown in Table IV.M-1, the Jackson Elementary School and Green Valley Elementary are currently at 100 percent capacity, and Marina Village Middle and Pleasant Grove Middle Schools are currently at 100 percent capacity.[35] Based on the student generation rates shown in Table IV.M-5, the addition of 444 dwelling units on the project site would generate approximately 247 new elementary and middle school students within RUSD.

Although existing elementary and middle schools (grades K-8) within RUSD are currently operating near capacity, RUSD would likely be able to accommodate additional students generated by the proposed project in its existing and planned facilities because RUSD is currently experiencing a

[34] Becker, Tim, 2013, Lieutenant, El Dorado County Sheriff's Office, op. cit.

[35] Albaugh, Michael, 2013, Chief Business Official. Rescue Union School District. Written communication with LSA Associates, September 23.

decline in its student enrollment.[36] The additional 247 elementary and middle school students would not likely exceed the current capacities available within RUSD District. Due to RUSD's recent declining enrollment, planned new facilities would not likely be needed to accommodate additional students generated by the proposed project. In order to fund the development and construction of new school facilities, RUSD would impose a school impact fee of $1.81 per square foot of residential development.

El Dorado Union High School District. As shown in Table IV.M-2, EDUHSD is currently operating near capacity at Oak Ridge High School. However, as previously described, EDUHSD does not guarantee that school-aged residents from the project site would be assigned to that high school. Based on the student generation rates shown in Table IV.M-5, the addition of 444 dwelling units that could generate student population at the project site would generate approximately 72 new high school students. EDUHSD, as a whole, would be able to accommodate the additional 72 new students generated by the proposed project, and no new school facilities would need to be developed to serve the increased high school student population.[37]

EDUHSD would impose a school impact fee of $2.97 per square foot of residential development.[38] As previously described, on the Western Slope, EDUHSD's portion of the school impact fees is $1.16.

School Impact Fees. As discussed above, new school facilities would likely not be needed to accommodate anticipated increases in student enrollment resulting from the proposed project. However, new development projects are subject to statutory fees established by the State. Payment by developers of statutory fees would provide funding for planned school projects. Once funded, the school districts are responsible for identifying the location of new school facilities and undertaking acquisition, design, and construction of the facilities.

The school districts are responsible for implementing the specific methods of mitigating school impacts under the Government Code. The school impact fees and the school districts' methods of implementing measures specified by Government Code 65996 are meant to offset increased student enrollment. Payment of school facility mitigation fees has been deemed by the State legislature (per Government Code Section 65995(h)) to constitute full and complete mitigation of impacts of a development project on the provision of adequate school facilities, even though, as a practical matter, additional funding, usually from statewide or local bond measures, are needed to create new school capacity. Specific school facility developments would be subject to environmental review on a project-by-project basis. Through the payment of associated development fees, compliance with applicable State and local regulations, the proposed project would have a less-than-significant impact on school facilities.

[36] Swart, David, 2013. Superintendent. Rescue Union School District. Verbal communication with LSA Associates. February 22.

[37] Tranter, Karen, 2013, Administrative Assistant, El Dorado Union High School District, op. cit.

[38] Ibid.

(4) Parks and Recreation Facilities. Two parks would be incorporated into the proposed project: Village Park and Neighborhood Park. All parks are proposed to be dedicated to the El Dorado Hills Community Services District (EDHCSD) for maintenance and/or management.[39] The final design of the parks is subject to the EDHCSD approval.

Village Park (Lot A) would be approximately 9.2 acres in size and may include the following amenities: an open turf area which could accommodate a youth soccer field; off-street parking; a hillside slide; a picnic area with shade structures, tables and BBQ area; a restroom/storage building; a playground; a tot lot; a passive turf area; horse shoe area; basketball court; bocce court; and various paths and benches throughout the park. A conceptual plan of the Village Park is shown in Figure III-6.

Neighborhood Park (Lot B) would be approximately 1.9 acres in size and may include the following amenities: open turf area; tot lot; shade arbor with picnic tables and BBQ area; half-court basketball; and seating features. A conceptual plan of the Neighborhood Park is shown in Figure III-7.

In total, the proposed project would include approximately 11.1-acres of active park uses. In addition, and not include in the calculations, are the open space and trails incorporated into the project site. EDHCSD uses a standard of 5 acres per 1,000 residents. The proposed project would generate an estimated population of 1,470; given the EDHCSD park standards, as well as the amount of park acreage included in the project, the proposed project would meet the District standard and would increase the amount of parks acreage available to District patrons. Construction of the proposed project would not result in the substantial physical deterioration of a park facility, and construction of the recreational facilities would not result in an adverse physical effect on the environment with implementation of the mitigation measures included in this EIR. The potential impact related to park and recreation facilities would be considered less than significant.

c. Cumulative Impacts. Cumulative impacts associated with fire protection and police services that would occur under the proposed project would occur entirely within the EDHFD and El Dorado County Sheriff's Office West Patrol service areas. Expected increases in demand for fire and police services would thus be spatially limited and would not make a considerable contribution to increased demand for these public services in the region. The project applicant would pay required fees related to annexation to the EDHFD. Cumulative impacts to fire and police services are expected to be less than significant. Additionally, the County will consider the environmental effects of new facilities at a project level when they are proposed over time.

For school services, the geographic setting for cumulative impacts includes RUSD and EDUHSD service areas, which include the communities of Cameron Park, El Dorado Hills, Shingle Springs, Rescue, Diamond Springs, Cold Springs, Coloma, Camino, Pollock Pines and the City of Placerville. As expected residential and non-residential growth occurs within the two school service areas, increased demand would be placed on the school districts' services and facilities. The cumulative demand within the two school districts is expected to increase as a result of the proposed project, as well as other population growth within these school districts.

[39] Currently, it is anticipated that the Neighborhood Park would be dedicated to EDHCSD for management. However, if the final design of the proposed project included gating, which prevents general public access to the Neighborhood Park, it is then anticipated that the park would be a private park maintained by the future Home Owner's Association.

However, overall trends indicate declining enrollment within RUSD and EDUHSD districts, and the proposed project would not result in a potentially significant cumulative impact on schools. Development associated with the proposed project, or other development proposed within the school districts, would be required to contribute school facility fees in conformance with State law and Districts' requirements. School impact fees are deemed by statute to constitute full mitigation to reduce the impact of development projects on school facilities. Therefore, impacts of development on school district facilities, in combination with other past, present, and reasonably probable future projects, would not be cumulatively significant. This impact, therefore, would be less than significant. Additionally, the school districts will conduct their own environmental analysis to address proposals for new facilities and will address project-level adverse environmental impacts on a case by case basis at that time.

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N. VISUAL RESOURCES

This section evaluates the effects of the proposed project on visual resources and public views within and in the vicinity of the project site. The analysis considers the visual quality of the project site, and views to and from the project site. Public views are defined as views from public locations, such as roadways, scenic vista areas, parks, schools, or other public buildings.

This section is based on field surveys of the project site that were conducted by LSA Associates, Inc. in October 2012; review of aerial photographs of the project site and vicinity; data provided by CTA Engineering and Surveying, including the conceptual site plan (refer to Figure III-5 in Chapter III, Project Description); and other documents related to the project site.

1. Setting

The project site is located in the low foothills west of the northern Sierra Nevada and the visual character of the site is representative of the undeveloped areas within El Dorado County. The site is used for cattle grazing, and reflects the existing rural character of the northeastern portion of El Dorado Hills. However, the site's visual context is also greatly influenced by surrounding development, creating a mix of both rural and suburban elements.

The following section further describes the visual character of the project site and its surroundings, as well as views in the vicinity of the site. Views of and from the project site are provided in Figures IV.N-1a and IV.N-1b (Photos 1 through 4). General Plan policies that relate to visual resources are also included in this section. For a detailed description of the physical characteristics of the project site refer to Section IV.A, Land Use and Planning Policy.

a. Visual Character of the Project Site. The visual character of the approximately 280-acre project site is primarily characterized by grassland vegetation and scattered oak and other mature trees (Photo 1), with a concentration of trees in the northwest corner of the property. Existing tree canopy can be seen in the aerial photograph of the project site, identified as Figure III-2 in Chapter III, Project Description. During the dry season, the site is primarily covered in gold and brown non-native grassy vegetation, while during the winter and spring months the site is covered in tall green grasses. Two ponds and Green Springs Creek are located at the northern corner of the site. Infrastructure that supports cattle grazing, including unpaved dirt roads, gates, fences, and feed troughs are scattered throughout and are visible from many points within the site. Two residences and assorted storage/accessory structures are located at the northern portion of the site, off of Green Valley Road and Verde Valle Lane. These residences are primarily only visible from immediately adjacent areas within the site.

