Appendix F

Storm Drainage Evaluation

November 22, 2022

STORM DRAINAGE EVALUATION

Generations

Tentative Map

PREPARED FOR:

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SUBMITTED TO:

El Dorado County

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1. Introduction & Overview

The Generations project encompasses approximately 280 acres, located north of US Highway 50 in El Dorado Hills, in western El Dorado County. The property is located south of Green Valley Road, near the intersection with Malcolm Dixon Road, in the Community Region of El Dorado Hills. Two points of access to the project are proposed at Green Valley Road. Existing or approved adjacent subdivisions include Green Springs Ranch to the east and southeast, Serrano to the southwest, and Highland View to the west.

1.1. Purpose

The purpose of the report is to provide hydrologic and hydraulic analyses in support of storm drainage improvements shown on the tentative map application for the Generations development, and to verify adherence with guidelines and procedures outlined in the County of El Dorado *Drainage Manual*.

1.2. Previous Studies

No previously approved study was used in the development of this study. Hydrology and Hydraulic modeling were previously performed for Green Springs Creek which was used as a reference for the modeling in this study.

1.3. Topography

The project site generally slopes from South to North and East to West and is characterized by mostly grassland with scattered oak trees. Green Springs Creek flows from East to West through the Northern portion of the site, roughly paralleling Green Valley Road. Two existing man-made ponds are located within the project area, within the Green Springs Creek alignment.

The Generations development utilizes topography flown in 2011 and is based on the North American Vertical Datum of 1988 (NAVD88). A supplemental field survey was performed in 2012 at each of the two ponds. The hydrologic modeling for the Generations project extends beyond the scope of this topography. For areas outside of the flown topography digitized USGS quad maps are used.

2. Project Description

The Generations project includes a proposal for 379 new residential units, a clubhouse, a park, and the supporting improvements required to serve the development. In addition to standard drainage features typically associated with development, two existing drainage ponds will be modified with the development. Two road crossings of Green Springs Creek will be sized to maintain freeboard and flow criteria for the creek. On-site, several detention basins will be constructed which will reduce runoff potential from developed areas to re-create existing flow conditions for the 2-year, 10-year and 100-year 24-hour events.

The onsite development will include several basins which will mitigate the runoff peaks generated due to development. In addition to mitigating offsite flow, flows will also be mitigated at key discharge points onsite to maintain flow to wetland areas and prevent scouring.

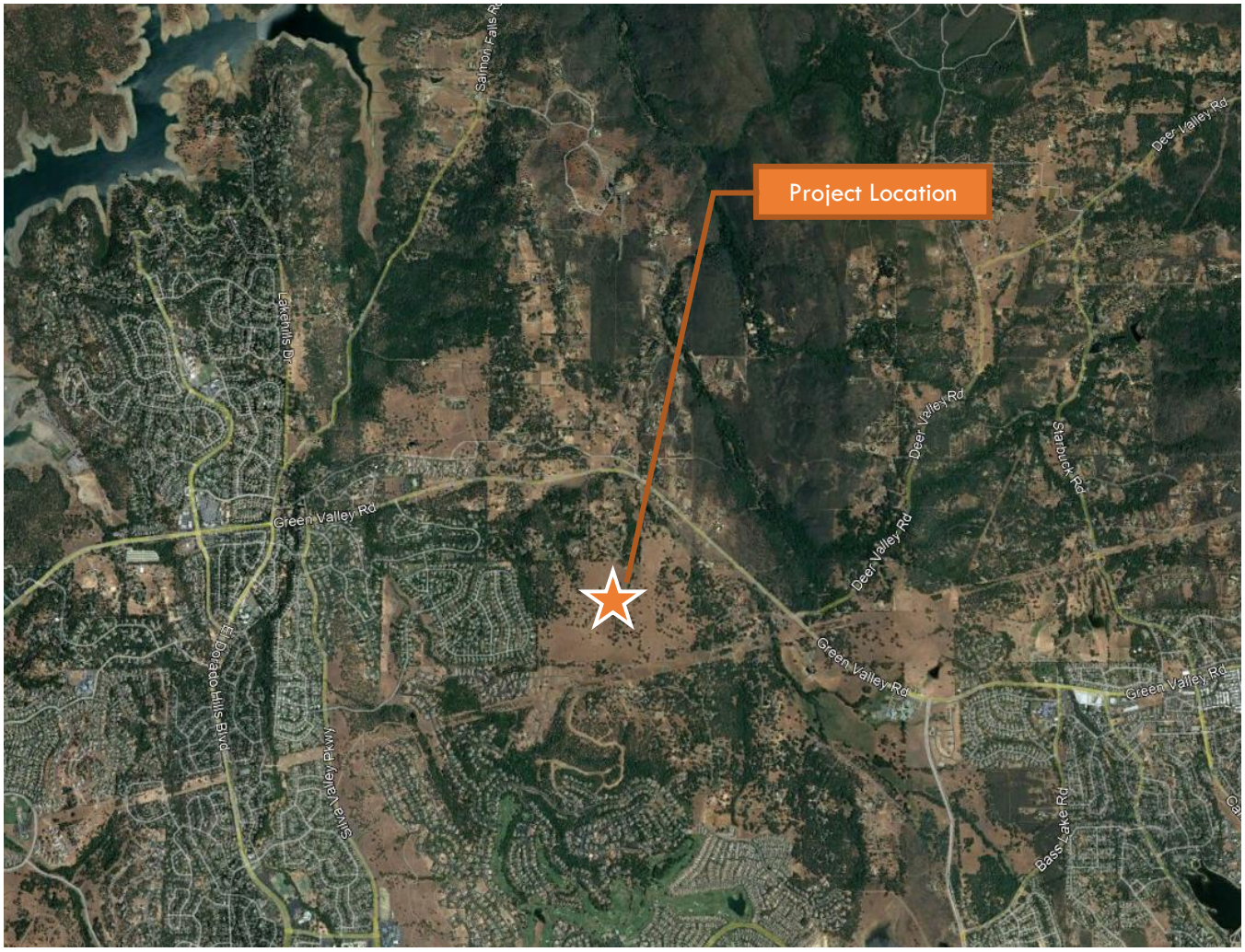


Figure 1. Generations Location Map

3. Modeling Parameters

The drainage study for the Generation project was carried out in conformance with the guidelines and procedures of the *County of El Dorado Drainage Manual*, adopted March 14, 1995, and adopted September 22, 2020, with precipitation data as revised in 2008.

The analysis of the hydrology was performed in HEC-HMS version 4.8. The hydraulic analysis of Green Springs Creek was created in HEC-RAS version 5.0.7.

3.1. Hydrologic Parameters

Existing Watershed Conditions

The existing watersheds used in this study are based on aerial topography and quad maps to determine compliance locations at various points in the project vicinity. Watershed maps and key points in the runoff analyses are provided in Exhibits 1, 1A and 1B.

As shown on the Exhibit 1.1 and Exhibit 1.2 in Appendix A, site runoff contributes to several drainage networks that ultimately tributary to Folsom Lake via New York Creek. The existing upstream shed contributing to Green Springs

Creek is 2.6 square miles and is the primary source of runoff which flows through the site via Green Springs Creek. The flow in Green Springs Creek is significant and mitigation is an important factor to consider in post-development conditions.

In most cases, watersheds were delineated based on the project boundary in order to provide a hydrograph at the project boundary for comparison purposes. Watersheds extend slightly into neighboring properties to capture the full extent of the on-site development. There is no proposed development outside of the project area except for access, and therefore, for the purposes of a comparison to developed conditions hydrographs, the resultant flow is considered the project boundary flow. Figure 2 shows a pre and post watershed and the associated compliance point.

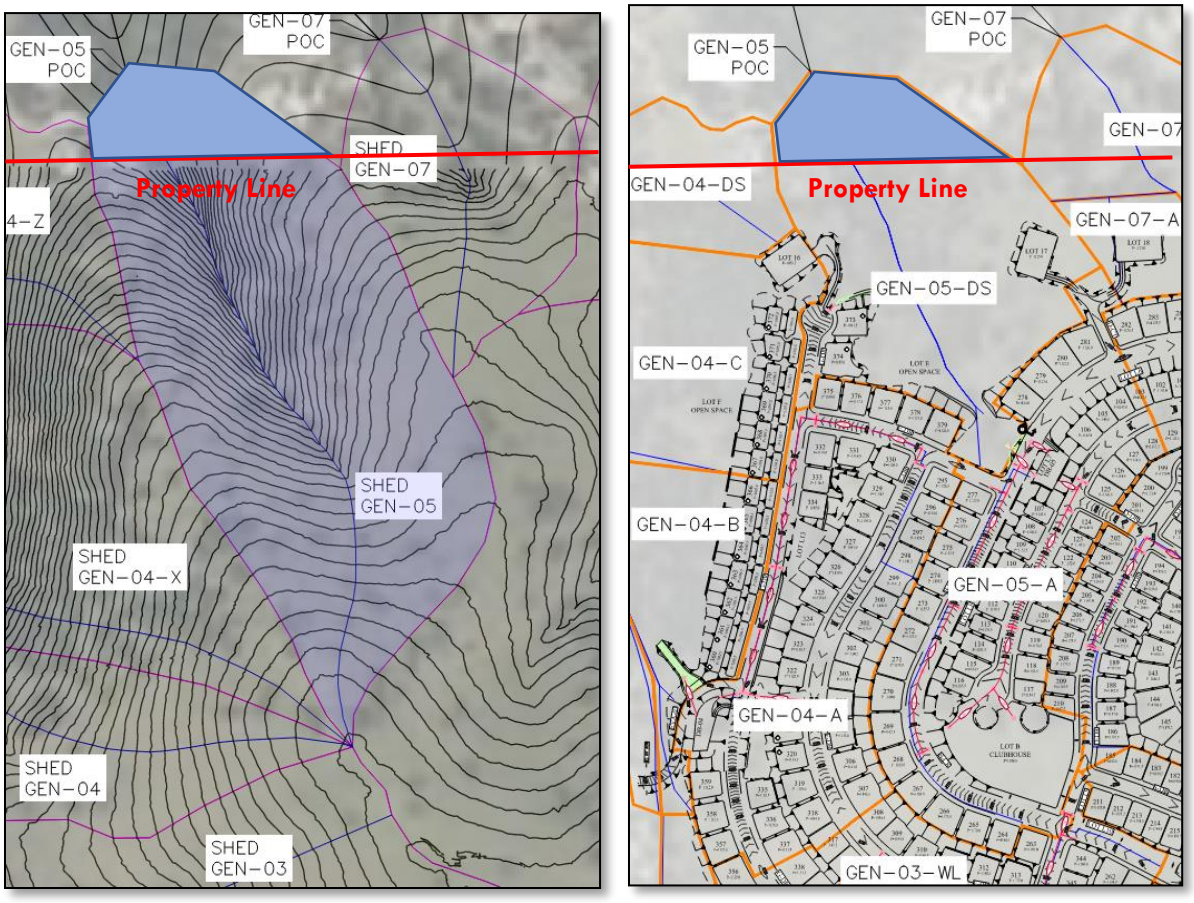


Figure 2. Pre and Post Watersheds Showing Same Off-Site Conditions

Proposed Watershed Conditions

Proposed conditions watersheds share the same external boundary as the Existing conditions watersheds. However, they were broken up into smaller sub-sheds based on the on-site design. Some on-site watersheds drain to a detention basin while other sheds are undisturbed and drain directly off-site. Watersheds are named based on their associated discharge location. For example, all GEN-05 watersheds in developed conditions eventually drain to the GEN-05 point of compliance which allows for a comparison to the existing conditions watershed at the same location.

Precipitation

The hydrograph method of runoff computation was used to evaluate project impacts on downstream facilities, wetlands, and the effectiveness of proposed mitigation measures. Throughout this study, the 50%, 10%, and 1%

reoccurrence interval storm events will be referred to as the 2-year, 10-year, and 100-year storm events. 24-hour duration hydrographs were produced for the 2-year, 10-year and 100-year storm events in HEC-HMS to identify and mitigate the impact of development. The Generations project's upstream sheds fall between the 26" and 28" mean annual precipitation contours and the generations subdivision is near the 26" contour as seen in Exhibit 3. The 27" mean annual precipitation values were chosen for the design storms and are shown in Table A2.2.1 in Appendix B. The generations project sits at an elevation ranging from 1000-1250ft, with the large upstream watershed having a maximum elevation of 1465ft. Since all elevations are lower than 1,640ft, in accordance with the County of El Dorado Drainage Manual, a type 1 temporal distribution was used for all design storms.

Runoff Calculations

To determine the hydrographs for each watershed, HEC-HMS was used to evaluate the watersheds based on SCS TR-55. An accompanying excel spreadsheet has been provided in Appendix B to identify the key parameters which include area, composite curve number, impervious percentage, lag time and reach characteristics. The initial abstraction was set to zero for all watersheds, assuming that the sheds would be saturated prior to the 24-hour peak. Since the soil types are a mix of C and D type soils, preceding events have the potential to produce these saturated conditions.

Curve Numbers and Soil Type

Composite curve numbers were calculated using google earth imagery and the tentative map layout to determine the weighted areas for each land use category. Soil type for the Generations onsite watersheds was determined to be D-Type soil and for the larger 2.6 square mile watershed the soil type was determined to be C-Type soil. Exhibit 4 in Appendix A shows the soil classifications from the USDA. Using the soil type and land use, curve numbers for each of the land use regions were determined using TR-55 and a spatially weighted average CN was computed for each watershed. The values used are highlighted on Table 2-2c in Appendix B. Generally speaking, due to the D-type soil found on-site, the pre-conditions CN values do not dramatically raise in the post-construction conditions. As D-type soil already has a low infiltration rate, the added impervious to the site does not significantly alter the runoff potential.

Lag time

Lag time was determined using the TR-55 manual and a characteristic water course lengths for each watershed. Sheet flow travel time was determined using the simplified solution to the kinematic-wave equations, shallow flow velocity was determined using Figure 3.1 of TR-55, and channel flow velocity was estimate using Manning's equation with typical n value, A/P ratio, and slope for the given channel. The travel time for each watercourse length was determined and the lag time was taken to be 60% of the total travel time for each shed. A summary of the calculations is presented in Appendix B.

Stream Flow Routing

In HEC-HMS, Muskingum-Cunge routing models were used for concentrated flow routing. Muskingum-Cunge is best suited for applications where timing is the key element of interest and storage volume can be ignored. The stream systems in question are all moderately steep and therefore limited storage will take place in the streams except at dedicated storage areas. Due to this, Muskingum-Cunge routing was picked as the preferred method. These routes were determined where sub catchments combined to flow through low flow channels and streams. The HEC-HMS input and routing are shown in Appendix B.

Detention

Peak flows are increased due to onsite development and need to be mitigated to maintain the existing condition flows for flood control and hydromodification mitigation. Through iteration, detention basins were sized, and outfall structures were designed to retain flows similar to, but not greater than, the existing peak flows at several key locations throughout the site for the 2-year (Hydromod), 10-year (Flood Control), and 100-year (Flood Control)

storm events. A typical basin will contain a low-flow orifice, an overflow weir, and an emergency spillway sized to convey the 100-year event while maintaining 1.5 ft of freeboard in the basin.

Final design of the detention basins will be determined with improvement plan design submittal and final drainage report.

3.2. Hydraulic Parameters

Hydrographs

Hydrographs were taken from the runoff computations in HEC-HMS and inserted into the HEC-RAS model as lateral inflow or uniform later inflow conditions. The primary flow contribution to the model comes from the 2.6 square mile shed to the east of the Generations project site. Due to the steep nature of Green Springs Creek, hydrographs were added with minimum flows approximately 10% of the peak inflow to the model. This minimum flow helped to prevent instabilities throughout the model during the ramp up and trailing end of the flows. They do not have an impact on peak flow results.

Base Flow

Due to the relatively steep nature of the Generations site, baseflows for on-site hydrographs were assumed negligible for channelized flow. However, for Green Springs Creek baseflows were assumed to be approximately 5% of the peak discharge from the upstream shed for 100-year and 10-year storms and 10% for the 2-year storm. These assumptions provide HEC-RAS model stability at low-flows and pre-fill any low-flow storage that may occur in the creek.