The topography of the site is varied, with elevations ranging from 960 to 1,235 feet above mean sea level. Figure III-4, included in Chapter III, Project Description, shows the existing slope ranges within the project site. The center of the site is generally higher in elevation and is relatively flat compared to the periphery of the property. The hilly terrain limits direct and open views across the site from some lower-lying elevations within the site.

Photo 1: Typical existing view within project site

Photo 2: View looking north towards foothills

LSA

FIGURE IV.N-1a

Dixon Ranch Residential Project EIR

Visual Resources Photos

SOURCE: LSA ASSOCIATES, INC., SEPTEMBER 2013.

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Photo 3: View looking south

Photo 4: View looking west towards Folsom Lake

LSA

FIGURE IV.N-1b

Dixon Ranch Residential Project EIR

Visual Resources Photos

SOURCE: LSA ASSOCIATES, INC., SEPTEMBER 2013.

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b. Visual Character of the Surrounding Area. The visual character of the surrounding area includes a mix of built and natural elements. Areas immediately adjacent to the site to the north and further north of Green Valley Road consist primarily of large-lot rural residential developments with both ornamental and natural landscaping. Lands to the northeast, across Green Valley Road, are primarily undeveloped and consist of hilly terrain covered by dense vegetation. The existing Green Springs Ranch subdivision is located east and southeast of the site and consists of low-density residential properties generally separated by dense vegetation. Undeveloped land, which is similar in character to the project site, is located to the southwest. While currently undeveloped, this land is designated for high-density residential and is part of the El Dorado Hills Specific Plan. The Highland View subdivision, a high-density residential development of two-story homes, is located on hilly terrain immediately west of the site. Vegetation in this area is generally limited to ornamental landscaping. The nearest public open space to the project site is Murray Homestead Park, located near the western edge of the Highland View Subdivision. This small park is generally level and is characterized primarily by open lawn areas and a play structure.

c. Views from the Project Site. Due to the site's varied topography and presence of both scattered and denser stands of mature trees, open unobstructed views of the surrounding area are generally limited to points within the site that are within higher elevations. Long-range views of nearby hilltops and ridgelines to the north, east, and south are available from the center of the site (Photos 2 and 3). Views of Folsom Lake to the west are also available from some locations with higher elevations (Photo 4). Views of existing residential developments both immediately adjacent to the site and in the distance are also available from various points within the site.

d. Views of the Project Site. Due to the topography of the site and surrounding areas, available views of the site are generally limited to private properties that immediately border the site. Public views of the site are limited to nearby roadways, such as Green Valley Road and residential streets and culs-de-sac within the adjacent subdivisions (e.g., Verde Valle Lane, Marden Drive, E. Green Springs Road, Lima Way), although direct and open views of the site are generally limited from many of these roadways. The site is most visible from Green Valley Road, which offers generally direct and open views of the grassland and tree-covered hilltops within the northern portion of the site. Direct and open views of the site are also available from surrounding hilltops and ridgelines in the vicinity, although views of the site from these locations are distant and generally blend with surrounding developed and undeveloped areas. Due to the lower elevation of Murray Homestead Park, views to the east towards the project site are generally obstructed by existing homes, although the hilltop areas and upper canopies of some trees are slightly visible from this public vantage point.

e. El Dorado County General Plan. General Plan Land Use Element policies that are applicable to visual resources within and in the vicinity of the site are outlined below.

Land Use Element

- Policy 2.3.1.1: The County shall continue to enforce the tree protection provisions in the Grading Erosion and Sediment Control Ordinance and utilize the hillside road standards.
- Policy 2.3.1.2: The Zoning Ordinance shall include consideration of a standard for parking lot shading and provision of street trees in all new development projects.
- Policy 2.3.2.1: Disturbance of slopes thirty (30) percent or greater shall be discouraged to minimize the visual impacts of grading and vegetation removal.

- Policy 2.5.1.1: Low intensity land uses shall be incorporated into new development projects to provide for the physical and visual separation of communities. Low intensity land uses may include any one or a combination of the following: parks and natural open space areas, special setbacks, parkways, landscaped roadway buffers, natural landscape features, and transitional development densities.
- Policy 2.8.1.1: Development shall limit excess nighttime light and glare from parking area lighting, signage, and buildings. Consideration will be given to design features, namely directional shielding for street lighting, parking lot lighting, sport field lighting, and other significant light sources, that could reduce effects from nighttime lighting. In addition, consideration will be given to the use of automatic shutoffs or motion sensors for lighting features in rural areas to further reduce excess nighttime light.

2. Impacts and Mitigation Measures

This section analyzes impacts related to visual resources that could result from development of the proposed project. The subsection begins with the criteria of significance, which establish the thresholds for determining whether an impact is significant. The latter part of this section presents the impacts associated with the proposed project. Mitigation measures are recommended, as appropriate.

a. Criteria of Significance. Implementation of the proposed project would have a significant effect on visual resources if it would:

- Have a substantial adverse effect on a scenic vista;
- Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway;
- Substantially degrade the existing visual character or quality of the site and its surroundings; or
- Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area.

b. Project Impacts. Development of the proposed project would result in the following impacts to visual resources.

(1) Scenic Vistas. To date, the County has not prepared or adopted a Scenic Corridor Ordinance (as outlined in General Plan Policy 2.6.1.1) to identify scenic routes and important viewsheds within the County. While U.S. 50 east of Placerville and State Highway 89 are officially designated as California State Scenic Highways, and State Highway 49 is an eligible State Scenic Highway, but not officially designated, these routes are not visible from the project site, and vice versa. Figure 5.3-1 of the El Dorado County General Plan EIR identifies scenic viewpoints, but the project site is not designated as an important public viewpoint or located near a scenic viewpoint so as to impact it.[1] In addition, the project site is not located within a Design Review-Scenic Corridor (-DS) combining district as identified by the County Zoning Map.[2]

[1] EDAW, 2003. *El Dorado County General Plan Environmental Impact Report, Exhibit 5.3-1, Scenic Viewpoints and Highways within El Dorado County*.

[2] It should be noted that Chapter 17.27.070 of the County Zoning Ordinance is currently reserved for this combining district and applicable zoning standards have not yet been developed.

As previously described, views of the site from surrounding areas are generally limited to public roadways that immediately border the site and direct and open views of and across the site from these roadways are generally obstructed by existing development, vegetation, or by variations in on- and off-site topography. However, the project site is easily viewed from points along Green Valley Road, looking south towards the site, and from the residential culs-de-sac located within adjacent developments (e.g., Verde Valle Lane, Marden Drive, E. Green Springs Road, Lima Way). Some limited views of the site are also available from Murray Homestead Park, west of the site.

Development of the project site with 604 new single-family residential units and associated improvements would alter existing views of the site as seen from nearby roadways and Murray Homestead Park, particularly where views of the hilltop areas within the site are available. Views from these locations of the hilly grasslands and tree stands within the site would be replaced by one- and two-story homes, with associated landscaping.

As shown in Figures III-3 and III-5, much of the site perimeter would be maintained as open space, retaining the existing tree canopy where feasible. This existing tree canopy will help to create a buffer, potentially shielding views of the new development from surrounding area views. While the project would alter the rural nature of this area as seen from adjacent roadways and the nearby park, it would be visually compatible with the scale of existing residential development in the immediate vicinity, particularly the high-density residential development located west of and adjacent to the site. Development of the project would represent a continuation of this development intensity and would be similar in scale to the many other existing residential subdivisions located within the urbanized areas of El Dorado Hills.

Development of the proposed project would not obstruct views of existing scenic vistas or important scenic resources, as no such views are currently available from public vantage points surrounding the site. Therefore, the proposed project would result in a less-than-significant impact to scenic vistas.

(2) Scenic Resources within a State Scenic Highway. The only officially designated scenic highways within El Dorado County are segments of US-50 and US-89, both east of Placerville and located 20 miles or more east of the project site.[3] In addition, the El Dorado County General Plan does not designate any roadways within the project vicinity as "county scenic roads." There are no officially designated or eligible scenic highways within the vicinity of the site. Therefore, the proposed project would not result in the removal of trees, rock outcroppings, or historic resources, nor would it substantially damage scenic resources within view of a State scenic highway.