Manning's 'n' Values

Green Springs Creek's main channel is generally a clean winding channel with some pools, shoals, weeds, and stones. The section of GSC near the downstream property line has additional ineffective slopes and sections with heavier weeds and stones. These two conditions result in Manning's n values of 0.045 and 0.055 respectively. The overbank floodplains of GSC were given 3 characteristic values. The first was 0.05 which is typical for light brush and trees in winter. The second was 0.04 which is typical of cleared land with tree stumps, no sprouts and the third was 0.1 representing heavy stand of timber, a few down trees, little undergrowth with flood stage below branches.

To determine routing within HEC-HMS a Manning's n value of 0.06 was used for all routing. This value is higher than that used in for the creek itself because stages are expected to be lower in the elements modeled in HEC-HMS. A value of 0.06 considers the added impact of grasses on the flow and will results in a slightly reduced velocity, which would be expected in the grassy, low flow channels.

Downstream Boundary Condition

The downstream boundary condition was set to normal depth with a characteristic slope taken from the HEC-RAS terrain in the Green Springs Creek channel.

Green Springs Creek Existing Conditions

The existing conditions in Green Springs Creek were modeled in HEC-RAS to determine existing flows and water surface elevations throughout the project reach. Currently, there are two permanent water ponds in the project reach with high-elevation bypasses. The embankments for both of these ponds are overtopped during a 100-year event. Each pond's bypass can handle small storms, up to the 2-year storm, but larger events use the embankments to weir flow.

Additionally, there is a small culvert crossing at the upstream boundary of the Generations project site. To determine the upstream water surface elevations for the existing conditions this crossing and culvert were omitted from the model. This results in a reduced water surface elevation which is more conservative for the purpose of comparing upstream water surface elevations to ensure the upstream property is not impacted by the proposed development.

Green Springs Creek Proposed Conditions

The proposed conditions in Green Spring Creek maintain largely the same geometry with a few exceptions. First, both ponds are removed by providing culverts through the embankments or removing the embankment entirely. Second, the upstream culvert crossing was removed and replaced with large Conspan crossings which re-shape the bottom of the channel within the right-of-way. Third, minor overbank grading is proposed for the project site. This grading has little impact on the cross-sectional area of the creek.

Due to the removal of the two ponds, proposed features are recommended to replace the floodplain storage. The downstream pond embankment is removed entirely, and the channel restored to its approximate natural state. The upstream embankment now an access road to the site and an upstream flow-control structure is planned which will recreate the 2-year, 10-year, and 100-year storage of the two existing ponds. An additional road crossing will be added near the upstream boundary of the site but that crossing is anticipated to provide no storage.

The locations and criteria for comparison between the existing and proposed models are as follows:

- Downstream hydrographs for all events
- 100-Year water surface elevations at any location where the WSEs extend beyond the property line
- Upstream water surface elevation at the upstream property line for all events

To recreate downstream peak flows leaving the site, detention within the onsite reach of Green Springs Creek was studied at each of the road crossings. However, the upstream most crossing must not impede flows due to its proximity to the upstream property. Therefore, the detention must occur at the new Green Springs Creek road crossing near the existing ponds.

The road crossing has significant storage capacity on the upstream side due to the existing pond geometry in the undeveloped conditions. The proposed CON/SPAN must be adequately sized to rule out the possibility of plugging during a major storm event. To achieve the desired results, a weir structure was modeled upstream of the CON/SPAN as part of the wingwall structure with two low flow orifices to pass frequent storm events and maintain the low flow channel. The crossing was designed in such a way that if, in the unlikely event that the CON/SPAN is plugged, that the overtopping of the road will not result in ponded water surface elevations to the elevation of any nearby structure.

4. Modeling Results

4.1. HEC-HMS Model

Using the parameters discussed above, a HEC-HMS model was created for the pre-conditions and post-conditions site. Using the model and an iterative approach, detention basins were sized at each watershed which required mitigation and an outlet structure was proposed to meter the flows for the 2-year, 10-year, and 100-year storm events. Twelve critical points (also referred to as points of compliance) are shown on Exhibit 1.1 and Exhibit 2 in Appendix A for the pre and post conditions. As discussed, these critical points are all at the project boundary. Tables 1.1 and 1.2 show the pre and post conditions flows for the 100-year event at each critical point. Full results for all storms can be found in Appendix B. Values from HEC-RAS model (US-POND and GSP-POC) are included in the tables below. The HEC-RAS model will be discussed further in section 4.2. The flow presented for US-POND is for the cross section upstream of the eastern most crossing of GSP (HEC-RAS Station 3441.5) and it represents the flow change as a result of improving the crossing to a pair of CON/SPAN culverts. The flow presented in GSP-POC is at the downstream most end of the model (HEC-RAS Station 10. It is downstream of the property line and shows that there are no negative off-site impacts as a result of the development.

Table 1.1: Pre and Post Conditions Peak Flows at Critical Points.

100YR	GEN-01-POC	GEN-02-POC	GEN-03-POC	GEN-04-DS-POC	GEN-04-US POC	GEN-05-POC
Existing	73.4	55.3	53.3	107.4	21.6	58.0
Proposed	66.8	52.8	36.8	97.7	16.3	55.3
Reduction	91.0%	95.5%	69.0%	91.0%	75.5%	95.3%

Table 1.2: Pre and Post Conditions Peak Flows at Critical Points.

100YR	GEN-06-POC	GEN-07-POC	GEN-08-POC	GEN-11-POC	GEN-12-POC	US-POND	GSP-POC
Existing	97.7	27.7	58.3	1883.2	1878.2	1883.7	2040.7
Proposed	75.6	26.7	48.4	1881.0	1876.5	1881.4	1950.7
Reduction	77.4%	96.4%	83.0%	99.9%	99.9%	99.9%	95.6%

In all cases, the proposed conditions 100-year storm event is reduced below the existing conditions storm event at the property boundary. Since Gen-03 and Gen-04 drain to adjacent development the reduction in these watersheds is conservatively proposed to ensure no adverse impacts downstream. If, during improvement plan development, additional detail at these locations is available for analysis, the mitigation required may be reduced to achieve flows similar to the existing conditions flows.

The reductions in flow at the property boundary are achieved primarily by use of detention basins. Seven detention basins are proposed on-site to mitigate peak flows. Each basin and outlet structure is sized to not use the emergency spillway during the 100-year event under normal operations. If the outlet of the basin becomes plugged, the emergency spillway is designed to pass the 100-year event while maintaining 1.5 ft of freeboard to the basin top. Table 2 below list the peak 100-year water surface elevations during normal basin operations and elevations of the spillway and basin top. The "100-year Freeboard to Emergency Spillway" column represents the distance from the peak 100-year WSE during normal operation to the emergency spillway elevation.

Table 2: Detention Basin Results in NAVD88.

	PEAK 100-YR WSE	EMERGENCY SPILLWAY ELEV	BASIN TOP	100-YEAR FREEBOARD TO EMERGENCY SPILLWAY (FT)
BASIN 1	1182.1	1183.0	1185	0.9
BASIN 3	1090.8	1093.0	1095	2.2
BASIN 4	1087.2	1088.3*	1090.3	1.1
BASIN 5	1118.7	1118.8*	1120.8	0.1
BASIN 6A	1102.4	1103.0	1107	0.6
BASIN 6B	1149.2	1150.0	1152	0.8
BASIN 8	1133.6	1135.0	1137	1.4

*Basin 4 and Basin 5 emergency spillways are non-typical, draining into the adjacent road and down the road embankment. Flow path is rock lined, acting as a spillway.

Full HEC-HMS global summaries are included in Appendix B. The results indicate that proposed development of the Generations Project Site does not increase peak runoff at the key points for design storms under consideration.

4.2. HEC-RAS Model

In addition to the HEC-HMS model provided to size features to serve the bulk of the site, the HEC-RAS model is needed to show compliance in Green Springs Creek. An existing conditions and proposed conditions geometry was created to model the difference between pre and post conditions. In addition to the geometric changes to the channel, post-development hydrographs were entered into the post-conditions HEC-RAS model. By doing so, all development impacts are accounted for, and mitigation can be sized accordingly. Factors looked at for post-project mitigation are the peak flows at the downstream property limit and the water surface elevations throughout the channel reach (including the resultant upstream water surface elevation).

Timing of the peak flows was studied to determine if the model required extension downstream. If the peak flow in GSP was reduced, but the timing of the peak changed substantially, it may result in coincidence with New York Creek prior to discharge into Folsom Lake. The modeling shows that the peak flow of the proposed condition occurs at a time where the peak flow of the existing condition hydrograph remains greater than the proposed. So, although the peak will shift slightly later in developed conditions, the peak flow will remain below the existing flow even at the later time. This can be seen visually in Figure 3.

Compliance on the downstream section is determined by the flow hydrographs for Green Springs Creek leaving the project area. In the existing conditions, the 100-year and 10-year events overtop the existing pond embankments and flow continues downstream unrestricted. The removal of the downstream embankment to maintain a low flow channel makes the 2-year event an important factor when analyzing the downstream boundary condition for compliance. HEC-RAS resulting hydrographs for the downstream cross section at W Green Springs Rd are provided in Appendix C. Figure 3 also shows these hydrographs. These hydrographs show that the peak outflow has been reduced for storm events analyzed in this study.

Removal of the downstream embankment to maintain a low flow channel through Green Springs Creek, without added mitigation, results in increased flow during smaller storm events as mentioned previously. To maintain compliance at low flow conditions the downstream CON/SPAN requires a control structure to meter flows downstream across a range of storm events. A concept level render of the control structure can be found in Appendix C that shows the WSEs at the control structure for the analyzed storm events.

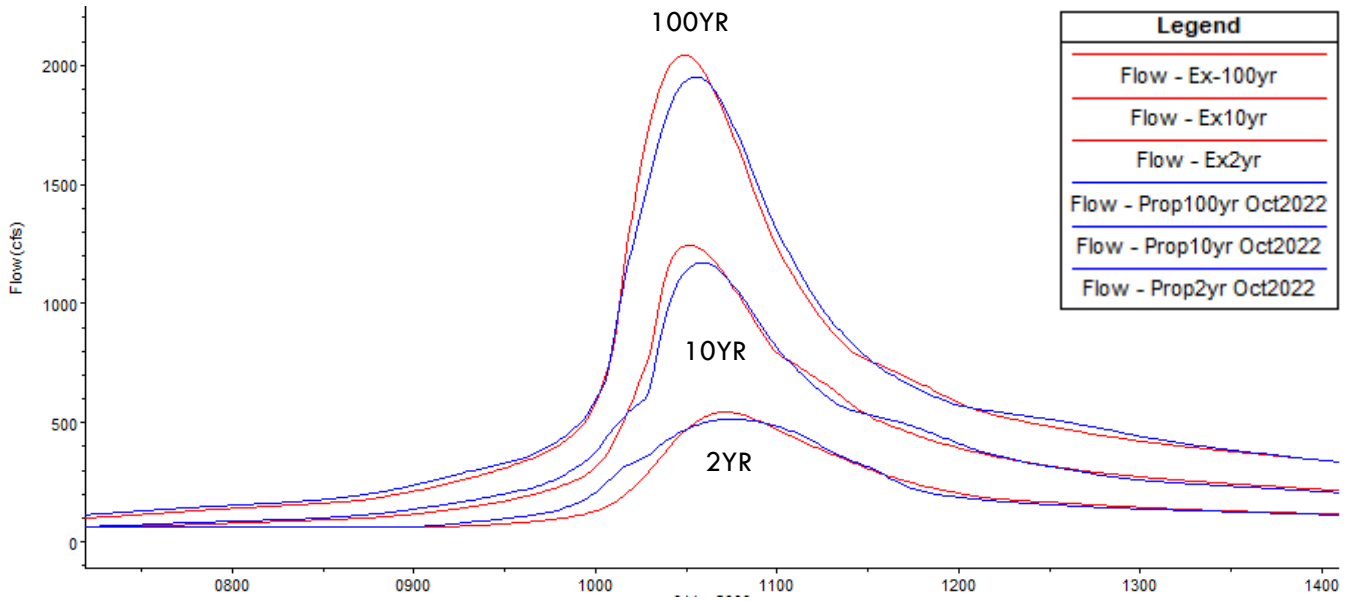


Figure 3. Green Springs Creek Hydrographs at Downstream Property Line

Compliance throughout the project reach and at the upstream boundary condition is determined by resulting water surface elevations. The upstream road crossing is near the property line which requires the CON/SPAN to be sufficiently large to maintain the existing floodplain limits across the property boundary. Several cross sections upstream of the property boundary are included to show the effects of the road crossing on the upstream property and can be seen in the profiles included in Appendix D. The results show that the WSEs are lower throughout the project reach with maximum increases in WSE of 0.1ft for the 100-year storm event. Any increase or decrease in WSE of 0.1ft or less is considered negligible and is within the computational accuracy of the model, often a result of the sensitivity of the calculations rather than a meaningful change to the flow or cross-sectional area.

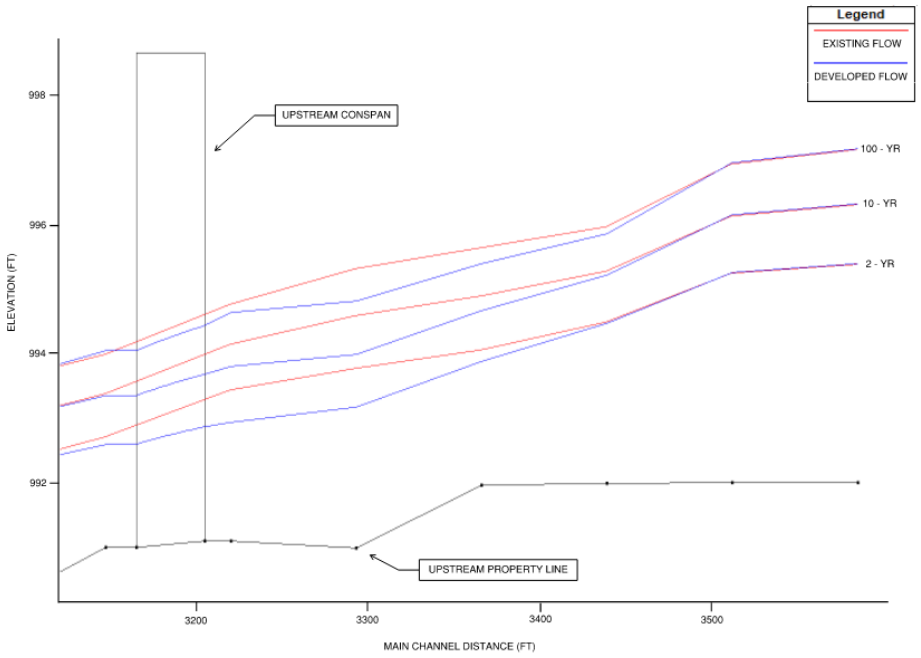


Figure 4. Green Springs Creek Upstream WSEs

Full HEC-RAS results are provided in Appendix C.

5. Hydromodification Mitigation

Hydromodification mitigation is provided to the satisfaction of the State Water Resources Quality Control Board MS4 Section E.12.f.ii.a. The post-project runoff shall not exceed estimated pre-project flow rates for the 2-year, 24-hour storm event. By establishing mitigation for the 2-year event in both the HEC-HMS model and HEC-RAS model the project has adequately satisfied the intent of the permit.

6. Low Impact Development

The Generations project is subject to low impact development (LID) standards per the El Dorado County West Slope Development and Redevelopment Standards and Post Construction Storm Water Plan Requirements. The development provides for LID on-site through bioretention basins which are either a part of a detention basin or built adjacent to the detention basin. The site also contains disconnected pavement and open space which provides for additional LID credit but are not considered in the sizing calculations. If, during improvement plan implementation, additional on-lot LID facilities are planned, the size of the bioretention basins can be reduced. Full LID credit will be achieved on-site through these features.

The tool provided on the El Dorado County website was used to create a template calculator for El Dorado County in Excel. Using the online tool, the following shared parameters were established for all LID facility sizing:

- Climate Station: Placerville
- Saturated Hydraulic Conductivity: 0.03 in/hr
- Impervious Area: Varies by shed
- Design Storm: 1.13 inches

Using the parameters above, a calculation was done for each watershed to determine the required size of any LID BMP type to treat the watershed. Appendix D contains the results of the calculations. On-site facilities are provided that meet the minimum sizing required for full LID credit.

7. Conclusion

The results of the analysis performed for this Technical Memorandum demonstrate that the proposed Generations development 2-year, 10-year, 100-year flows can be satisfactorily conveyed and mitigated within the proposed drainage facilities. The on-site storm drain system is not modeled in this TM since there is no off-site or regional storm drain system proposed and the on-site drainage system will be refined and calculated with the improvement plans. All detention facilities required to mitigate for on-site increase in impervious composition are calculated in this study in addition to facilities intended to recreate the lost floodplain storage in the creek. The in-line control structure in Green Springs Creek re-creates both the volume and conveyance necessary to allow the creek to pass the storm events similar to the existing conditions but without the overtopping of embankments or roads. Post-development peak flows are mitigated below pre-project conditions and the 100-year water surface elevations in the creek are below the existing elevations. HEC-HMS and HEC-RAS models are provided for review with this Technical Memorandum.

Appendix A: Exhibits

Exhibit 1.0: Overall Shed Map

Exhibit 1.1: Existing Shed Map

Exhibit 2: Developed Shed Map

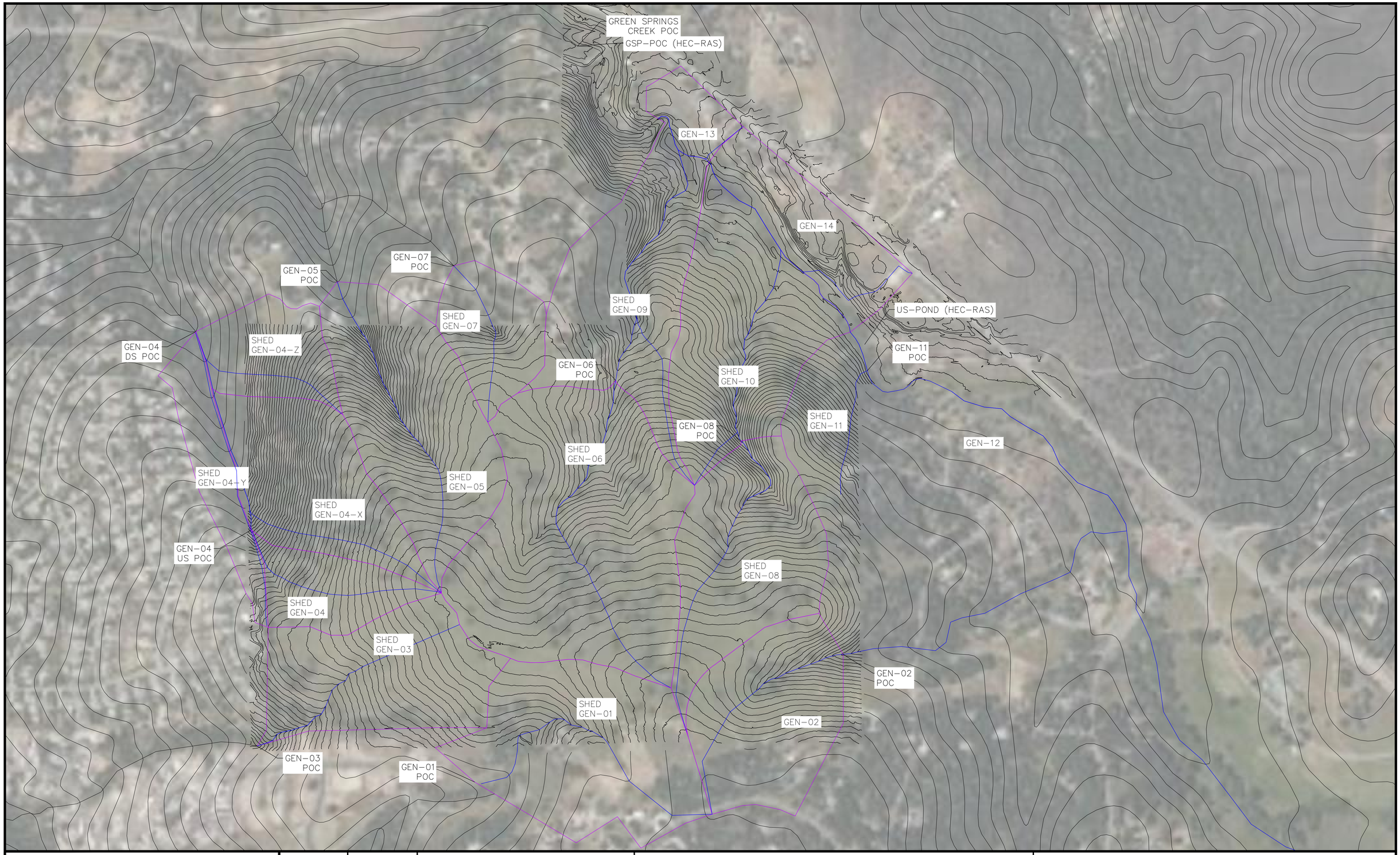
Exhibit 3: Hydraulic Routing Map

Exhibit 4: USDA Soil Map

Exhibit 5: FEMA FIRM

Exhibit 6: 100-year Flood Limits

	SCALE: 1:750	WARNING 0 1/2 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.	**DOMENICHELLI & ASSOCIATES** 5180 Golden Foothill Prkwy, Suite 220 El Dorado Hills, CA 95762 Ph: (916) 933-1997 Fax: (916) 933-4778	EXHIBIT 1.0 - OVERALL SHED MAP	GENERATIONS November 2022



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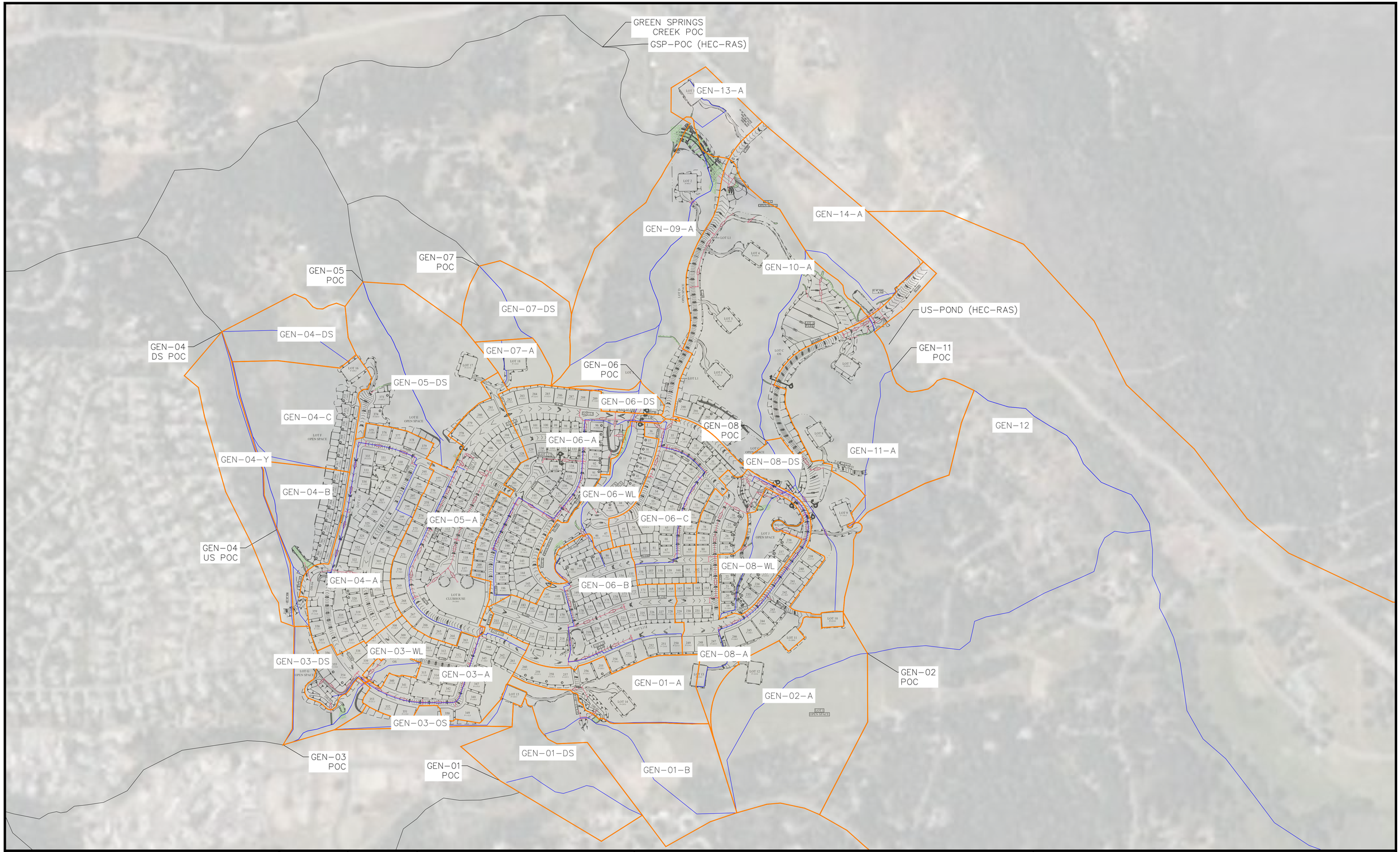


	SCALE: 1:300	WARNING 0 1/2 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.	**DOMENICHELLI & ASSOCIATES** 5180 Golden Foothill Prkwy, Suite 220 El Dorado Hills, CA 95762 Ph: (916) 933–1997 Fax: (916) 933–4778	EXHIBIT 2 - DEVELOPED SHED MAP	GENERATIONS November 2022

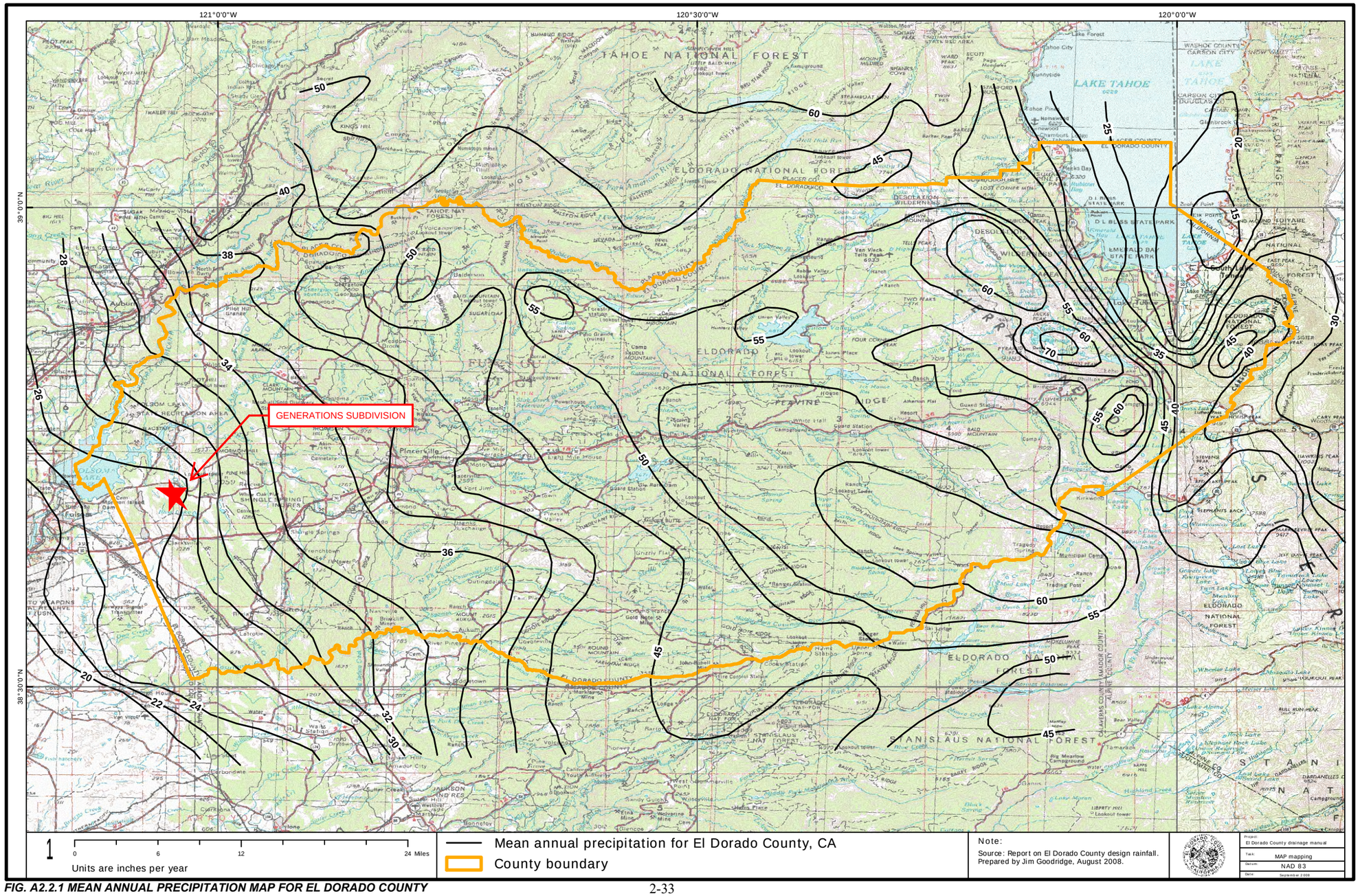
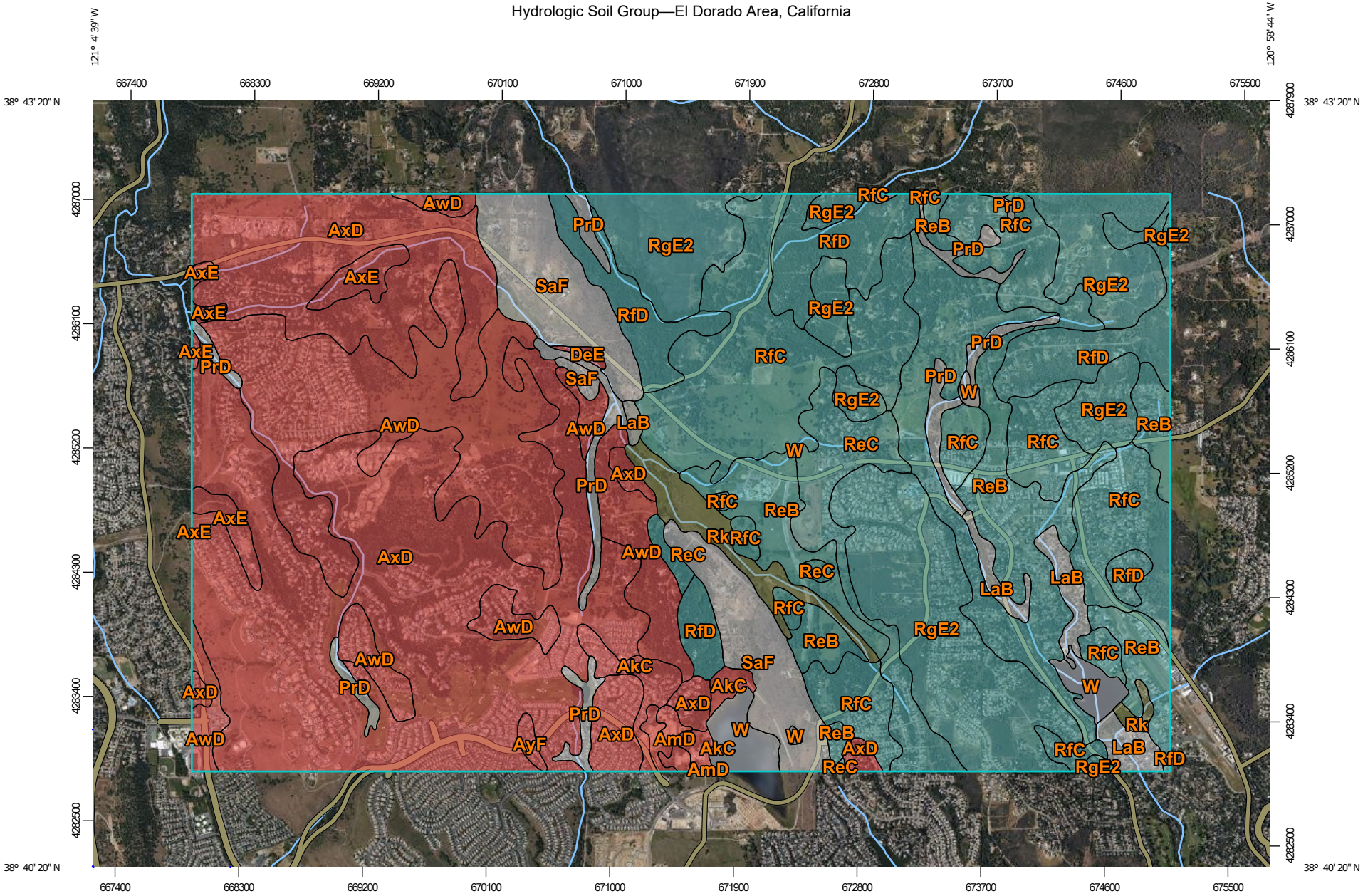


FIG. A2.2.1 MEAN ANNUAL PRECIPITATION MAP FOR EL DORADO COUNTY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120° 58' 44" W
38° 43' 20" N
38° 40' 20" N
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668300
669200
670100
671000
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673700
674600
675500
4287900
4287000
4286100
4285200
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4283400
4282500
AwD
AxD
AxE
PrD
RgE2
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DeE
LaB
ReC
W
RkRfC
AkC
AmD
AyF
RkC
LaB
Map Scale: 1:39,100 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 500 1000 2000 3000
Feet
0 1500 3000 6000 9000
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: El Dorado Area, California
Survey Area Data: Version 13, Sep 3, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 3, 2019—Oct 29, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The **community map repository** should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations** (BFEs) and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study Report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction, and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures in this jurisdiction.