(3) Visual Character. The project site currently consists of hilly terrain covered by non-native grasslands and scattered and concentrated stands of mature trees. The site is used for cattle grazing and includes associated infrastructure. Two rural residential developments are also located on the site. Development of the site with 604 new residential units (with demolition of one of the two existing residences), along with associated landscaping and roadway improvements would alter the existing visual character of the site, changing from an open rural landscape to suburban development.

[3] California Department of Transportation, 2011. *California Scenic Highway Program.* Website: www.dot.ca.gov/hq/ LandArch/scenic/schwy.html. September 7.

Consistent with General Plan Policy 2.5.1.1, low intensity land uses would be incorporated into the project design, providing for the physical and visual separation of the proposed development from adjacent residential communities. Larger medium-density lots would be located at the perimeter of a portion of the developed area, with smaller, high-density lots concentrated within the site's interior. Much of the site's perimeter would also be maintained as open space, preserving a natural buffer between existing residential subdivisions of similar and lower residential densities. A new park would be located near the northeast corner of the development with a second park located just west of the center of the project and clubhouse located in the age-restricted village. Internal roadways would also be landscaped. Pedestrian and circulation amenities would also contribute to the visual character and quality of the new development.

Approximately 19.76 acres, or approximately 45 percent of the existing oak tree canopy, would be removed from the site; the remaining approximately 55 percent of the existing tree canopy would be preserved. Many of the existing trees concentrated at the northwestern corner of the site would also be preserved, maintaining a buffer with the adjacent residential subdivision to the west. Tree removal and replacement would be consistent with the County's Policy 7.4.4.4 Option A in Phase 1. Phase 2 will be required to comply with the provisions of the El Dorado County Oak Woodland Management Plan at the time of Phase 2 tentative map and final development plan processing. The approximate location of Phase 1 and Phase 2 of the project is shown in Figure III-14. Existing trees would be retained to maintain the existing natural character of the site, where feasible. Incorporation of existing natural elements into project design as proposed by the project is typical of residential subdivisions in El Dorado Hills.

In addition, much of the existing topography on the site would be retained, where feasible. Cut and fill would be balanced on site and development of slopes greater than 30 percent would be limited to a few small areas near the northwestern corner and near the eastern border of the site. Overall, approximately 5.69 acres, or 2 percent of the site is at a 30 percent to 40 percent natural slope, while approximately 0.35 acres, or 0.12 percent of the site is at 40 percent natural slope or greater. The proposed project would generally be consistent with General Plan Policy 2.3.2.1, which discourages development of slopes 30 percent or greater to minimize the visual impacts of grading and vegetation removal.

Existing topographical and landscape features would be maintained and enhanced where feasible and open space buffers would visually separate the new development from existing adjacent developments. The change in character of the project site, once developed, would be visually compatible with surrounding development, particularly existing residential neighborhoods to the west. Therefore, the proposed project would not substantially degrade the existing visual character or quality of the site and its surroundings and this impact would be less than significant.

(4) Light and Glare. Most homes emit some light and glare during day and evening hours, as is typical in a suburban environment. The proposed residential development would include indoor lighting and outdoor lighting for safety purposes. The proposed roadways, recreational facilities, and parks and pathways would also include outdoor lighting for safety purposes. These new sources of light would be visible from a distance at night; however, the addition of new light sources associated with the proposed project would generally blend in with surrounding development and would represent a continuation of existing residential development within this area of the County. Compliance with General Plan Policy 2.8.1.1 and Section 17.14.170 of the Zoning Ordinance prior to building permit issuance would ensure that light and glare created by the proposed development

would be minimized, comparable to that of surrounding residential neighborhoods, and would reduce the impact to a less-than-significant level.

c. Cumulative Impacts. The visual character of the site would change from an open rural landscape to suburban development. This would continue the pattern of existing single-family residential development that surrounds the site. Although the site is currently used for grazing, the site is located within the boundaries of the General Plan's Community Region, indicating that it is appropriate for this site to transition to an urbanized area. The project itself would not result in any significant impacts related to visual resources. The proposed project would contribute to the intended change from rural to urban development that is expressed in the General Plan. The project would implement this vision and would be visually compatible with the surrounding development pattern. As such, the project, in combination with other past, present, and reasonably probable future projects, would not have a significant cumulative impact on visual resources. This impact, therefore, is less than significant.

V. ALTERNATIVES

The *CEQA Guidelines* require the analysis of a range of reasonable alternatives to the project, or to the location of the project, that would feasibly attain most of the project's basic objectives and avoid or substantially lessen any of the significant effects of the project (Section 15126.6(a) of the *CEQA Guidelines*). The range of potentially feasible alternatives required in an EIR is governed by a "rule of reason" that requires the EIR to set forth only those alternatives necessary to permit a reasoned choice.[1] CEQA states that an EIR should not consider alternatives "whose effect cannot be ascertained and whose implementation is remote and speculative."

The primary purpose of the alternatives analysis in an EIR, as stated in Section 15126.6(a) of the *CEQA Guidelines*, is to "describe a range of reasonable alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives." Further, Section 15126.6(b) of the *CEQA Guidelines* states that the "discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly." The potential feasibility of an alternative may be determined based on a variety of factors, including but not limited to economic viability, availability of infrastructure, and other plans or regulatory limitations.[2]

The Dixon Ranch Residential Project has been described and analyzed in the previous chapters, with an emphasis on significant impacts resulting from the project and mitigation measures recommended to avoid these impacts (Please refer to Chapter IV, Setting, Impacts and Mitigation Measures). The following discussion is intended to inform the public and decision-makers of the relative impacts of four potentially feasible alternatives to the project. This chapter also includes a discussion of alternatives that were initially considered but ultimately rejected from detailed consideration.

The three alternatives and a project variant to the Dixon Ranch Residential Project that are discussed in this chapter include the following:

- The CEQA-required **No Project alternative**. This alternative assumes that the project site would be developed under the existing General Plan and Zoning designations.
- The **Small Lot Clustered Development alternative**. This alternative assumes that the project would include 605 lots, but that the lots would be smaller to allow for more preservation of open space (with the exception of the Dixon Residence lot).

[1] *CEQA Guidelines*, Section 15126.6.

[2] *CEQA Guidelines*, Section 15126.6(f)(1).

- The **Reduced Build alternative**. This alternative assumes that the project site would include 192 units under a Medium Density General Plan Amendment.
- The **Non-Gated Development Alternate Variant**. The non-gated development project variant assumes that the project site would be developed as currently proposed, except that the proposed EVA on Lima Way would be an open public roadway with travel lanes in each direction.

For each alternative, a brief discussion of its principal characteristics is followed by an analysis of the alternative. The emphasis of the analysis is on a determination of whether or not the alternative would reduce, eliminate, or create new significant impacts, as well as the alternative's relative beneficial effects compared to the proposed project and how well the alternative meets each of the project objectives. The third section provides a discussion of the environmentally superior alternative.

The objectives developed for the proposed project are an important part of the context for evaluating alternatives. The Dixon Ranch Residential Project is described in detail in Chapter III, Project Description. The objectives of the project are listed below:

- Implement the County's General Plan by directing growth within those areas with moderate topography, located amongst already developed lands, with access to services, schools and transportation systems.
- Implement the County's General Plan by providing urban/suburban type development within lands designated as Community Region in order to ensure the preservation of large expanses of open space and agricultural lands within the County.
- Create an economically viable project that provides a fair-share contribution of infrastructure to the community through the payment of fees and/or construction of required capital improvements, including transportation improvements in accordance with the County's General Plan.
- Provide a broad range of residential product types.
- Offer a range of designs and amenities to meet the needs of the changing demographics of the County, including families, empty nesters and active adults.
- Protect the highest quality natural features and resources of the site while being sensitive to the character of adjacent land uses.
- Provide a residential community containing open space and a range of passive and active recreational amenities for its residents and the community.
- Provide a comprehensively planned project that is sensitive to environmental issues including wetland and tree preservation.
- Improve emergency access and circulation via existing road termini.
- Implement the General Plan strategies and methods for achieving its visions and goals of sustainable growth and economic development.

Table V-1 provides a summary of the development assumptions for each alternative.

Table V-1: CEQA Alternatives Compared To Proposed Project

Alternative Scenarios	Residents	Students	Residential Lots	Parks/ Clubhouse	Connections to EID?
Dixon Ranch Residential Project	1,470	319	605	2 parks 1 clubhouse	Yes
No Project	34	10	14	0 parks 0 clubhouse	Yes
Small Lot Clustered Development	1,565	434	605	2 parks 0 clubhouse	Yes
Reduced Build	495	138	192	0 parks 0 clubhouse	Yes
Non-Gated Development	1,470	319	605	2 parks 1 clubhouse	Yes

Source: LSA Associates, Inc., 2014

A. ALTERNATIVES THAT WERE CONSIDERED BUT REJECTED

The following two alternatives to the proposed project were considered but rejected from further consideration and evaluation. These alternatives are described below, along with the reason they were rejected from further consideration in this EIR.

CEQA Guidelines section 15126.6(f)(2)(A) states that the "key question and first step in analysis" of alternatives to the proposed project "is whether any of the significant effects of the project would be avoided or substantially lessened by putting the project in another location." Only those locations that would avoid or substantially lessen any of the significant effects of the project need be considered. If no feasible alternative locations exist, the agency must disclose the reasons for this conclusion. (Section 15126.6(f)(2)(B).)

Viable alternative locations for the project are limited to those that would feasibly attain most of the project objectives. The objectives of the project are to provide urban/suburban residential development adjacent to already-developed County lands, thereby preserving open space and agricultural lands. The project plans to offer a variety of recreational activities while preserving trees and wetlands as part of its vision for sustainable growth.

Given these project objectives, the project could not reasonably or feasibly be located outside a Community Region - the only regions where the County permits suburban growth. The applicant and the County considered two Community Region alternatives to the project, but ultimately rejected these alternatives because they did not meet key project objectives, such that they do not qualify as feasible alternatives to the chosen project location.

Both potential alternative sites were selected for their ability to accommodate the residential project envisioned by the applicant, in a space geologically and geographically similar to the Dixon Ranch site. Due to the limited number of large, vacant land holdings in the El Dorado Hills Community Region without prior approvals, and in proximity to the proposed project, the following two alternative site locations were deemed to be the most feasible. These alternative site locations are described below.

The first site considered was the **Springs Equestrian Center**, located at 2400 Green Valley Road, east of the project site. Springs Equestrian Center is located within the Cameron Park Community Region. The second site considered was **Rancho Dorado**, identified by Assessor's Parcel Number 120-070-02, and located southwest of the project site. Rancho Dorado lies within the El Dorado Hills Community Region; its southern boundary adjoins U.S. Highway 50 and a portion of its western boundary adjoins the Sacramento County line; Wilson Boulevard and Saratoga Way terminate at the parcels northern and eastern boundaries, respectively.

These two alternative sites are significantly smaller than the proposed project site, which is 280 acres. The first alternative, Springs Equestrian Center, is 146 acres, which is 134 acres smaller than the Dixon Ranch project site. In addition, there are significant wetland features on the Springs Equestrian Center, as well as significant topography and access constraints. Furthermore, an application for the development of the Springs Equestrian Center has been proposed; as of July 2012, the project has been continued off the calendar by the Planning Commission pending further analysis of environmental issues, including but not limited to traffic and access, wetland impacts, noise, and odor.

The second alternative, Rancho Dorado, is 122 acres, which is 158 acres smaller than the Dixon Ranch site. The acreages of these potential alternative locations are too small to support the same number of residential units while providing the same or similar acreage of open space and the same or similar lot densities as the proposed project site. In addition, there is a large power line corridor constraining the Rancho Dorado site, wetland areas, significant topography, and increased noise impacts from adjacent Highway 50. For these reasons, the Rancho Dorado alternative does not meet the requirements of the proposed project.

Additionally, both alternative sites entail either similar or significant new environmental effects as the proposed project site. The Springs Equestrian Center includes similar constraints as the project site: traffic from the Green Valley Road corridor; oak woodlands; and a large wetland area. The Rancho Dorado site would likely encounter new and significant impacts associated with highway noise and traffic due to its proximity to Highway 50. Significantly, development of the project on *any* suitable alternative site in or around the County would be unlikely to avoid or substantially lessen the project's significant impacts, as most of those impacts would occur no matter where the development is located (e.g., cumulative air quality and greenhouse gas impacts, which would occur irrespective of the project's location).

Also, importantly, the applicant does not own the two alternative sites considered. Even if these sites were available, the added expense of purchasing land rather than using land already under the control by the applicant would make these alternative locations unduly expensive. This expense would not be justified given the project's failure to fulfill its objectives in these alternate locations, as explained above. The applicant does not own other lands in El Dorado County that could feasibly meet the project objectives.

B. NO PROJECT ALTERNATIVE

1. Principal Characteristics

The No Project Alternative assumes that the project site would be developed under the existing General Plan and Zoning designations. The existing General Plan Designation (Low Density Residential) would be consistent with the existing zoning (AE) per Table 2-4 of the General Plan. While the project site does include a small portion (0.32 acres) zoned Estate Residential-Five Acres (RE-5), for purposes of this alternative, the entire site is assumed to have an AE designation. The purpose of the AE district is to designate lands subject to the Williamson Act. While the parcels that included Williamson Act designations were rolled out in 1997 and 1999, the AE designation for the project site remains. Within the AE District, uses are generally limited to those that include and support agricultural operations, including grazing. Structures are generally limited to one single-family dwelling unit per parcel and other structures that support agricultural operations.

Given the minimum lot size requirement (20 acres), 14 parcels could be created and developed for agricultural production under this alternative. For purposes of this analysis, it is assumed that the Dixon residence parcel would also be 20 acres. It is also assumed that any structures developed under this alternative would occur at least 500 feet from the project boundary.

The site design for the No Project alternative would include one entrance on Green Valley Road and one EVA access point to the project site on Lima Way. This alternative would not include age-restricted units, Village or Neighborhood Parks, the clubhouse, or trails proposed as part of the project. Residential and agricultural uses would connect to EID facilities for water or sewer service. A summary of this development alternative is provided in Table V-2.

Table V-2: No Project Alternative Summary

Total Number of Lots	14 lots
Number of Residents	34 residents
Size of New Lots	20 acres
Number of Parks/Clubhouse	0 parks/0 clubhouse
Connection to EID utilities?	Yes

Source: LSA Associates, Inc., 2014

Implementation of the No Project alternative would generally meet the following objectives:

- Improve emergency access and circulation via existing road termini.

Implementation of the No Project alternative would not meet the following objectives:

- Implement the County's General Plan by directing growth within those areas with moderate topography, located amongst already developed lands, with access to services, schools and transportation systems.
- Implement the County's General Plan by providing urban/suburban type development within lands designated as Community Region in order to ensure the preservation of large expanses of open space and agricultural lands within the County.
- Create an economically viable project that provides a fair-share contribution of infrastructure to the community through the payment of fees and/or construction of required capital improvements, including transportation improvements in accordance with the County's General Plan.

- Provide a broad range of residential product types.
- Offer a range of designs and amenities to meet the needs of the changing demographics of the County, including families, empty nesters and active adults.
- Protect the highest quality natural features and resources of the site while being sensitive to the character of adjacent land uses.
- Provide a residential community containing open space and a range of passive and active recreational amenities for its residents and the community.
- Provide a comprehensively planned project that is sensitive to environmental issues including wetland and tree preservation.
- Implement the General Plan strategies and methods for achieving its visions and goals of sustainable growth and economic development.

2. Analysis of the No Project Alternative

The potential impacts associated with the No Project alternative are described below:

a. Land Use. As with the proposed project, this alternative would not result in the physical division of an established neighborhood. Additionally, this alternative would not result in the conversion of existing forest or timber production lands, or the loss of mineral resources.