The **projection** used in the preparation of this map was California State Plane, Zone II. The **horizontal datum** was NAD83, GRS80 spheroid. Differences in datum, spheroid, projection or State Plane zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the **same vertical datum**. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at http://www.ngs.noaa.gov or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, N/NGS12
National Geodetic Survey, SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at **(301) 713-3242**, or visit their website at http://www.ngs.noaa.gov/.

Base map information shown on this FIRM was derived from multiple sources. This information was compiled from the U.S. Geological Survey, 1989 and 1993, El Dorado County Surveyor Office, 2005, National Geodetic Survey, 2005, California Department of Forestry, 2004, and U.S. Bureau of Reclamation, 2003. Additional information was photogrammetrically compiled at a scale of 1:12,000 from U.S. Geological Survey aerial photography dated 1997 to 2001.

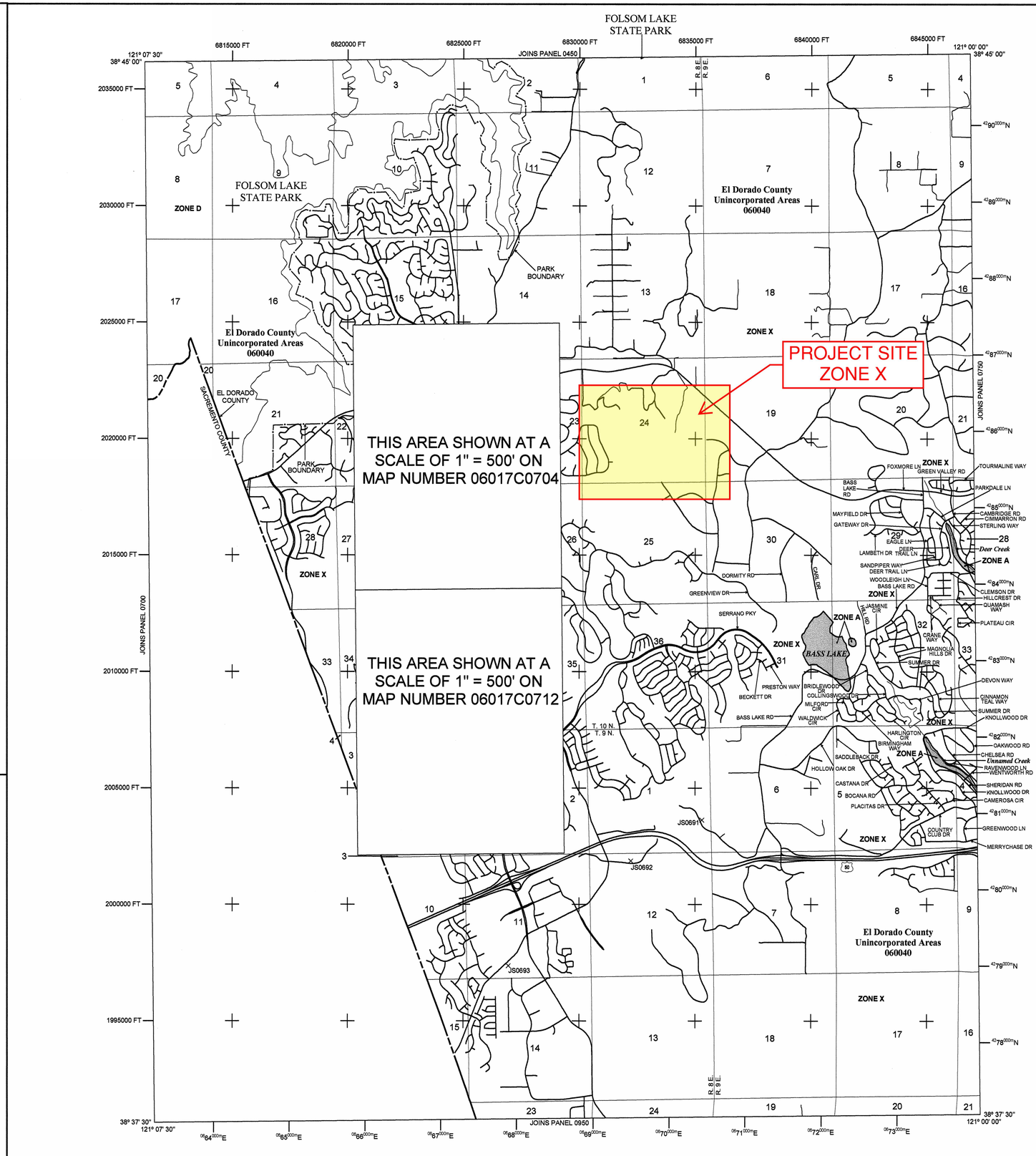
This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Service Center** at 1-800-358-9616 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FEMA Map Service Center may also be reached by Fax at 1-800-358-9620 and their website at http://www.msc.fema.gov/.

If you have **questions about this map** or questions concerning the National Flood Insurance Program in general, please call **1- 877- FEMA MAP** (1-877-336-2627) or visit the FEMA website at http://www.fema.gov/.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- **ZONE A** — No Base Flood Elevations determined.
- **ZONE AE** — Base Flood Elevations determined.
- **ZONE AH** — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- **ZONE AO** — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE AR** — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- **ZONE A99** — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- **ZONE V** — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- **ZONE VE** — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- **ZONE X** — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- **ZONE X** — Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- Floodplain boundary
- Floodway boundary
- Zone D Boundary
- CBRS and OPA Boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

- A — A — Cross section line
- 23 — 23 — Transect line
- 97° 07' 30", 32° 22' 30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 4276000m E — 1000-meter Universal Transverse Mercator grid values, zone 10
- 600000 FT — 5000-foot grid ticks: California State Plane coordinate system, zone II (FIPSZONE 0402), Lambert Conformal Conic Projection
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES
Refer to Map Repositories list on Map Index.

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP PANEL

SEPTEMBER 26, 2008

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 2000'

1000 0 2000 4000 FEET
300 0 600 1200 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0725E

FIRM

FLOOD INSURANCE RATE MAP

EL DORADO COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 725 OF 1125

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
EL DORADO COUNTY	060040	0725	E

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER 06017C0725E

EFFECTIVE DATE SEPTEMBER 26, 2008

Federal Emergency Management Agency

SCALE:

1:150

WARNING
0 1/2 1
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DOMENICHELLI & ASSOCIATES
5180 Golden Foothill Prkwy, Suite 220
El Dorado Hills, CA 95762
Ph: (916) 933-1997
Fax: (916) 933-4778

EXHIBIT 6 - 100-Year Floodplain Map

GENERATIONS
November 2022

Appendix B: Hydrology Data and Results

Table A2.2.1 Rainfall Depth Table with Return Period of 2 Years

El Dorado County Design Rainfall
Precipitation Depth Duration Frequency
Return Period 2 Years

Mean Annual Precipitation	5 Min	10 Min	15 Min	30 Min	1 Hour	2 Hour	3 Hour	6 Hour	12 Hour	1 Day	2 Day	3 Day	4 Day	5 Day	6 Day	8 Day	10 Day	15 Day	20 Day	30 Day	60 Day	365 Day
8	0.04	0.06	0.07	0.10	0.14	0.19	0.23	0.33	0.46	0.65	0.87	1.01	1.11	1.20	1.27	1.44	1.60	1.93	2.18	2.69	3.91	7.81
10	0.05	0.07	0.09	0.12	0.17	0.24	0.29	0.41	0.58	0.81	1.09	1.26	1.39	1.50	1.59	1.80	2.00	2.41	2.72	3.36	4.89	9.76
12	0.06	0.08	0.10	0.14	0.20	0.29	0.35	0.49	0.69	0.98	1.31	1.51	1.67	1.81	1.91	2.16	2.40	2.89	3.26	4.03	5.87	11.71
14	0.07	0.10	0.12	0.17	0.24	0.33	0.41	0.57	0.81	1.14	1.53	1.77	1.94	2.11	2.23	2.52	2.80	3.38	3.81	4.70	6.85	13.66
16	0.08	0.11	0.14	0.19	0.27	0.38	0.47	0.66	0.93	1.30	1.75	2.02	2.22	2.41	2.55	2.88	3.21	3.86	4.35	5.38	7.83	15.61
18	0.09	0.13	0.15	0.22	0.31	0.43	0.52	0.74	1.04	1.47	1.97	2.27	2.50	2.71	2.86	3.24	3.61	4.34	4.90	6.05	8.81	17.57
20	0.10	0.14	0.17	0.24	0.34	0.48	0.58	0.82	1.16	1.63	2.19	2.5	27=2.20	3.01	3.18	3.60	4.01	4.82	5.44	6.72	9.78	19.52
22	0.11	0.15	0.19	0.26	0.37	0.53	0.64	0.90	1.27	1.79	2.40	2.78	3.06	3.31	3.50	3.96	4.41	5.30	5.98	7.39	10.76	21.47
24	0.12	0.17	0.21	0.29	0.41	0.57	0.70	0.99	1.39	1.95	2.62	3.03	3.33	3.61	3.82	4.32	4.81	5.79	6.53	8.06	11.74	23.42
26	0.13	0.18	0.22	0.31	0.44	0.62	0.76	1.07	1.50	2.12	2.84	3.28	3.61	3.91	4.14	4.68	5.21	6.27	7.07	8.73	12.72	25.37
28	0.14	0.20	0.24	0.34	0.47	0.67	0.82	1.15	1.62	2.28	3.06	3.53	3.89	4.21	4.45	5.04	5.61	6.75	7.62	9.41	13.70	27.33
30	0.15	0.21	0.26	0.36	0.51	0.72	0.87	1.23	1.74	2.44	3.28	3.78	4.17	4.51	4.77	5.40	6.01	7.23	8.16	10.08	14.68	29.28
35	0.17	0.24	0.30	0.42	0.59	0.84	1.02	1.44	2.02	2.85	3.83	4.42	4.86	5.26	5.57	6.30	7.01	8.44	9.52	11.76	17.12	34.16
40	0.20	0.28	0.34	0.48	0.68	0.95	1.17	1.64	2.31	3.26	4.37	5.05	5.56	6.02	6.36	7.20	8.01	9.64	10.88	13.44	19.57	39.04
45	0.22	0.31	0.38	0.54	0.76	1.07	1.31	1.85	2.60	3.67	4.92	5.68	6.25	6.77	7.16	8.10	9.02	10.85	12.24	15.12	22.02	43.92
50	0.25	0.35	0.43	0.60	0.85	1.19	1.46	2.05	2.89	4.07	5.47	6.31	6.94	7.52	7.95	9.00	10.02	12.06	13.60	16.80	24.46	48.80
55	0.27	0.38	0.47	0.66	0.93	1.31	1.60	2.26	3.18	4.48	6.01	6.94	7.64	8.27	8.75	9.91	11.02	13.26	14.96	18.48	26.91	53.68
60	0.30	0.42	0.51	0.72	1.02	1.43	1.75	2.46	3.47	4.89	6.56	7.57	8.33	9.03	9.54	10.81	12.02	14.47	16.32	20.16	29.35	58.55
65	0.32	0.45	0.56	0.78	1.10	1.55	1.90	2.67	3.76	5.29	7.10	8.20	9.03	9.78	10.34	11.71	13.02	15.67	17.68	21.84	31.80	63.43
70	0.35	0.49	0.60	0.84	1.19	1.67	2.04	2.87	4.05	5.70	7.65	8.83	9.72	10.53	11.13	12.61	14.02	16.88	19.04	23.52	34.25	68.31

Source: Design Rainfall Tables for El Dorado County prepared by Jim Goodridge, August 30, 2008

Table A2.2.3 Rainfall Depth Table with Return Period of 10 Years

El Dorado County Design Rainfall
Precipitation Depth Duration Frequency
Return Period 10 Years