While the existing zoning is AE, as is noted in Section IV.A, Land Use, this designation is used for agricultural land in a Williamson Act Contract; however, there has not been an active Williamson Act Contract associated with the project site since 1999. While the project site is currently zoned for agricultural use, it is located within a Community Region of El Dorado Hills, an area identified for urban/suburban uses. This alternative would allow for the agricultural use of the project site that could result in conflicts with adjacent residential uses (such as noise, dust, and odors associated with agricultural uses). Therefore, this alternative could result in new and significant land use impacts on adjacent existing uses when compared to the proposed project.

b. Population and Housing. The No Project alternative would result in significantly less development than the proposed project. Implementation of this alternative would result in the development of 14 lots (with only one residential unit per lot) and an estimated 34 residents. As with the proposed project, this alternative would not induce substantial population growth, displace existing housing or people, or cumulatively exceed growth projections for population and housing.

c. Transportation and Circulation. This alternative would result in approximately 591 fewer units than the proposed project and would significantly reduce the vehicle trips generated by the project site. Even accounting for trips associated with the agricultural production of the project site, it is assumed that any transportation impacts associated with the proposed project would be significantly reduced when compared to implementation of the proposed project. While traffic modeling has not been prepared to assess whether all transportation impacts associated with the No Project alternative would be considered less-than-significant, this alternative would result in reduced transportation and circulation impacts when compared to the proposed project.

d. Air Quality. This alternative would result in approximately 591 fewer units than the proposed project, which would significantly reduce vehicle trips generated by the project site, and in turn reduce potential air quality impacts. This alternative would still be required to implement mitigation measures to address airborne asbestos associated with construction activities. While this alternative would be required to implement measures identified by the El Dorado County AQMD to address construction air pollutant emissions, given the reduced amount of construction associated with this alternative, the impact would likely be reduced to a less-than-significant level. This alternative would introduce trips associated with agricultural production (which were not part of the proposed project); however, due to the reduction in development when compared to the proposed project (and reduction in associated vehicle trips), operational impacts (both individual and cumulative) would likely be reduced to less-than-significant levels. This alternative would likely result in reduced air quality impacts compared to the proposed project.

e. Greenhouse Gas Emissions. This alternative would result in approximately 591 fewer units than the proposed project, which would significantly reduce vehicle trips generated by the project site, and in turn reduce greenhouse gas emissions. While this alternative would introduce trips associated with agricultural production (which were not part of the proposed project), due to the reduction in development when compared to the proposed project (and reduction in associated vehicle trips), the greenhouse gas emission impact would likely be reduced to a less-than-significant level. This alternative would likely result in reduced greenhouse gas emission impacts when compared to the proposed project.

f. Noise. This alternative would result in the construction of 13 new residential parcels, the retention of the Dixon Residence parcel, and the introduction of additional agricultural uses to the project site. For this alternative, it is assumed that new construction would be located at least 500 feet from the project boundary, resulting in a less-than-significant construction noise impact. While there would be trips associated with agricultural use of the project site, given the overall reduction in development associated with this alternative, the traffic noise associated with operation of this alternative would likely be considered less-than-significant. A mitigation measure would still be required to reduce potential impacts to residential uses located in the northern portion of the project site, but this impact would be reduced to a less-than-significant impact. While noise impacts associated with agricultural uses (farming equipment, livestock, etc.), would be introduced to the project site under this alternative, it is likely that the overall noise impacts would be reduced under this alternative when compared to the proposed project.

g. Biological Resources. Biological resources mitigation measures required under this alternative would be the same as the proposed project, to protect bird nests and to address oak removal. It is likely that due to the reduction in development of the project site, fewer oak trees would be removed under this alternative and biological resource impacts would be reduced under this alternative when compared to the proposed project.

h. Cultural Resources. While the amount of development associated with this alternative would be reduced when compared to the proposed project, implementation of this alternative would result in similar cultural resources impacts as the proposed project. Under this alternative, mitigation measures would be required to address potential historic resources, archaeological, paleontological, and human remains impacts. The potential impacts to cultural resources would be similar to the proposed project.

i. Geology, Soils, and Seismicity. While the No Project alternative would result in significantly less development (and associated grading and fill) than the proposed project, this alternative would include agricultural uses, which could result in the disturbance of soil and could result in soil erosion. This alternative could still require mitigation measures to address geotechnical hazards. The potential impacts to geology, soils and seismicity would be similar to the proposed project.

j. Hydrology and Water Quality. The proposed project would result in 591 fewer units being developed on site, but would introduce agricultural production to the project site. As with the proposed project, this alternative would be connected to EID due to its location within the Community Region in compliance with General Plan Policy 5.2.1.11, and would not be expected to impact groundwater supplies. Additionally, this alternative would result in significantly less development than the proposed project; as such, it is expected to generate a significantly reduced amount of run-off from the project site. As with the proposed project, this alternative could result in construction and operational period water quality impacts requiring mitigation measures. Given the reduced size of development associated with this alternative, potential hydrology and water quality impacts would be reduced when compared to the proposed project.

k. Hazards and Hazardous Materials. This alternative would require the same mitigation measure as the proposed project to address hazardous materials associated with demolition. Potential impacts related to hazards and hazardous materials would be similar to the proposed project.

l. Utilities. While this alternative would result in significantly less residential development (591 fewer units) than the proposed project, this alternative would introduce active agricultural production to the project site, and would use EID water supplies for the irrigation. Overall, potential utility impacts under this alternative would likely be reduced when compared to the proposed project.

m. Public Services. This alternative would result in significantly fewer residents (1,436 residents) than the proposed project; this reduction would translate into a reduced demand for police, fire, school and recreational services. While this alternative would not include any of the recreational amenities of the proposed project (parks and trails), this alternative would result in a reduced public service impact when compared to the proposed project.

n. Visual Resources. Under this alternative, significantly fewer residential units would be constructed, and the general look of the project site would change from suburban to agricultural. As with the proposed project, this alternative would not impact a scenic view or vista. Given the reduced amount of development, a corresponding reduction in light and glare would also occur. While the project results in no significant visual resources impacts, implementation of the No Project alternative would likely result in a reduction of the less-than-significant impacts.

C. SMALL LOT CLUSTERED DEVELOPMENT ALTERNATIVE

1. Principal Characteristics

Under this alternative, residential development would be located on smaller lots within the center of the site in order to preserve larger areas of the open space. This alternative would include 605 units (none of which would be age-restricted), two parks, and an increased amount of open space. As this

alternative does not include an age-restricted component, a clubhouse is not included in this alternative.

This alternative would include a similar circulation plan as the proposed project; two roadways to Green Valley Road would be constructed, as well as three EVAs to adjacent neighborhood streets. A conceptual site plan is shown in Figure V-1, and a summary of this development alternative is provided in Table V-3.

Table V-3: Small Lot Clustered Development Alternative Summary

Total Number of Residential Lots	605 lots
Age-restricted	*0 lots*
Number of Residents	1,565 residents
Size of New Lots	3,825 to 12,685 square feet
Size of Dixon Residential Lot	5 acres
Number of Parks/Clubhouse	2 parks/0 clubhouse
Connection to EID utilities?	Yes

Source: LSA Associates, Inc., 2014

Implementation of the Small Lot Clustered Development alternative would meet the following objectives:

- Implement the County's General Plan by directing growth within those areas with moderate topography, located amongst already developed lands, with access to services, schools and transportation systems.
- Implement the County's General Plan by providing urban/suburban type development within lands designated as Community Region in order to ensure the preservation of large expanses of open space and agricultural lands within the County.
- Create an economically viable project that provides a fair-share contribution of infrastructure to the community through the payment of fees and/or construction of required capital improvements, including transportation improvements in accordance with the County's General Plan.
- Protect the highest quality natural features and resources of the site while being sensitive to the character of adjacent land uses.
- Provide a residential community containing open space and a range of passive and active recreational amenities for its residents and the community.
- Provide a comprehensively planned project that is sensitive to environmental issues including wetland and tree preservation.
- Improve emergency access and circulation via existing road termini.
- Implement the General Plan strategies and methods for achieving its visions and goals of sustainable growth and economic development.

Implementation of the Small Lot Clustered Development alternative may not meet the following objectives:

- Provide a broad range of residential product types.
- Offer a range of designs and amenities to meet the needs of the changing demographics of the County, including families, empty nesters and active adults.