Mean Annual Precipitation	5 Min	10 Min	15 Min	30 Min	1 Hour	2 Hour	3 Hour	6 Hour	12 Hour	1 Day	2 Day	3 Day	4 Day	5 Day	6 Day	8 Day	10 Day	15 Day	20 Day	30 Day	60 Day	365 Day
8	0.06	0.09	0.11	0.15	0.22	0.30	0.37	0.52	0.73	1.03	1.42	1.68	1.87	2.04	2.16	2.44	2.67	3.13	3.53	4.32	6.22	11.79
10	0.08	0.11	0.14	0.19	0.27	0.38	0.46	0.65	0.92	1.29	1.78	2.10	2.34	2.54	2.70	3.05	3.34	3.92	4.42	5.40	7.77	14.74
12	0.09	0.13	0.16	0.23	0.32	0.45	0.56	0.78	1.10	1.55	2.13	2.52	2.81	3.05	3.24	3.66	4.01	4.70	5.30	6.48	9.32	17.68
14	0.11	0.16	0.19	0.27	0.38	0.53	0.65	0.91	1.28	1.81	2.49	2.94	3.27	3.56	3.78	4.28	4.68	5.48	6.18	7.56	10.88	20.63
16	0.13	0.18	0.22	0.31	0.43	0.61	0.74	1.04	1.47	2.07	2.84	3.36	3.74	4.07	4.32	4.89	5.34	6.27	7.07	8.64	12.43	23.58
18	0.14	0.20	0.24	0.34	0.48	0.68	0.83	1.17	1.65	2.33	3.20	3.78	4.21	4.58	4.86	5.50	6.01	7.05	7.95	9.72	13.98	26.52
20	0.16	0.22	0.27	0.38	0.54	0.76	0.93	1.30	1.83	2.58	3.55	4.2	27=3.49	5.09	5.40	6.11	6.68	7.83	8.83	10.79	15.54	29.47
22	0.17	0.24	0.30	0.42	0.59	0.83	1.02	1.43	2.02	2.84	3.91	4.62	5.15	5.60	5.94	6.72	7.35	8.62	9.72	11.87	17.09	32.42
24	0.19	0.27	0.33	0.46	0.65	0.91	1.11	1.56	2.20	3.10	4.26	5.04	5.61	6.11	6.48	7.33	8.01	9.40	10.60	12.95	18.65	35.36
26	0.20	0.29	0.35	0.50	0.70	0.98	1.20	1.69	2.39	3.36	4.62	5.46	6.08	6.62	7.02	7.94	8.68	10.18	11.48	14.03	20.20	38.31
28	0.22	0.31	0.38	0.53	0.75	1.06	1.30	1.82	2.57	3.62	4.97	5.88	6.55	7.13	7.55	8.55	9.35	10.97	12.37	15.11	21.75	41.26
30	0.24	0.33	0.41	0.57	0.81	1.14	1.39	1.95	2.75	3.88	5.33	6.30	7.02	7.63	8.09	9.16	10.02	11.75	13.25	16.19	23.31	44.21
35	0.28	0.39	0.47	0.67	0.94	1.33	1.62	2.28	3.21	4.52	6.21	7.35	8.19	8.91	9.44	10.69	11.69	13.71	15.46	18.89	27.19	51.57
40	0.32	0.44	0.54	0.76	1.08	1.51	1.85	2.61	3.67	5.17	7.10	8.40	9.36	10.18	10.79	12.21	13.36	15.67	17.67	21.59	31.08	58.94
45	0.35	0.50	0.61	0.86	1.21	1.70	2.08	2.93	4.13	5.81	7.99	9.46	10.53	11.45	12.14	13.74	15.03	17.62	19.88	24.29	34.96	66.31
50	0.39	0.55	0.68	0.95	1.34	1.89	2.31	3.26	4.59	6.46	8.88	10.51	11.69	12.72	13.49	15.27	16.70	19.58	22.08	26.99	38.84	73.68
55	0.43	0.61	0.75	1.05	1.48	2.08	2.54	3.58	5.05	7.11	9.76	11.56	12.86	14.00	14.84	16.79	18.37	21.54	24.29	29.69	42.73	81.04
60	0.47	0.67	0.81	1.15	1.61	2.27	2.78	3.91	5.50	7.75	10.65	12.61	14.03	15.27	16.19	18.32	20.04	23.50	26.50	32.38	46.61	88.41
65	0.51	0.72	0.88	1.24	1.75	2.46	3.01	4.23	5.96	8.40	11.54	13.66	15.20	16.54	17.54	19.85	21.71	25.46	28.71	35.08	50.50	95.78
70	0.55	0.78	0.95	1.34	1.88	2.65	3.24	4.56	6.42	9.04	12.43	14.71	16.37	17.81	18.89	21.38	23.38	27.42	30.92	37.78	54.38	#####

Source: Design Rainfall Tables for El Dorado County prepared by Jim Goodridge, August 30, 2008

Table A2.2.6 Rainfall Depth Table with Return Period of 100 Years

El Dorado County Design Rainfall
Precipitation Depth Duration Frequency
Return Period 100 Years

Mean Annual Precipitation	5 Min	10 Min	15 Min	30 Min	1 Hour	2 Hour	3 Hour	6 Hour	12 Hour	1 Day	2 Day	3 Day	4 Day	5 Day	6 Day	8 Day	10 Day	15 Day	20 Day	30 Day	60 Day	365 Day
8	0.09	0.13	0.15	0.22	0.30	0.43	0.52	0.74	1.04	1.46	2.03	2.43	2.72	2.97	3.15	3.53	3.80	4.34	4.93	5.95	8.45	15.52
10	0.11	0.16	0.19	0.27	0.38	0.54	0.65	0.92	1.30	1.83	2.54	3.04	3.40	3.71	3.94	4.42	4.75	5.42	6.16	7.43	10.56	19.40
12	0.13	0.19	0.23	0.32	0.46	0.64	0.78	1.11	1.56	2.19	3.05	3.65	4.08	4.45	4.73	5.30	5.71	6.50	7.40	8.92	12.67	23.28
14	0.16	0.22	0.27	0.38	0.53	0.75	0.92	1.29	1.82	2.56	3.55	4.26	4.76	5.19	5.51	6.18	6.66	7.59	8.63	10.41	14.78	27.16
16	0.18	0.25	0.31	0.43	0.61	0.86	1.05	1.47	2.08	2.92	4.06	4.87	5.44	5.94	6.30	7.07	7.61	8.67	9.86	11.89	16.89	31.04
18	0.20	0.28	0.34	0.49	0.68	0.96	1.18	1.66	2.33	3.29	4.57	5.47	6.12	6.68	7.09	7.95	8.56	9.76	11.09	13.38	19.00	34.92
20	0.22	0.31	0.38	0.54	0.76	1.07	1.31	1.84	2.59	3.65	5.08	6.0	27=4.93	7.42	7.88	8.83	9.51	10.84	12.33	14.86	21.12	38.80
22	2.24	0.34	0.42	0.59	0.84	1.18	1.44	2.03	2.85	4.02	5.59	6.69	7.48	8.16	8.66	9.72	10.46	11.92	13.56	16.35	23.23	42.69
24	0.27	0.38	0.46	0.65	0.91	1.28	1.57	2.21	3.11	4.38	6.09	7.30	8.17	8.90	9.45	10.60	11.41	13.01	14.79	17.84	25.34	46.57
26	0.29	0.41	0.50	0.70	0.99	1.39	1.70	2.39	3.37	4.75	6.60	7.91	8.85	9.64	10.24	11.48	12.36	14.09	16.02	19.32	27.45	50.45
28	0.31	0.44	0.54	0.76	1.06	1.50	1.83	2.58	3.63	5.11	7.11	8.51	9.53	10.39	11.03	12.37	13.31	15.18	17.26	20.81	29.56	54.33
30	0.33	0.47	0.57	0.81	1.14	1.61	1.96	2.76	3.89	5.48	7.62	9.12	10.21	11.13	11.81	13.25	14.26	16.26	18.49	22.30	31.67	58.21
35	0.39	0.55	0.67	0.94	1.33	1.87	2.29	3.22	4.54	6.39	8.89	10.64	11.91	12.98	13.78	15.46	16.64	18.97	21.57	26.01	36.95	67.91
40	0.45	0.63	0.77	1.08	1.52	2.14	2.62	3.68	5.19	7.31	10.15	12.16	13.61	14.84	15.75	17.67	19.02	21.68	24.65	29.73	42.23	77.61
45	0.50	0.71	0.86	1.21	1.71	2.41	2.94	4.14	5.84	8.22	11.42	13.68	15.31	16.69	17.72	19.87	21.40	24.39	27.73	33.45	47.51	87.31
50	0.56	0.78	0.96	1.35	1.90	2.68	3.27	4.60	6.48	9.13	12.69	15.20	17.01	18.55	19.69	22.08	23.77	27.10	30.81	37.16	52.79	97.01
55	0.61	0.86	1.05	1.48	2.09	2.94	3.60	5.06	7.13	10.05	13.96	16.72	18.71	20.40	21.66	24.29	26.15	29.81	33.89	40.88	58.07	106.71
60	0.67	0.94	1.15	1.62	2.28	3.21	3.92	5.53	7.78	10.96	15.23	18.24	20.41	22.26	23.63	26.50	28.53	32.52	36.98	44.59	63.35	116.41
65	0.72	1.02	1.25	1.75	2.47	3.48	4.25	5.99	8.43	11.87	16.50	19.76	22.11	24.11	25.59	28.71	30.90	35.23	40.06	48.31	68.62	126.12
70	0.78	1.10	1.34	1.89	2.66	3.75	4.58	6.45	9.08	12.79	17.77	21.28	23.82	25.97	27.56	30.92	33.28	37.94	43.14	52.03	73.90	135.82

Source: Design Rainfall Tables for El Dorado County prepared by Jim Goodridge, August 30, 2008

Table 2-2c Runoff curve numbers for other agricultural lands [1/]

Cover description		Curve numbers for hydrologic soil group			
Cover type	Hydrologic condition	A	B	C	D
Pasture, grassland, or range—continuous forage for grazing. [2/]	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally mowed for hay.	—	30	58	71	78
Brush—brush-weed-grass mixture with brush the major element. [3/]	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	30 [4/]	48	65	73
Woods—grass combination (orchard or tree farm). [5/]	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods. [6/]	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	30 [4/]	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots.	—	59	74	82	86

1 Average runoff condition, and $I_a = 0.2S$.

2 *Poor:* <50%) ground cover or heavily grazed with no mulch.
Fair: 50 to 75% ground cover and not heavily grazed.
Good: > 75% ground cover and lightly or only occasionally grazed.

3 *Poor:* <50% ground cover.
Fair: 50 to 75% ground cover.
Good: >75% ground cover.

4 Actual curve number is less than 30; use CN = 30 for runoff computations.

5 CN's shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CN's for woods and pasture.

6 *Poor:* Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.
Fair: Woods are grazed but not burned, and some forest litter covers the soil.
Good: Woods are protected from grazing, and litter and brush adequately cover the soil.

Table 2-2a Runoff curve numbers for urban areas [1/]

Cover description: Cover type and hydrologic condition	Average percent impervious area [2/]	Curve numbers for hydrologic soil group: A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.) [3/]:					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) [4/]		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Developing urban areas					
Newly graded areas (pervious areas only, no vegetation) [5/]		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

[1] Average runoff condition, and $I_a = 0.2S$.

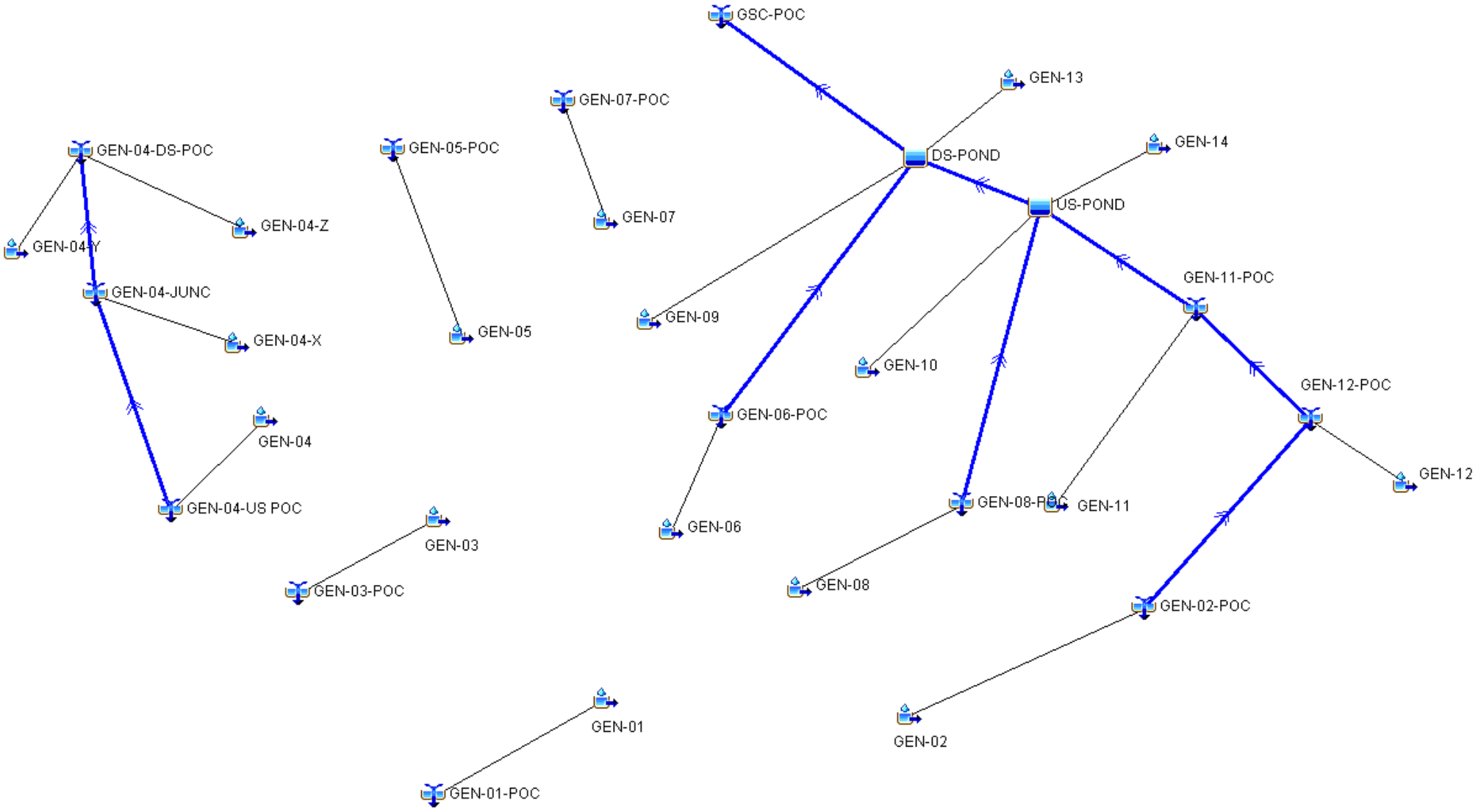
[2] The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

[3] CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

[4] Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

[5] Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

HEC-HMS - EXISTING CONDITIONS



1) Shed Area Description

SUB BASIN	Percent woods	Area Woods (ft^2)	Area Pasture (ft^2)	Area 1/4 AC lot (ft^2)	CN	Total Area (FT^2)	Total Area (AC)	Total Area (SqM)	Imp. Area (FT2)	Percent Imperv (%)
GEN-01	20%	302603	1210411	0	83.6	1592646	36.6	0.0571	79632	5%
GEN-02	30%	318488	743140	0	83.4	1117503	25.7	0.0401	55875	5%
GEN-03	5%	58443	1110422	0	83.9	1168865	26.8	0.0419	0	0%
GEN-04	10%	48185	433667	0	83.8	481852	11.1	0.0173	0	0%
GEN-04-X	85%	907310	160114	0	82.3	1067424	24.5	0.0383	0	0%
GEN-04-Y	50%	228271	0	228271	84.5	456543	10.5	0.0164	74194	16%
GEN-04-Z	85%	431497	76147	0	82.3	534362	12.3	0.0192	26718	5%
GEN-05	30%	442999	1033663	0	83.4	1506798	34.6	0.0540	30136	2%
GEN-06	20%	506583	2026333	0	83.6	2532916	58.1	0.0909	0	0%
GEN-07	30%	155508	362853	0	83.4	545643	12.5	0.0196	27282	5%
GEN-08	10%	125351	1128156	0	83.8	1253507	28.8	0.0450	0	0%
GEN-09	50%	654476	654475	0	83.0	1377843	31.6	0.0494	68892	5%
GEN-10	10%	143909	1295178	0	83.8	1439087	33.0	0.0516	0	0%
GEN-11	60%	507454	338302	0	82.8	909415	20.9	0.0326	63659	7%
GEN-12	31%	22731268	30339335	17256068	79.0	73326671	1683.3	2.6302	3000000	4%
GEN-13	5%	9244	175638	15000	84.1	235155	5.4	0.0084	35273	15%
GEN-14	5%	33134	629543	20000	84.0	718607	16.5	0.0258	35930	5%

EXISTING SHED LAG TIME CALCULATIONS

2) Lag Time

SUB BASIN		Travel Time																		Lag time
		Overland flow					Shallow Concentrated						Channel flow						total travel time	
		Start Elev	End Elev	Length	Slope	time(min)	Start Elev	End Elev	Length	Slope	vel(fps)	time	Start Elev	End Elev	Length	slope	vel	time	(min)	(min)
GEN-01		1262	1239	300	0.077	14	1239	1126	1840	0.061	4.1	7.5	1126			-	-	-	21	**12.6**
GEN-02		1262	1230	300	0.107	12	1230	1149	1356	0.060	4.0	5.6	1149			-	-	-	18	**10.5**
GEN-03		1192	1173	300	0.063	15	1173	1020	1397	0.110	5.3	4.4	1020			-	-	-	19	**11.4**
GEN-04		1190	1178	300	0.040	18	1178	1080	1231	0.080	4.6	4.4	1080			-	-	-	22	**13.2**
GEN-04-X		1190	1178	300	0.040	18	1178	932	1200	0.205	7.4	2.7	932			-	-	-	20	**12.2**
GEN-04-Y		1105	1090	170	0.088	8	1090	1050	386	0.104	5.2	1.2	1050	840	1630	0.1288	10.0	2.7	12	**7.3**
GEN-04-Z		1190	1178	300	0.040	18	1178	840	972	0.348	9.4	1.7	840			-	-	-	19	**11.6**
GEN-05		1190	1186	300	0.020	23	1186	960	2054	0.110	5.3	6.4	960			-	-	-	30	**17.8**
GEN-06		1229	1221	300	0.027	21	1221	1072	2244	0.066	4.2	8.8	1072			-	-	-	30	**17.7**
GEN-07		1142	1133	300	0.030	14	1133	1040	875	0.106	5.3	2.8	1040			-	-	-	16	**9.8**
GEN-08		1242	1231	300	0.037	13	1231	1078	2047	0.075	4.5	7.6	1078			-	-	-	20	**12.1**
GEN-09		1159	1142	300	0.057	15	1142	975	2324	0.072	4.4	8.8	975	974	308	0.0032	2.4	2.2	26	**15.8**
GEN-10		1159	1123	300	0.120	11	1123	985	1529	0.090	4.9	5.2	985	980	799	0.0063	3.3	4.1	21	**12.4**
GEN-11		1166	1136	300	0.100	12	1136	992	906	0.159	6.4	2.4	992	991	295	0.0034	2.4	2.0	17	**10.0**
GEN-12		1445	1443	100	0.020	10	1443	1295	904	0.164	6.5	2.3	1295	1150	4750	0.0305	5.1	15.6	28	-
													1150	1020	6700	0.0194	6.8	16.5	44	-
													1020	990	3000	0.0100	4.9	10.3	54	**32.6**
GEN-13		1001	986	300	0.050	16	986	977	55	0.164	6.5	0.1	977	974	501	0.0060	3.2	2.6	19	**11.3**
GEN-14		1034	1028	245	0.024	18	1028	985	710	0.061	4.1	2.9	985	980	1016	0.0049	2.9	5.8	27	**16.2**

Overland time per equation 3-3 TR 55: n=0.24 or 0.15, p=7.0, Max L=300, Tt=(.007(nL)^.8)/((P)^.5 (s)^.4)

Shallow concentrated flow velocity based on Figure 3-1, TR-55: Length(ft) = 2000 max

Channel flow based on Manning's equation

Lag time = total travel time x 0.6

3) Reaches

Reach	US ELV	DS ELV	LENGTH	SLOPE	N VALUE	xH:1v	BOTTOM WIDTH	CELERITY
GEN-04-X-REACH	1070	932	836	0.165	0.06	3		5
GEN-04-Z-REACH	932	840	937	0.098	0.06	3		5
GEN-09-REACH	1073	974	2137	0.046	0.06	5		5
GEN-10-REACH	1078	980	2216	0.044	0.06	3.5		5
GEN-11-REACH	997	991	1004	0.006	0.06	15	15	5
GEN-12-REACH	1149	997	3988	0.038	0.06	10	15	5
GEN-13-REACH	980	974	546	0.011	0.06	6	15	5
GEN-14-REACH	991	980	1568	0.007	0.06	12	15	5

HEC-HMS EXISTING CONDITIONS

GLOBAL SUMMARY OF RESULTS

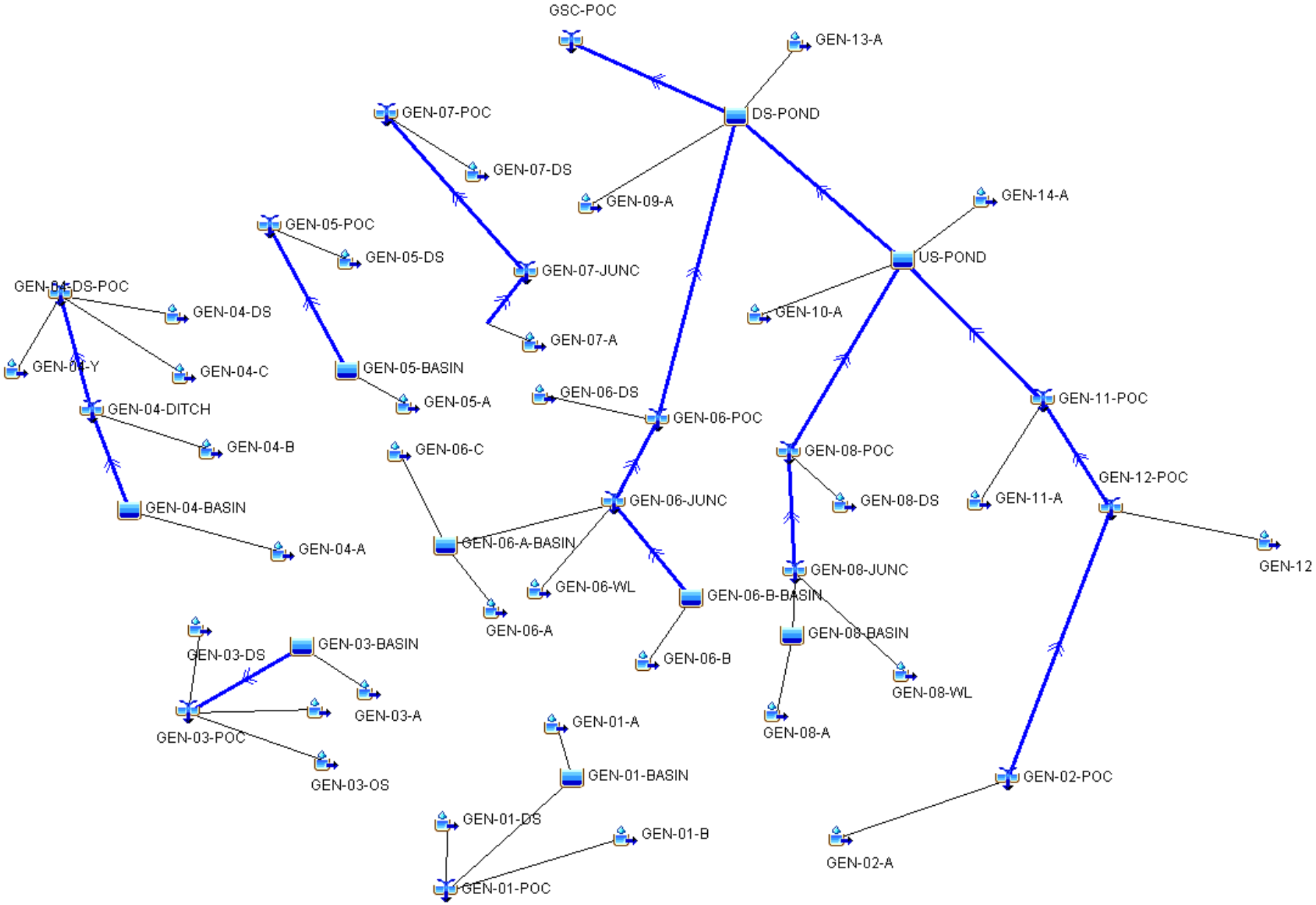
DOMENICHELLI AND ASSOCIATES, INC.
CIVIL ENGINEERING

EXISTING 2-YEAR RESULTS				
Element	Drainage Area (SqMi)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
GEN-05	0.054	18.4	Jan2013, 10:	1.18
GEN-04-X	0.0383	9.9	Jan2013, 10:	0.8
GEN-04	0.0173	6.8	Jan2013, 10:	1.17
GEN-04-US POC	0.0173	6.8	Jan2013, 10:	1.17
GEN-04-X-REAC	0.0173	6.8	Jan2013, 10:	1.17
GEN-04-JUNC	0.0556	16.5	Jan2013, 10:	0.91
GEN-04-Z-REAC	0.0556	16.5	Jan2013, 10:	0.91
GEN-04-Z	0.0192	5.6	Jan2013, 10:	0.87
GEN-04-Y	0.0164	7.6	Jan2013, 10:	1.12
GEN-12	2.6302	555.6	Jan2013, 10:	1.04
GEN-02	0.0401	17.9	Jan2013, 10:	1.21
GEN-02-POC	0.0401	17.9	Jan2013, 10:	1.21
GEN-12-REACH	0.0401	17.7	Jan2013, 10:	1.21
GEN-12-POC	2.6703	569.4	Jan2013, 10:	1.05
GEN-11-REACH	2.6703	567	Jan2013, 10:	1.05
GEN-11	0.0326	14.9	Jan2013, 10:	1.21
GEN-11-POC	2.7029	570.9	Jan2013, 10:	1.05
GEN-14-REACH	2.7029	568.1	Jan2013, 10:	1.05
GEN-08	0.045	18.5	Jan2013, 10:	1.17
GEN-08-POC	0.045	18.5	Jan2013, 10:	1.17
GEN-10	0.0516	22.9	Jan2013, 10:	1.17
GEN-10-REACH	0.045	18.4	Jan2013, 10:	1.17
GEN-14	0.0258	9.7	Jan2013, 10:	1.23
US-POND	2.8253	566.6	Jan2013, 10:	1.05
GEN-13-REACH	2.8253	566.1	Jan2013, 10:	1.05
GEN-06	0.0909	30.8	Jan2013, 10:	1.16
GEN-06-POC	0.0909	30.8	Jan2013, 10:	1.16
GEN-09-REACH	0.0909	30.8	Jan2013, 10:	1.16
GEN-09	0.0494	18.1	Jan2013, 10:	1.19
GEN-13	0.0084	4	Jan2013, 10:	1.34
DS-POND	2.974	515.1	Jan2013, 10:	1.06
AR	2.974	514.9	Jan2013, 10:	1.06
GSC-POC	2.974	514.9	Jan2013, 10:	1.06
GEN-04-DS-POC	0.0912	27.5	Jan2013, 10:	0.94
GEN-01	0.0571	23.8	Jan2013, 10:	1.21
GEN-01-POC	0.0571	23.8	Jan2013, 10:	1.21
GEN-05-POC	0.054	18.4	Jan2013, 10:	1.18
GEN-07	0.0196	9	Jan2013, 10:	1.21
GEN-03	0.0401	16.9	Jan2013, 10:	1.18
GEN-03-POC	0.0401	16.9	Jan2013, 10:	1.18
GEN-07-POC	0.0196	9	Jan2013, 10:	1.21

EXISTING 10-YEAR RESULTS				
Element	Drainage Area (SqMi)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
GEN-05	0.054	36.2	Jan2013, 10	2.25
GEN-04-X	0.0383	24.9	Jan2013, 10	1.8
GEN-04	0.0173	13.5	Jan2013, 10	2.25
GEN-04-US POC	0.0173	13.5	Jan2013, 10	2.25
GEN-04-X-REAC	0.0173	13.5	Jan2013, 10	2.25
GEN-04-JUNC	0.0556	37.9	Jan2013, 10	1.94
GEN-04-Z-REAC	0.0556	38	Jan2013, 10	1.94
GEN-04-Z	0.0192	13.3	Jan2013, 10	1.88
GEN-04-Y	0.0164	15.8	Jan2013, 10	2.21
GEN-12	2.6302	1122.7	Jan2013, 10	2.04
GEN-02	0.0401	34.8	Jan2013, 10	2.29
GEN-02-POC	0.0401	34.8	Jan2013, 10	2.29
GEN-12-REACH	0.0401	34.6	Jan2013, 10	2.29
GEN-12-POC	2.6703	1148.7	Jan2013, 10	2.04
GEN-11-REACH	2.6703	1144.1	Jan2013, 10	2.04
GEN-11	0.0326	29	Jan2013, 10	2.28
GEN-11-POC	2.7029	1151.8	Jan2013, 10	2.04
GEN-14-REACH	2.7029	1146.5	Jan2013, 10	2.04
GEN-08	0.045	36.5	Jan2013, 10	2.25
GEN-08-POC	0.045	36.5	Jan2013, 10	2.25
GEN-10	0.0516	45.1	Jan2013, 10	2.25
GEN-10-REACH	0.045	36.4	Jan2013, 10	2.25
GEN-14	0.0258	18.8	Jan2013, 10	2.32
US-POND	2.8253	1162.9	Jan2013, 10	2.05
GEN-13-REACH	2.8253	1162.3	Jan2013, 10	2.05
GEN-06	0.0909	61	Jan2013, 10	2.23
GEN-06-POC	0.0909	61	Jan2013, 10	2.23
GEN-09-REACH	0.0909	60.9	Jan2013, 10	2.23
GEN-09	0.0494	35.3	Jan2013, 10	2.26
GEN-13	0.0084	7.5	Jan2013, 10	2.45
DS-POND	2.974	1200.3	Jan2013, 10	2.06
AR	2.974	1200.1	Jan2013, 10	2.06
GSC-POC	2.974	1200.1	Jan2013, 10	2.06
GEN-04-DS-POC	0.0912	63.3	Jan2013, 10	1.97
GEN-01	0.0571	46.2	Jan2013, 10	2.3
GEN-01-POC	0.0571	46.2	Jan2013, 10	2.3
GEN-05-POC	0.054	36.2	Jan2013, 10	2.25
GEN-07	0.0196	17.5	Jan2013, 10	2.29
GEN-03	0.0401	33.4	Jan2013, 10	2.25
GEN-03-POC	0.0401	33.4	Jan2013, 10	2.25
GEN-07-POC	0.0196	17.5	Jan2013, 10	2.29

EXISTING 100-YEAR RESULTS				
Element	Drainage Area (SqMi)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
GEN-05	0.054	58	Jan2013, 10	3.54
GEN-04-X	0.0383	43.8	Jan2013, 10	3.04
GEN-04	0.0173	21.6	Jan2013, 10	3.54
GEN-04-US POC	0.0173	21.6	Jan2013, 10	3.54
GEN-04-X-REAC	0.0173	21.6	Jan2013, 10	3.54
GEN-04-JUNC	0.0556	64.6	Jan2013, 10	3.2
GEN-04-Z-REAC	0.0556	64.6	Jan2013, 10	3.2
GEN-04-Z	0.0192	22.9	Jan2013, 10	3.14
GEN-04-Y	0.0164	25.6	Jan2013, 10	3.52
GEN-12	2.6302	1837.3	Jan2013, 10	3.27
GEN-02	0.0401	55.3	Jan2013, 10	3.58
GEN-02-POC	0.0401	55.3	Jan2013, 10	3.58
GEN-12-REACH	0.0401	55.1	Jan2013, 10	3.59
GEN-12-POC	2.6703	1878.2	Jan2013, 10	3.27
GEN-11-REACH	2.6703	1870.8	Jan2013, 10	3.27
GEN-11	0.0326	46	Jan2013, 10	3.57
GEN-11-POC	2.7029	1883.2	Jan2013, 10	3.28
GEN-14-REACH	2.7029	1875.3	Jan2013, 10	3.27
GEN-08	0.045	58.3	Jan2013, 10	3.54
GEN-08-POC	0.045	58.3	Jan2013, 10	3.54
GEN-10	0.0516	72.1	Jan2013, 10	3.54
GEN-10-REACH	0.045	58.2	Jan2013, 10	3.54
GEN-14	0.0258	29.7	Jan2013, 10	3.62
US-POND	2.8253	1901.9	Jan2013, 10	3.28
GEN-13-REACH	2.8253	1901.5	Jan2013, 10	3.28
GEN-06	0.0909	97.7	Jan2013, 10	3.53
GEN-06-POC	0.0909	97.7	Jan2013, 10	3.53
GEN-09-REACH	0.0909	97.6	Jan2013, 10	3.53
GEN-09	0.0494	56.4	Jan2013, 10	3.56
GEN-13	0.0084	11.8	Jan2013, 10	3.77
DS-POND	2.974	1972.5	Jan2013, 10	3.29
AR	2.974	1972.2	Jan2013, 10	3.29
GSC-POC	2.974	1972.2	Jan2013, 10	3.29
GEN-04-DS-POC	0.0912	107.4	Jan2013, 10	3.24
GEN-01	0.0571	73.4	Jan2013, 10	3.6
GEN-01-POC	0.0571	73.4	Jan2013, 10	3.6
GEN-05-POC	0.054	58	Jan2013, 10	3.54
GEN-07	0.0196	27.7	Jan2013, 10	3.58
GEN-03	0.0401	53.3	Jan2013, 10	3.55
GEN-03-POC	0.0401	53.3	Jan2013, 10	3.55
GEN-07-POC	0.0196	27.7	Jan2013, 10	3.58