2. Analysis of the Small Lot Clustered Development Alternative

The potential impacts associated with the Small Lot Clustered Development alternative are described below:

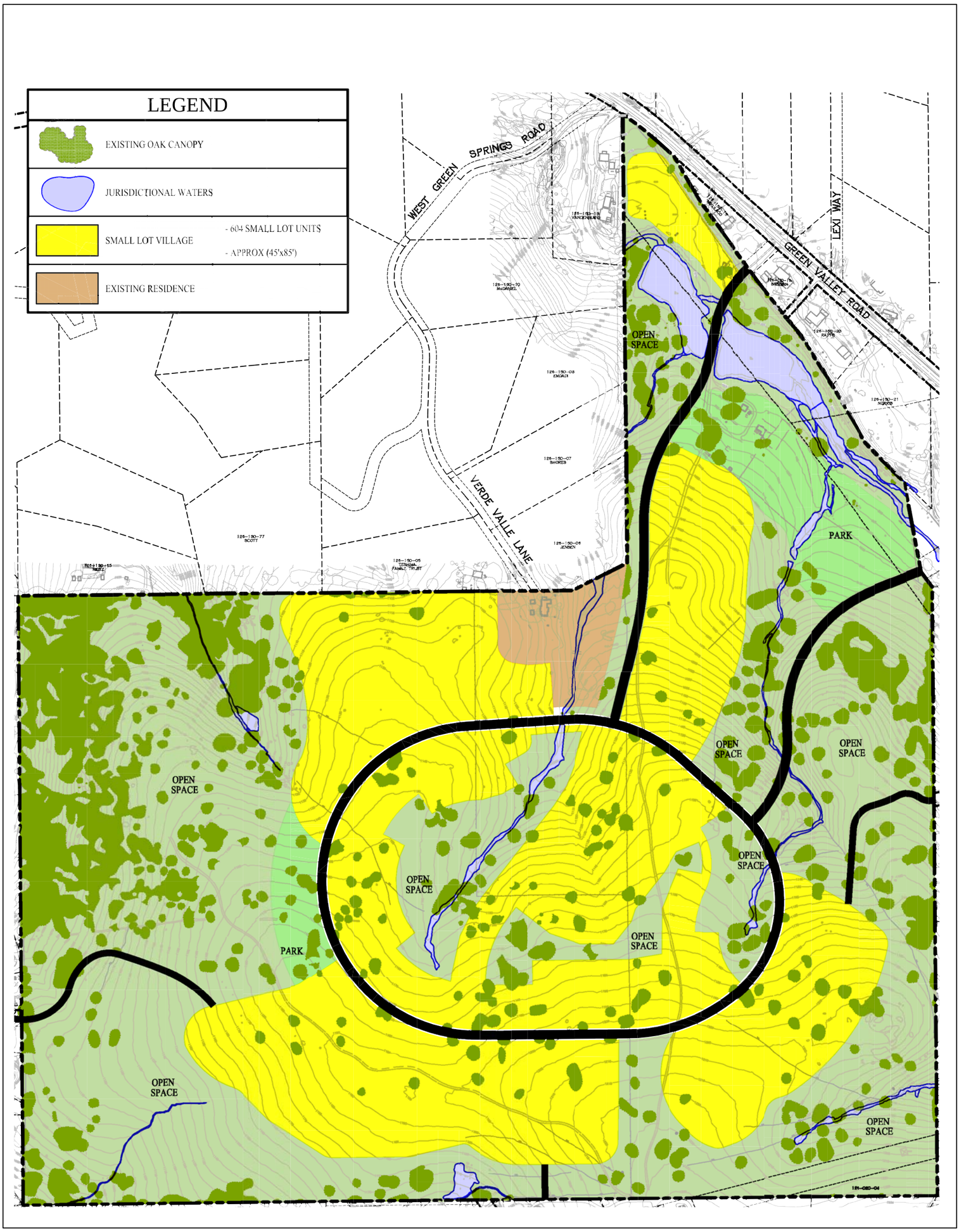
a. Land Use. While this alternative would have an overall reduced development footprint when compared to the proposed project, land use impacts associated with this alternative would be similar to the proposed project. As with the proposed project, this alternative would not result in the physical division of an established neighborhood. Additionally, this alternative would not result in the conversion of existing forest or timber production lands, or the loss of mineral resources. As lot sizes under this alternative are smaller, the development footprint would include denser residential development than the proposed project. However, as the use would remain residential, this type of development would be compatible with adjacent land uses. This alternative would have similar land use impacts as the proposed project.

b. Population and Housing. While this alternative would result in the same number of housing units as the proposed project, it would result in a greater number of residents than the proposed project as this alternative does not include age-restricted units, which generate fewer residents. While this alternative would generate additional population growth when compared to the proposed project, this alternative would not create new significant impacts related to induced population growth, displace existing housing or people, or cumulatively exceeding growth projections for population and housing.

c. Transportation and Circulation. While this alternative would result in a denser development footprint, the number of units would remain the same. While the number of units would stay the same, the trips associated with this alternative would be greater than the proposed project as conversion of the age-restricted to market rate units would result in an increase in project trip generation. Therefore, this alternative would, at a minimum, result in greater transportation and circulation impacts as the proposed project and could result in new traffic impacts as the trips generated by the proposed project would increase. This alternative would likely result in greater transportation and circulation impacts than the proposed project.

d. Air Quality. While the number of residential units under this alternative would be the same, the daily vehicle trips under this alternative would be increased when compared to the proposed project as there would be no age-restricted units (and associated reduction in vehicle trips); as such, this alternative would result in greater air quality impacts than the proposed project. Mitigation measures would be required to address airborne asbestos, construction emissions, and operation emissions. As with the proposed project, this alternative would result in significant and unavoidable construction and operation emissions.

e. Greenhouse Gas Emissions. While the number of residential units under this alternative would be the same, the daily vehicle trips under this alternative would increase when compared to the proposed project as there would be no age-restricted units (and an associated reduction in vehicle trips); as such, this alternative would result in greater greenhouse gas emission impacts than the proposed project. As with the proposed project, this alternative would result in a significant and unavoidable greenhouse gas emission impact.



LSA

FIGURE V-1

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Dixon Ranch Residential Project EIR
Small Lot Clustered Development Alternative
Conceptual Site Plan

SOURCE: EL DORADO COUNTY, FEBRUARY 2014

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f. Noise. As the number of residential units and daily trips under this alternative would be somewhat greater than the project, this alternative would result in similar noise impacts. Mitigation measures would likely be required to address traffic noise. A significant and unavoidable impact related to construction noise would still occur under this alternative. Noise impacts under this alternative would be somewhat greater than the proposed project.

g. Biological Resources. This alternative clusters development, allowing for more of the project site to remain in open space, as shown in Figure V-1. Under this alternative, fewer oak trees would be removed from the project site. While this alternative would still require mitigation measures to address nesting birds and oak tree removal, this alternative would have a reduced biological resources impact when compared to the proposed project as more trees would be preserved in open space areas.

h. Cultural Resources. Implementation of this alternative would result in similar cultural impacts as the proposed project. Under this alternative, mitigation measures would be required to address potential historic resource, archaeological, paleontological, and human remains impacts. The potential impacts to cultural resources would be similar to the proposed project.

i. Geology, Soils, and Seismicity. While this alternative would result in a reduced development footprint, this alternative would still require mitigation measures to address geotechnical hazards. The potential impacts to geology, soils and seismicity would be similar to the proposed project.

j. Hydrology and Water Quality. While this alternative would result in a reduced development footprint, this alternative would still require mitigation measures to address construction and operational water quality impacts. As the overall development would be reduced, the hydrology impacts of this alternative would be reduced when compared to the proposed project.

k. Utilities. This alternative would have the same number of units as the proposed project, but potentially more residents. Mitigation measures related to water and wastewater infrastructure required for the proposed project would also be required under this alternative. Given the smaller size of the residential lots, a reduced amount of water demand may be associated with this alternative, but overall, utilities impacts associated with this alternative would be similar to the proposed project.

l. Public Services. This alternative would result in an increase in residents. As this alternative does not include age-restricted units (which are anticipated to not generate school age residents), this alternative would result in a total of 434 students, which is an increase in 115 students than would be generated by the proposed project. Additionally, the increase in residents would likely result in an increased demand for public services. As such, the demand on public services from development of this alternative would be greater than the proposed project.

m. Visual Resources. This alternative would have the same number of units as the proposed project, but these units would be clustered toward the center of the site. Because of this clustering, more open space can be maintained around the perimeter of the site. As with the proposed project, this alternative would not impact a scenic view or vista. While the project results in no significant visual resources impacts, implementation of this alternative would likely result in a reduction to the less-than-significant impacts as more open space can be incorporated into this alternative's site plan.

D. REDUCED BUILD ALTERNATIVE

1. Principal Characteristics

This alternative assumes adoption of a Medium Density Residential General Plan Amendment to allow parcel sizes of 1 acre (with the exception of the Dixon Residential Lot, which would be 5 acres). Under this alternative, approximately 30 percent (84 acres) of the site would remain in open space resulting in 191 acres that could be developed with 1 acre parcels. Under this alternative, no parks, clubhouse, or age-restricted units would be developed.

Table V-4: Reduced Build Alternative

Total Number of Residential Lots	192 lots
Age-restricted	*0 lots*
Number of Residents	495 residents
Size of New Lots	1 acre
Size of Dixon Residential Lot	5 acres
Number of Parks/Clubhouse	0 parks/0 clubhouse
Connection to EID utilities?	Yes

Source: LSA Associates, Inc., 2014

This alternative would include a similar circulation plan as the proposed project; two roadways to Green Valley Road would be constructed, as well as three EVAs to adjacent neighborhood streets. A summary of this development alternative is provided in Table V-4.