HEC-HMS - DEVELOPED CONDITIONS



SHED AREA CHARACTERISTICS - DEVELOPED

DOMENICHELLI AND ASSOCIATES, INC.
CIVIL ENGINEERING

1) Shed Area Description

SUB BASIN	Area Woods (%)	Area Pasture (%)	Area 1/3 AC lot (%)	Area 1/4 AC lot (%)	Area 1/8 AC lot (%)	Area Woods (ft^2)	Area Pasture (ft^2)	Area 1/3 AC lot (ft^2)	Area 1/4 AC lot (ft^2)	Area 1/8 AC lot (ft^2)	CN	Total Area (ft^2)	Total Area (AC)	Total Area (SqM)	Imp. Area (ft^2)	Percent Imperv (%)
GEN-01-A	5%	70%	20%	0%	0%	23500	326944	92986	0	0	84.3	469992	10.8	0.0169	26562	6%
GEN-01-B	10%	83%	0%	0%	0%	70613	584809	0	0	0	83.8	706128	16.2	0.0253	50706	7%
GEN-01-DS	25%	64%	2%	0%	0%	126766	326491	9308	0	0	83.5	507065	11.6	0.0182	44500	9%
GEN-02-A	30%	66%	4%	0%	0%	324761	719549	40885	0	0	83.5	1082538	24.9	0.0388	2000	0%
GEN-03-A	5%	29%	0%	49%	0%	32400	185088	0	319880	0	85.7	648008	14.9	0.0232	110640	17%
GEN-03-WL	0%	100%	0%	0%	0%	0	54762	0	0	0	84.0	54762	1.3	0.0020	0	0%
GEN-03-OS	30%	53%	17%	0%	0%	38819	68262	22317	0	0	83.7	129398	3.0	0.0046	0	0%
GEN-03-DS	30%	70%	0%	0%	0%	54964	128250	0	0	0	83.4	183214	4.2	0.0066	0	0%
GEN-04-A	0%	34%	0%	47%	0%	0	268471	0	376804	0	85.8	793835	18.2	0.0285	148560	19%
GEN-04-B	5%	77%	0%	18%	0%	17946	277648	0	63334	0	84.4	358928	8.2	0.0129	0	0%
GEN-04-C	60%	28%	3%	10%	0%	339270	156325	14905	54950	0	83.1	565450	13.0	0.0203	0	0%
GEN-04-DS	80%	11%	0%	0%	0%	257498	35704	0	0	0	82.2	321872	7.4	0.0115	28670	9%
GEN-04-Y	50%	0%	0%	50%	0%	228271	0	0	228271	0	84.5	456542	10.5	0.0164	74194	16%
GEN-05-A	2%	22%	0%	42%	0%	17088	190826	0	359479	0	85.8	854423	19.6	0.0306	287030	34%
GEN-05-DS	40%	55%	4%	0%	0%	324366	448557	36121	0	0	83.3	810914	18.6	0.0291	1870	0%
GEN-06-A	0%	23%	0%	55%	0%	0	197091	0	481567	0	86.1	873696	20.1	0.0313	195038	22%
GEN-06-B	2%	30%	0%	0%	47%	15389	232242	0	0	361923	88.7	769438	17.7	0.0276	159884	21%
GEN-06-C	0%	24%	0%	0%	50%	0	140521	0	0	290436	89.4	576240	13.2	0.0207	145283	25%
GEN-06-WL	15%	57%	0%	0%	25%	43557	164144	0	0	72899	85.8	290378	6.7	0.0104	9778	3%
GEN-06-DS	25%	75%	0%	0%	0%	18597	55791	0	0	0	83.5	74388	1.7	0.0027	0	0%
GEN-07-A	10%	76%	12%	0%	0%	12323	94252	14995	0	0	84.0	123230	2.8	0.0044	1660	1%
GEN-07-DS	40%	53%	0%	0%	0%	145610	192528	0	0	0	83.1	364025	8.4	0.0131	25887	7%
GEN-08-A	15%	21%	0%	39%	0%	110967	158135	0	288237	0	85.2	739782	17.0	0.0265	182443	25%
GEN-08-WL	20%	46%	0%	34%	0%	55208	127855	0	92978	0	84.6	276041	6.3	0.0099	0	0%
GEN-08-DS	10%	78%	4%	0%	0%	42076	327864	14877	0	0	83.9	420755	9.7	0.0151	35938	9%
GEN-09-A	20%	63%	2%	0%	0%	242809	770449	26958	0	0	83.6	1214044	27.9	0.0435	173828	14%
GEN-10-A	10%	75%	7%	0%	0%	142351	1065075	93006	0	0	83.9	1423509	32.7	0.0511	123077	9%
GEN-11-A	60%	25%	3%	0%	0%	656444	270865	29985	0	0	82.7	1094073	25.1	0.0392	136779	13%
GEN-12	31%	41%	0%	24%	0%	22731268	30339335	0	17256068	0	79.0	73326671	1683.3	2.6302	3000000	4%
GEN-13-A	5%	81%	7%	0%	0%	10915	177247	14974	0	0	84.0	218302	5.0	0.0078	15166	7%
GEN-14-A	5%	88%	0%	0%	0%	33426	591490	0	0	0	83.9	668527	15.3	0.0240	43611	7%

DEVELOPED SHED LAG TIME CALCULATIONS

DOMENICHELLI AND ASSOCIATES, INC.
CIVIL ENGINEERING

2) Lag Time

SUB BASIN	Travel Time																		Travel time	Lag time
	Overland flow					Shallow Concentrated						Channel flow								
	Start Elev	End Elev	Length	Slope	time(min)	Start Elev	End Elev	Length	Slope	vel(fps)	time	Start Elev	End Elev	Length	slope	vel	time		(min)	(min)
GEN-01-A	1238	1222	300	0.053	15.7	1222	1222	0	-	-	-	1222	1182	437	0.0915	10.0	0.7		16	**9.9**
GEN-01-B	1262	1238	300	0.080	13.3	1238	1155	1351	0.061	4.1	5.5	1155		0	-	-	-		19	**11.3**
GEN-01-DS	1230	1219	300	0.037	18.2	1219	1126	742	0.125	5.7	2.2	1126		0	-	-	-		20	**12.2**
GEN-02-A	1262	1230	300	0.107	11.9	1230	1149	1356	0.060	4.0	5.6	1149		0	-	-	-		18	**10.5**
GEN-03-A	1198	1197	50	0.020	5.5	1197	1191	292	0.021	2.2	2.2	1191	1104	1488	0.0585	10.0	2.5		10	**6.1**
GEN-03-WL	1154	1123	300	0.103	12.0	1123	1020	898	0.115	5.4	2.8	1020		0	-	-	-		15	**8.9**
GEN-03-OS	1183.5	1180	100	0.035	7.7	1180	1020	1644	0.097	5.1	5.4	1020		0	-	-	-		13	**7.9**
GEN-03-DS	1105	1094	300	0.037	12.5	1094	1020	540	0.137	5.9	1.5	1020		0	-	-	-		14	**8.4**
GEN-04-A	1150.5	1141.5	100	0.090	3.6	1142	1121	369	0.056	3.9	1.6	1121	1082	1428	0.0273	13.8	1.7		7	**4.2**
GEN-04-B	1092	1077	301	0.050	11.1	1077	1065	910	0.013	1.7	9.0	1065	1032	0	-	-	-		20	**12.1**
GEN-04-C	1102	1080	100	0.220	2.5	1080	1035	1183	0.038	3.2	6.2	1035	945	0	-	-	-		9	**5.3**
GEN-04-DS	1105	1077	300	0.093	12.5	1077	840	633	0.374	9.9	1.1	840		0	-	-	-		14	**8.2**
GEN-04-OS	1105	1090	170	0.088	8.1	1090	1050	386	0.104	5.2	1.2	1050	840	1630	0.1288	10.0	2.7		12	**7.3**
GEN-05-A	1184.5	1182.25	115	0.020	10.8	1182	1165	397	0.043	3.4	1.9	1165	1145	1078	0.0186	11.4	1.6		14	**8.6**
GEN-05-DS	1126	1090	197	0.183	6.9	1090	960	1210	0.107	5.3	3.8	960		0	-	-	-		11	**6.4**
GEN-06-A	1192	1190	100	0.020	6.6	1190	1174	321	0.050	3.7	1.5	1174	1095	1621	0.0487	18.5	1.5		10	**5.7**
GEN-06-B	1215	1213	100	0.020	6.6	1213	1202	610	0.018	2.0	5.0	1202	1143	1105	0.0534	19.4	1.0		13	**7.6**
GEN-06-C	1184	1178	100	0.060	4.3	1178	1175	308	0.010	1.4	3.6	1175	1100	1157	0.0648	21.3	0.9		9	**5.3**
GEN-06-WL	1174	1172	100	0.020	6.6	1172	1087	1066	0.080	4.6	3.8	1087		0	-	-	-		10	**6.3**
GEN-06-DS	1128	1106	300	0.073	9.5	1106	1073	276	0.120	5.5	0.8	1073		0	-	-	-		10	**6.2**
GEN-07-A	1137	1126	39	0.282	1.1	1126	1103	323	0.071	4.4	1.2	1103		0	-	-	-		2	**1.4**
GEN-07-DS	1131	1110	300	0.070	9.7	1110	1040	703	0.100	5.1	2.3	1040		0	-	-	-		12	**7.2**
GEN-08-A	1226	1224	100	0.020	6.6	1224	1209	443	0.034	3.0	2.5	1209	1135	1601	0.0462	18.0	1.5		11	**6.4**
GEN-08-WL	1211	1197	100	0.140	3.0	1197	1110	956	0.091	4.9	3.2	1110		0	-	-	-		6	**3.8**
GEN-08-DS	1211	1187	300	0.080	9.2	1187	1159	242	0.116	5.5	0.7	1159	1078	796	0.1018	10.0	1.3		11	**6.7**
GEN-09-A	1127	1107	300	0.067	9.9	1107	975	1761	0.075	4.5	6.5	975	974	393	0.0025	4.2	1.5		18	**10.8**
GEN-10-A	1078	1052	300	0.087	8.9	1052	985	1117	0.060	4.0	4.6	985	980	844	0.0059	6.4	2.2		16	**9.4**
GEN-11-A	1166	1159	100	0.070	4.0	1159	993	1106	0.150	6.2	3.0	993	990	295	0.0102	8.4	0.6		8	**4.5**
GEN-12	1445	1443	100	0.020	9.6	1443	1295	904	0.164	6.5	2.3	1295	1150	4750	0.0305	5.1	15.6		28	-
												1150	1020	6700	0.0194	6.8	16.5		16	-
												1020	990	3000	0.0100	4.9	10.3		10	**32.6**
GEN-13-A	983.5	982	100	0.020	6.6	982	976	441	0.014	1.7	4.3	976	974	166	0.0120	9.2	0.3		11	**6.7**
GEN-14-A	1034	1033	100	0.020	6.6	1033	984	970	0.051	3.7	4.4	984	980	844	0.0047	5.8	2.4		13	**8.1**

Overland time per equation 3-3 TR 55: n=0.24 or 0.15, p=7.0, Max L=300, Tt=(.007(nL)^.8)/((P)^.5 (s)^.4)

Shallow concentrated flow velocity based on Figure 3-1, TR-55: Length(ft) = 2000 max

Channel flow based on Manning's equation

Lag time = total travel time x 0.6

3) Reaches

Reach	US ELV	DS ELV	LENGTH	SLOPE	N VALUE	xH:1v	BOTTOM WIDTH	CELERITY
GEN-03-DS-REACH	1095	1020	574	0.131	0.06	6.5		5
GEN-04-X-REACH	1070	932	836	0.165	0.06	3		5
GEN-04-Z-REACH	932	840	937	0.098	0.06	3		5
GEN-05-DS-REACH	1094	960	1242	0.108	0.06	4		5
GEN-06-WL-REACH	1143	1085	957	0.061	0.06	6		5
GEN-06-DS-REACH	1085	1073	231	0.052	0.06	6.5		5
GEN-07-A-REACH	1105	1100	400	0.013	0.06	3	3	5
GEN-07-DS-REACH	1100	1040	2137	0.028	0.06	5.5		5
GEN-08-DS-REACH	1122	1078	570	0.077	0.06	3.6		5
GEN-09-REACH	1073	974	2137	0.046	0.06	5		5
GEN-10-REACH	1078	980	2216	0.044	0.06	3.5		5
GEN-11-REACH	997	991	1004	0.006	0.06	15	15	5
GEN-12-REACH	1149	997	3988	0.038	0.06	10	15	5
GEN-13-REACH	980	974	546	0.011	0.06	6	15	5
GEN-14-REACH	991	980	1568	0.007	0.06	12	15	5

HEC-HMS DEVELOPED CONDITIONS

GLOBAL SUMMARY RESULTS

PROPOSED 2-YEAR RESULTS

Element	Drainage Area (SqMi)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
GEN-05-BASIN	0.0306	4.8	Jan2013, 10	1.57
GEN-06-A-BASI	0.052	18.4	Jan2013, 10	1.34
GEN-06-B-BASI	0.0276	2.1	Jan2013, 11	1.5
GEN-12	2.6302	555.6	Jan2013, 10	1.04
GEN-02-A	0.0388	16.7	Jan2013, 10	1.16
GEN-02-POC	0.0388	16.7	Jan2013, 10	1.16
GEN-12-REACH	0.0388	16.5	Jan2013, 10	1.16
GEN-12-POC	2.669	568.5	Jan2013, 10	1.04
GEN-11-REACH	2.669	566.1	Jan2013, 10	1.04
GEN-11-A	0.0392	22.9	Jan2013, 09	1.27
GEN-11-POC	2.7082	570.1	Jan2013, 10	1.05
GEN-14-REACH	2.7082	567.2	Jan2013, 10	1.05
GEN-08-BASIN	0.0265	6.1	Jan2013, 10	1.25
GEN-08-A	0.0265	14.3	Jan2013, 10	1.27
GEN-08-JUNC	0.0364	9.1	Jan2013, 09	1.16
GEN-08-DS-REA	0.0364	9.1	Jan2013, 10	1.16
GEN-08-WL	0.0099	4.4	Jan2013, 09	0.92
GEN-08-DS	0.0151	6.3	Jan2013, 10	1
GEN-08-POC	0.0515	15.4	Jan2013, 10	1.12
GEN-10-REACH	0.0515	15.4	Jan2013, 10	1.12
GEN-10-A	0.0511	24.9	Jan2013, 10	1.27
GEN-14-A	0.024	12.1	Jan2013, 10	1.25
US-POND	2.8348	565.8	Jan2013, 10	1.05
GEN-13-REACH	2.8348	565.4	Jan2013, 10	1.05
GEN-06-A	0.0313	17.7	Jan2013, 09	1.27
GEN-06-C	0.0207	13.8	Jan2013, 09	1.47
GEN-06-B	0.0276	16.3	Jan2013, 10	1.39
GEN-06-WL-REA	0.0276	2.1	Jan2013, 11	1.5
GEN-06-WL	0.0104	4.7	Jan2013, 10	1.03
GEN-06-JUNC	0.09	23.6	Jan2013, 10	1.35
GEN-06-DS-REA	0.09	23.6	Jan2013, 10	1.35
GEN-06-DS	0.0027	1.4	Jan2013, 09	1.16
GEN-06-POC	0.0927	24.7	Jan2013, 10	1.35