Implementation of the Reduced Build alternative would meet the following objectives:

- Implement the County's General Plan by directing growth within those areas with moderate topography, located amongst already developed lands, with access to services, schools and transportation systems.
- Protect the highest quality natural features and resources of the site while being sensitive to the character of adjacent land uses.
- Provide a comprehensively planned project that is sensitive to environmental issues including wetland and tree preservation.
- Improve emergency access and circulation via existing road termini.
- Implement the General Plan strategies and methods for achieving its visions and goals of sustainable growth and economic development.

Implementation of the Reduced Build alternative may not meet the following objectives:

- Implement the County's General Plan by providing urban/suburban type development within lands designated as Community Region in order to ensure the preservation of large expanses of open space and agricultural lands within the County.
- Create an economically viable project that provides a fair-share contribution of infrastructure to the community through the payment of fees and/or construction of required capital improvements, including transportation improvements in accordance with the County's General Plan.
- Provide a broad range of residential product types.
- Offer a range of designs and amenities to meet the needs of the changing demographics of the County, including families, empty nesters and active adults.

- Provide a residential community containing open space and a range of passive and active recreational amenities for its residents and the community.

2. Analysis of the Reduced Build Alternative

The potential impacts associated with the Reduced Build alternative are described below:

a. Land Use. Land use impacts associated with this alternative would be similar to the proposed project. As with the proposed project, this alternative would not result in the physical division of an established neighborhood. Additionally, this alternative would not result in the conversion of existing forest or timber production lands, or the loss of mineral resources. This alternative would have similar land use impacts as the proposed project.

b. Population and Housing. This alternative would result in a reduced number of dwelling units and residents when compared to the proposed project. As with the proposed project, this alternative would not induce substantial population growth, displace existing housing or people, or cumulatively exceed growth projections for population and housing.

c. Transportation and Circulation. This alternative would result in significantly fewer dwelling units compared to the proposed project, and an associated reduction in the number of trips would occur with implementation of this alternative. While traffic modeling was not undertaken to ascertain whether any impacts associated with the proposed project would be reduced to a less-than-significant level under this alternative, it can be assumed that transportation and circulation impacts associated with the Reduced Build alternative would be reduced when compared to the proposed project.

d. Air Quality. This alternative would result in significantly fewer dwelling units compared to the proposed project, and an associated reduction in the number of trips. Given the reduction in vehicle trips, air quality impacts would also be reduced. While air quality modeling was not undertaken to ascertain whether any impacts associated with the proposed project would be reduced to a less-than-significant level under this alternative, it can be assumed that air quality impacts associated with the Reduced Build alternative would be reduced when compared to the proposed project.

e. Greenhouse Gas Emissions. This alternative would result in significantly fewer dwelling units compared to the proposed project, and an associated reduction in the number of trips. Given the reduction in vehicle trips, greenhouse gas emissions impacts would also be reduced. While modeling was not undertaken to ascertain whether the emissions impact associated with the proposed project would be reduced to a less-than-significant level under this alternative, it can be assumed that greenhouse gas emission impact associated with the Reduced Build alternative would be reduced when compared to the proposed project.

f. Noise. Under the Reduced Build alternative, mitigation measures would still be required to address traffic and construction noise. A significant and unavoidable impact related to construction noise would still occur under this alternative. Noise impacts under this alternative would be similar to the proposed project.

g. Biological Resources. This project would result in fewer residential units and the retention of more of the project site in open space. While this alternative would still require mitigation measures to address nesting birds and tree removal, this alternative would have reduced biological resources impacts when compared to the proposed project.

h. Cultural Resources. Implementation of this alternative would result in similar cultural impacts as the proposed project. Under this alternative, mitigation measures would be required to address potential historic resource, archaeological, paleontological, and human remains impacts. The potential impacts to cultural resources would be similar to the proposed project.

i. Geology, Soils, and Seismicity. While this alternative would result in fewer residential units, this alternative would still require mitigation measures to address geotechnical hazards. The potential impacts to geology, soils and seismicity would be similar to the proposed project.

j. Hydrology and Water Quality. While this alternative would result in fewer residential units, this alternative would still require mitigation measures to address construction and operational water quality impacts. As the overall development would be reduced, the hydrology impacts of this alternative would be reduced when compared to the proposed project.

k. Utilities. While this alternative would result in reduced utilities demand when compared to the proposed project, it is likely mitigation measures related to water and wastewater infrastructure required for the proposed project would still be required under this alternative. While mitigation measures would be required under this alternative, this alternative would have a reduced utilities impact when compared to the proposed project.

l. Public Services. With fewer residential units than the proposed project, the Reduced Build alternative would result in a reduced demand for police, fire and school services. While this alternative would result in reduced public services demand, this alternative would not incorporate parks included in the proposed project, so additional demand may be placed on other recreation facilities. However, this alternative would have a reduced public service impact when compared to the proposed project.

m. Visual Resources. This alternative would have significantly fewer units than the proposed project, and would generally incorporate less development and more open space than the proposed project. As with the proposed project, this alternative would not impact a scenic view or vista. While the project results in no significant visual resources impacts, implementation of this alternative would likely result in a reduction to the less-than-significant impacts as more open space can be incorporated into this alternative's site plan.

E. NON-GATED DEVELOPMENT ALTERNATE VARIANT

1. Principal Characteristics

The Non-Gated Development alternative assumes that the site would be developed as currently proposed, except that the proposed EVA off of Lima Way would be an open public roadway with travel allowed in both directions in an effort to improve emergency access and circulation associated with the project. The remaining EVAs off of Marden Drive and Green Springs Road would remain

gated. Under this alternative, the two entrances on Green Valley Road would remain as proposed. A summary of this development alternative is provided in Table V-5.

Implementation of the Non-Gated Development alternative would meet the following objectives:

Table V-5: Non-Gated Development Alternative Summary

Total Number of Residential Lots	605 lots
Age-restricted	*160 lots*
Other	*445 lots*
Number of Residents	1,470 residents
Size of New Lots	4,725 square feet to 3.2 acres
Size of Dixon Residential Lot	5 acres
Number of Parks/Clubhouse	2 parks/1 clubhouse
Connection to EID utilities?	Yes

Source: LSA Associates, Inc., 2014

- Implement the County's General Plan by directing growth within those areas with moderate topography, located amongst already developed lands, with access to services, schools and transportation systems.
- Implement the County's General Plan by providing urban/suburban type development within lands designated as Community Region in order to ensure the preservation of large expanses of open space and agricultural lands within the County.
- Create an economically viable project that provides a fair-share contribution of infrastructure to the community through the payment of fees and/or construction of required capital improvements, including transportation improvements in accordance with the County's General Plan.
- Provide a broad range of residential product types.
- Offer a range of designs and amenities to meet the needs of the changing demographics of the County, including families, empty nesters and active adults.
- Protect the highest quality natural features and resources of the site while being sensitive to the character of adjacent land uses.
- Provide a residential community containing open space and a range of passive and active recreational amenities for its residents and the community.
- Provide a comprehensively planned project that is sensitive to environmental issues including wetland and tree preservation.
- Improve emergency access and circulation via existing road termini.
- Implement the General Plan strategies and methods for achieving its visions and goals of sustainable growth and economic development.

2. Analysis of the Non-Gated Alternate Variant

The potential impacts associated with this variant alternative are described below:

a. Land Use. The only difference between this alternative and the proposed project is the addition of a roadway connecting the project site to Lima Way. As such, land use impacts associated with this alternative would be the same as for the proposed project.

b. Population and Housing. The only difference between this alternative and the proposed project is the addition of a roadway connecting the project site to Lima Way. As such, potential population and housing impacts associated with this alternative would be the same as for the proposed project.

c. Transportation and Circulation. This alternative would result in vehicular access from the project site to Silva Valley Parkway via Lima Way, Aberdeen Lane, and Appian Way (collectively Highland View), and would be anticipated to provide an attractive alternate route to gain access to points south, including US-50, for at least a portion of the project site. Project access through Highland View could attract project traffic away from Green Valley Road resulting in increased traffic volumes along these neighborhood roadways. Initial estimates indicated that nearly 20 percent of the project traffic would use the Highland View connection to Silva Valley Parkway, thereby reducing Green Valley Road volumes. While this shift in traffic may lessen project impacts along Green Valley Road west of the project site, it is possible that additional impacts may be realized along Highland View and/or at the Silva Valley Parkway intersection.

It should be noted that creation of a Lima Way connection between Highland View and the proposed project would not only result in project generated trips using these roadways, it could also result in existing traffic from Highland View traveling through the project site to gain access to Green Valley Road and points to the east.

d. Air Quality. The only difference between this alternative and the proposed project is the addition of a roadway connecting the project site to Lima Way. As such, potential air quality impacts associated with this alternative would be similar to those of the proposed project.

e. Greenhouse Gas Emissions. The only difference between this alternative and the proposed project is the addition of a roadway connecting the project site to Lima Way. As such, potential greenhouse gas emissions associated with this alternative would be similar to those of the proposed project.

f. Noise. Under this alternative new project trips would be introduced to Lima Way, and vehicle and roadway noise (associated with this alternative) would likely result in increased noise in the Highland Views neighborhood west of the project. Therefore, noise impacts associated with this alternative could be greater than the proposed project.

g. Biological Resources. The only difference between this alternative and the proposed project is the addition of a roadway connecting the project site to Lima Way. As such, potential biological resources impacts associated with this alternative would be similar to those of the proposed project.

h. Cultural Resources. The only difference between this alternative and the proposed project is the addition of a roadway connecting the project site to Lima Way. As such, potential cultural resources impacts associated with this alternative would be the same as for the proposed project.

i. Geology, Soils, and Seismicity. The only difference between this alternative and the proposed project is the addition of a roadway connecting the project site to Lima Way. As such, potential geology, soils and seismicity impacts associated with this alternative would be similar to those of the proposed project.

j. Hydrology and Water Quality. The only difference between this alternative and the proposed project is the addition of a roadway connecting the project site to Lima Way. As such, potential hydrology and water quality associated with this alternative would be similar to those of the proposed project.

k. Utilities. The only difference between this alternative and the proposed project is the addition of a roadway connecting the project site to Lima Way. As such, potential utilities impacts associated with this alternative would be similar to those of the proposed project.

l. Public Services. The only difference between this alternative and the proposed project is the addition of a roadway connecting the project site to Lima Way. While not identified as an impact, this alternative would provide better access to the project site for emergency vehicles; however, providing a public access at Lima Way is not a requirement of the Fire Department for this project. As such, potential public services impacts associated with this alternative would be similar to those of the proposed project.

m. Visual Resources. The only difference between this alternative and the proposed project is the addition of a roadway connecting the project site to Lima Way. As such, potential visual resources impacts associated with this alternative would be similar to those of the proposed project.

F. ENVIRONMENTALLY SUPERIOR ALTERNATIVE

CEQA requires the identification of the environmentally superior alternative in an EIR from among the range of reasonable alternatives that are evaluated. For this project, the No Project alternative would be considered the environmentally superior alternative as environmental impacts associated with the project would be reduced under this alternative. However, this alternative only meets one of the objectives of the proposed project.

CEQA Guidelines Section 15126.6(d)(2) states that if the environmentally superior alternative is the No Project alternative, the EIR shall also identify an environmentally superior alternative from among the other alternatives. Among the remaining alternatives, the Reduced Build alternative would likely be considered the environmentally superior alternative. Given the significant reduction in development, the severity of impacts associated with the proposed project would be significantly reduced. However, while reducing these environmental impacts, the Reduced Build alternative would not fully meet all the objectives of the proposed project. Additionally, it is unclear if this alternative would be financially feasible for the project applicant.

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VI. OTHER CEQA CONSIDERATIONS

As required by CEQA, this chapter discusses the following types of impacts that could result from implementation of the proposed project: growth-inducing impacts; significant irreversible changes; effects found not to be significant; and significant unavoidable effects.

A. GROWTH INDUCEMENT

A project is considered growth-inducing if it would directly or indirectly foster substantial economic or population growth or the construction of additional housing, either directly or indirectly, in the surrounding environment. Examples of projects likely to have significant growth-inducing impacts include extensions or expansions of infrastructure systems beyond what is needed to serve project-specific demand, and development of new residential subdivisions or industrial parks in areas that are only sparsely developed or are underdeveloped. Typically, development projects on sites that are designated for development and surrounded by existing suburban uses are not considered adversely growth-inducing because growth in areas that already have development and infrastructure available to serve new development are generally considered environmentally beneficial.

Implementation of the proposed project would result in development of 604 new residential units. The project site is surrounded on all sides by suburban development (or planned suburban development). Additionally, this development would occur within the General Plan Community Region Boundary (urban limit line) of El Dorado Hills; therefore, the General Plan anticipates development at the project site.

Implementation of the proposed project would include connections and installation of utilities and infrastructure (water, sewer, and roadways) to serve the new units. While these infrastructure improvements would connect to adjacent development, the improvements would not encourage growth in these adjacent areas, as they are already developed with suburban uses. Therefore, the growth that would occur as a result of the proposed project would not be considered substantial or adverse.

B. SIGNIFICANT IRREVERSIBLE CHANGES

CEQA requires that EIRs assess whether the proposed project would result in significant irreversible changes to the physical environment. The *CEQA Guidelines* discuss three categories of significant irreversible changes that should be considered. Each is addressed below.

1. Changes in Land Use Which Commit Future Generations

The proposed project would commit future generations to development on approximately 196 acres of the project site. The remaining 84 acres of the site would be maintained as open space. While site preparation, construction, and operation of the proposed project would commit several generations to a suburban land use on the project site, it would in no way be irreversible in the technical sense of the

word. Future generations could eventually redevelop the site with other land uses or remove the homes if the presently proposed residential uses were to become obsolete.

2. Irreversible Damage from Environmental Accidents

No significant environmental damage, such as accidental spills or explosion of a hazardous material, is anticipated with development of the proposed residential project. The use of hazardous materials (beyond standard construction supplies and household hazardous waste) is not proposed.

3. Consumption of Nonrenewable Resources

Consumption of nonrenewable resources includes increased energy consumption, conversion of agricultural lands, and lost access to mining reserves. Because the project site has not been used for mineral extraction, loss of access to any minerals that historically occurred on-site would not be considered significant. The proposed project would require additional electricity, water, and natural gas; however, the scale of such consumption for the proposed project would be typical for a residential development of this size.

The proposed project would convert existing grazing land to a residential development. This action would result in the consumption of a non-renewable resource, as grazing land would be permanently taken out of production. However, the quality of these lands for this purpose is not unique, and their removal would not constitute a significant impact.

C. EFFECTS FOUND NOT TO BE SIGNIFICANT

The environmental topics analyzed in Chapter IV, Setting, Impacts and Mitigation Measures, represent those topics which generated the greatest potential controversy and expectation of adverse impacts. Each of the CEQA-defined environmental factors is considered within Chapter IV of this Draft EIR. No topics suggested for consideration in the CEQA Statute or Guidelines have been "focused out" of detailed analysis.

D. SIGNIFICANT UNAVOIDABLE IMPACTS

Implementation of the proposed project would result in the following significant and unavoidable impacts:

- Traffic impacts to the following intersections would be considered significant and unavoidable until the identified mitigation measures are implemented:
  - Intersection #12, El Dorado Hills Boulevard/Francisco Drive [Existing (2013) Plus Proposed Project Scenario]
  - Intersection #2, Green Valley Road/El Dorado Hills Boulevard/Salmon Falls Road [Existing Plus Approved Projects (2018) Plus Project and Cumulative (2025) Plus Proposed Project Scenario]
- Implementation of the proposed project would add additional queue lengths to Intersection #2 (Green Valley Road/El Dorado Hills Boulevard/Salmon Falls Road), which would be considered significant and unavoidable until the identified improvement is implemented.

- Construction of the proposed project would generate air pollutant emissions that could violate air quality standards.
- Operation of the proposed project would generate air pollutant emissions that would exceed the El Dorado AQMD criteria and could contribute substantially to a violation of air quality standards.
- Operation of the proposed project would result in a significant cumulative net increase in criteria pollutant emissions.
- Construction and operation of the proposed project – in combination with emissions from other past, present, and reasonably probable future projects – would result in GHG emissions that would have a significant physical adverse impact and would cumulatively contribute to global climate change.
- The proposed project would conflict with plans adopted for the purpose of reducing GHG emissions.
- Project construction activities could result in noise levels in excess of the County's noise performance standards for construction activities as measured at adjacent residential land uses.

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VII. REPORT PREPARATION

A. REPORT PREPARERS

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B. REFERENCES

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