PROPOSED 10-YEAR RESULTS

Element	Drainage Area (SqMi)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
GEN-05-BASIN	0.0306	12.6	Jan2013, 10	2.74
GEN-06-A-BASI	0.052	38.3	Jan2013, 10	2.5
GEN-06-B-BASI	0.0276	2.9	Jan2013, 12	2.49
GEN-12	2.6302	1122.7	Jan2013, 10	2.04
GEN-02-A	0.0388	33	Jan2013, 10	2.23
GEN-02-POC	0.0388	33	Jan2013, 10	2.23
GEN-12-REACH	0.0388	32.7	Jan2013, 10	2.23
GEN-12-POC	2.669	1147.4	Jan2013, 10	2.04
GEN-11-REACH	2.669	1142.8	Jan2013, 10	2.04
GEN-11-A	0.0392	43.5	Jan2013, 09	2.35
GEN-11-POC	2.7082	1150.4	Jan2013, 10	2.05
GEN-14-REACH	2.7082	1145.1	Jan2013, 10	2.04
GEN-08-BASIN	0.0265	8.7	Jan2013, 10	2.38
GEN-08-A	0.0265	28.3	Jan2013, 09	2.39
GEN-08-JUNC	0.0364	16.8	Jan2013, 09	2.27
GEN-08-DS-REA	0.0364	16.8	Jan2013, 10	2.27
GEN-08-WL	0.0099	10	Jan2013, 09	1.98
GEN-08-DS	0.0151	13.9	Jan2013, 10	2.06
GEN-08-POC	0.0515	30.7	Jan2013, 10	2.21
GEN-10-REACH	0.0515	30.6	Jan2013, 10	2.21
GEN-10-A	0.0511	47.7	Jan2013, 10	2.36
GEN-14-A	0.024	23.3	Jan2013, 10	2.34
US-POND	2.8348	1158.3	Jan2013, 10	2.05
GEN-13-REACH	2.8348	1157.5	Jan2013, 10	2.05
GEN-06-A	0.0313	34.8	Jan2013, 09	2.4
GEN-06-C	0.0207	25.5	Jan2013, 09	2.66
GEN-06-B	0.0276	30.8	Jan2013, 10	2.57
GEN-06-WL-REA	0.0276	2.9	Jan2013, 12	2.49
GEN-06-WL	0.0104	10.2	Jan2013, 09	2.12
GEN-06-JUNC	0.09	48.4	Jan2013, 10	2.45
GEN-06-DS-REA	0.09	48.4	Jan2013, 10	2.45
GEN-06-DS	0.0027	2.7	Jan2013, 09	2.23
GEN-06-POC	0.0927	50.6	Jan2013, 10	2.44

PROPOSED 100-YEAR RESULTS

Element	Drainage Area (SqMi)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
GEN-05-BASIN	0.0306	23.9	Jan2013, 10	4.11
GEN-06-A-BASI	0.052	57.8	Jan2013, 10	3.85
GEN-06-B-BASI	0.0276	6.2	Jan2013, 11	3.46
GEN-12	2.6302	1837.3	Jan2013, 10	3.27
GEN-02-A	0.0388	52.8	Jan2013, 10	3.52
GEN-02-POC	0.0388	52.8	Jan2013, 10	3.52
GEN-12-REACH	0.0388	52.7	Jan2013, 10	3.52
GEN-12-POC	2.669	1876.5	Jan2013, 10	3.27
GEN-11-REACH	2.669	1869	Jan2013, 10	3.27
GEN-11-A	0.0392	68.5	Jan2013, 09	3.65
GEN-11-POC	2.7082	1881	Jan2013, 10	3.28
GEN-14-REACH	2.7082	1873.1	Jan2013, 10	3.27
GEN-08-BASIN	0.0265	14.9	Jan2013, 10	3.71
GEN-08-A	0.0265	44.8	Jan2013, 09	3.72
GEN-08-JUNC	0.0364	25.3	Jan2013, 09	3.59
GEN-08-DS-REA	0.0364	25.3	Jan2013, 09	3.59
GEN-08-WL	0.0099	16.8	Jan2013, 09	3.26
GEN-08-DS	0.0151	23.2	Jan2013, 10	3.35
GEN-08-POC	0.0515	48.4	Jan2013, 09	3.52
GEN-10-REACH	0.0515	48.3	Jan2013, 10	3.52
GEN-10-A	0.0511	75.1	Jan2013, 10	3.67
GEN-14-A	0.024	36.8	Jan2013, 10	3.65
US-POND	2.8348	1898.1	Jan2013, 10	3.29
GEN-13-REACH	2.8348	1897.6	Jan2013, 10	3.29
GEN-06-A	0.0313	54.9	Jan2013, 09	3.75
GEN-06-C	0.0207	38.8	Jan2013, 09	4.04
GEN-06-B	0.0276	47.4	Jan2013, 10	3.94
GEN-06-WL-REA	0.0276	6.2	Jan2013, 11	3.45
GEN-06-WL	0.0104	16.8	Jan2013, 09	3.43
GEN-06-JUNC	0.09	72.6	Jan2013, 10	3.68
GEN-06-DS-REA	0.09	72.4	Jan2013, 10	3.68
GEN-06-DS	0.0027	4.3	Jan2013, 09	3.52
GEN-06-POC	0.0927	75.6	Jan2013, 10	3.68

HEC-HMS DEVELOPED CONDITIONS

GLOBAL SUMMARY RESULTS

PROPOSED 2-YEAR RESULTS

Element	Drainage Area (SqMi)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
GEN-09-REACH	0.0927	24.7	Jan2013, 10	1.35
GEN-09-A	0.0435	20.8	Jan2013, 10	1.31
GEN-13-A	0.0078	4.2	Jan2013, 10	1.25
DS-POND	2.9788	509.9	Jan2013, 10	1.07
AR	2.9788	509.7	Jan2013, 10	1.07
GSC-POC	2.9788	509.7	Jan2013, 10	1.07
GEN-05-A	0.0306	19.1	Jan2013, 10	1.58
GEN-05-DS-REA	0.0306	4.8	Jan2013, 10	1.57
GEN-05-DS	0.0291	14.5	Jan2013, 10	1.15
GEN-04-BASIN	0.0285	3.2	Jan2013, 10	1.21
GEN-04-A	0.0285	16.4	Jan2013, 09	1.22
GEN-04-DS-REA	0.0285	3.2	Jan2013, 10	1.21
GEN-04-B	0.0129	5.4	Jan2013, 10	1.2
GEN-04-DITCH	0.0414	8.4	Jan2013, 10	1.21
GEN-04-DS-REA	0.0414	8.4	Jan2013, 10	1.21
GEN-04-C	0.0203	10.5	Jan2013, 09	1.14
GEN-04-Y	0.0164	7.6	Jan2013, 10	1.12
GEN-04-DS	0.0115	4	Jan2013, 10	0.92
GEN-04-DS-POC	0.0896	27.7	Jan2013, 10	1.14
GEN-05-POC	0.0597	17.5	Jan2013, 10	1.37
GEN-07-DS	0.0131	5	Jan2013, 10	0.94
GEN-07-A	0.0044	2.7	Jan2013, 09	1.19
GEN-07-A-REAC	0.0044	2.7	Jan2013, 09	1.19
GEN-07-JUNC	0.0044	2.7	Jan2013, 09	1.19
GEN-07-DS-REA	0.0044	2.6	Jan2013, 10	1.19
GEN-03-BASIN	0.0232	6.3	Jan2013, 10	1.38
GEN-03-A	0.0232	14.4	Jan2013, 09	1.41
GEN-03-DS-REA	0.0232	6.3	Jan2013, 10	1.38
GEN-03-DS	0.0066	3.1	Jan2013, 10	1.16
GEN-03-OS	0.0046	2.2	Jan2013, 10	1.17
GEN-03-WL	0.002	0.7	Jan2013, 10	0.89
GEN-01-B	0.0253	11.3	Jan2013, 10	1.24
GEN-01-DS	0.0182	7.9	Jan2013, 10	1.25
GEN-01-BASIN	0.0169	7.4	Jan2013, 00	1.52
GEN-01-A	0.0169	8	Jan2013, 10	1.25
GEN-01-POC	0.0604	23.7	Jan2013, 10	1.32
GEN-03-POC	0.0364	11.5	Jan2013, 10	1.29
GEN-07-POC	0.0175	7.3	Jan2013, 10	1

PROPOSED 10-YEAR RESULTS

Element	Drainage Area (SqMi)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
GEN-09-REACH	0.0927	50.6	Jan2013, 10	2.44
GEN-09-A	0.0435	39.1	Jan2013, 10	2.41
GEN-13-A	0.0078	8	Jan2013, 10	2.34
DS-POND	2.9788	1185.3	Jan2013, 10	2.07
AR	2.9788	1185.2	Jan2013, 10	2.07
GSC-POC	2.9788	1185.2	Jan2013, 10	2.07
GEN-05-A	0.0306	33.7	Jan2013, 10	2.75
GEN-05-DS-REA	0.0306	12.6	Jan2013, 10	2.74
GEN-05-DS	0.0291	28.7	Jan2013, 09	2.22
GEN-04-BASIN	0.0285	8.6	Jan2013, 10	2.34
GEN-04-A	0.0285	32.8	Jan2013, 09	2.34
GEN-04-DS-REA	0.0285	8.6	Jan2013, 10	2.34
GEN-04-B	0.0129	10.6	Jan2013, 10	2.28
GEN-04-DITCH	0.0414	18.1	Jan2013, 10	2.32
GEN-04-DS-REA	0.0414	18.4	Jan2013, 10	2.32
GEN-04-C	0.0203	20.8	Jan2013, 09	2.21
GEN-04-Y	0.0164	15.8	Jan2013, 10	2.21
GEN-04-DS	0.0115	9.3	Jan2013, 10	1.94
GEN-04-DS-POC	0.0896	56.2	Jan2013, 10	2.23
GEN-05-POC	0.0597	33.1	Jan2013, 10	2.49
GEN-07-DS	0.0131	11.3	Jan2013, 10	1.97
GEN-07-A	0.0044	5.3	Jan2013, 09	2.27
GEN-07-A-REAC	0.0044	5.3	Jan2013, 09	2.27
GEN-07-JUNC	0.0044	5.3	Jan2013, 09	2.27
GEN-07-DS-REA	0.0044	5.2	Jan2013, 10	2.27
GEN-03-BASIN	0.0232	9	Jan2013, 10	2.52
GEN-03-A	0.0232	26.5	Jan2013, 09	2.55
GEN-03-DS-REA	0.0232	9	Jan2013, 10	2.52
GEN-03-DS	0.0066	6	Jan2013, 10	2.22
GEN-03-OS	0.0046	4.3	Jan2013, 10	2.24
GEN-03-WL	0.002	1.6	Jan2013, 10	1.93
GEN-01-B	0.0253	21.8	Jan2013, 10	2.33
GEN-01-DS	0.0182	15.2	Jan2013, 10	2.34
GEN-01-BASIN	0.0169	7.5	Jan2013, 10	2.62
GEN-01-A	0.0169	15.5	Jan2013, 10	2.35
GEN-01-POC	0.0604	43.5	Jan2013, 10	2.41
GEN-03-POC	0.0364	19.8	Jan2013, 10	2.4
GEN-07-POC	0.0175	16	Jan2013, 10	2.05

PROPOSED 100-YEAR RESULTS

Element	Drainage Area (SqMi)	Peak Discharge (CFS)	Time of Peak	Volume (IN)
GEN-09-REACH	0.0927	75.4	Jan2013, 10	3.67
GEN-09-A	0.0435	61.2	Jan2013, 10	3.72
GEN-13-A	0.0078	12.6	Jan2013, 10	3.65
DS-POND	2.9788	1950.9	Jan2013, 10	3.3
AR	2.9788	1950.6	Jan2013, 10	3.3
GSC-POC	2.9788	1950.6	Jan2013, 10	3.3
GEN-05-A	0.0306	50.9	Jan2013, 10	4.11
GEN-05-DS-REA	0.0306	23.9	Jan2013, 10	4.11
GEN-05-DS	0.0291	46	Jan2013, 09	3.5
GEN-04-BASIN	0.0285	16.3	Jan2013, 10	3.67
GEN-04-A	0.0285	52.2	Jan2013, 09	3.68
GEN-04-DS-REA	0.0285	16.3	Jan2013, 10	3.67
GEN-04-B	0.0129	16.9	Jan2013, 10	3.59
GEN-04-DITCH	0.0414	32.7	Jan2013, 10	3.64
GEN-04-DS-REA	0.0414	32.7	Jan2013, 10	3.64
GEN-04-C	0.0203	33.3	Jan2013, 09	3.49
GEN-04-Y	0.0164	25.6	Jan2013, 10	3.52
GEN-04-DS	0.0115	15.8	Jan2013, 10	3.21
GEN-04-DS-POC	0.0896	97.7	Jan2013, 10	3.53
GEN-05-POC	0.0597	55.3	Jan2013, 10	3.81
GEN-07-DS	0.0131	19.1	Jan2013, 10	3.25
GEN-07-A	0.0044	8.5	Jan2013, 09	3.57
GEN-07-A-REAC	0.0044	8.4	Jan2013, 09	3.57
GEN-07-JUNC	0.0044	8.4	Jan2013, 09	3.57
GEN-07-DS-REA	0.0044	8.3	Jan2013, 10	3.57
GEN-03-BASIN	0.0232	20.7	Jan2013, 10	3.87
GEN-03-A	0.0232	40.8	Jan2013, 09	3.9
GEN-03-DS-REA	0.0232	20.7	Jan2013, 10	3.87
GEN-03-DS	0.0066	9.7	Jan2013, 10	3.51
GEN-03-OS	0.0046	6.9	Jan2013, 10	3.53
GEN-03-WL	0.002	2.7	Jan2013, 10	3.21
GEN-01-B	0.0253	34.4	Jan2013, 10	3.64
GEN-01-DS	0.0182	24	Jan2013, 10	3.65
GEN-01-BASIN	0.0169	12.1	Jan2013, 10	3.93
GEN-01-A	0.0169	24.4	Jan2013, 10	3.66
GEN-01-POC	0.0604	66.8	Jan2013, 10	3.72
GEN-03-POC	0.0364	36.8	Jan2013, 10	3.72
GEN-07-POC	0.0175	26.7	Jan2013, 10	3.33

SUMMARY OF COMPLIANCE POINTS

DOMENICHELLI AND ASSOCIATES, INC.
CIVIL ENGINEERING

1) Existing Flows (CFS)

	GEN-01-POC	GEN-02-POC	GEN-03-POC	GEN-04-DS-POC	GEN-04-US POC	GEN-05-POC	GEN-06-POC	GEN-07-POC	GEN-08-POC	GEN-11-POC	GEN-12-POC	US-POND	GSP-POC
2YR	23.8	17.9	16.9	27.5	6.8	18.4	30.8	9.0	18.5	570.9	569.4	571.4	543.4
10YR	46.2	34.8	33.4	63.3	13.5	36.2	61.0	17.5	36.5	1151.8	1148.7	1152.4	1243.6
100YR	73.4	55.3	53.3	107.4	21.6	58.0	97.7	27.7	58.3	1883.2	1878.2	1883.7	2040.7

2) Proposed Flows (CFS)

	GEN-01-POC	GEN-02-POC	GEN-03-POC	GEN-04-DS-POC	GEN-04-Basin	GEN-05-POC	GEN-06-POC	GEN-07-POC	GEN-08-POC	GEN-11-POC	GEN-12-POC	US-POND	GSP-POC
2YR	23.7	16.7	11.5	27.7	3.2	17.5	24.7	7.3	15.4	570.1	568.5	570.3	513.7
10YR	43.5	33.0	19.8	56.2	8.6	33.1	50.6	16.0	30.7	1150.4	1147.4	1150.8	1171.8
100YR	66.8	52.8	36.8	97.7	16.3	55.3	75.6	26.7	48.4	1881.0	1876.5	1881.4	1950.7

3) Proposed Flow as a Perctange of Existing Flows

	GEN-01-POC	GEN-02-POC	GEN-03-POC	GEN-04-POC	GEN-04-Basin	GEN-05-POC	GEN-06-POC	GEN-07-POC	GEN-08-POC	GEN-11-POC	GEN-12-POC	US-POND	DS-POND
2YR	99.6%	93.3%	68.0%	100.7%	47.1%	95.1%	80.2%	81.1%	83.2%	99.9%	99.8%	99.8%	94.5%
10YR	94.2%	94.8%	59.3%	88.8%	63.7%	91.4%	83.0%	91.4%	84.1%	99.9%	99.9%	99.9%	94.2%
100YR	91.0%	95.5%	69.0%	91.0%	75.5%	95.3%	77.4%	96.4%	83.0%	99.9%	99.9%	99.9%	95.6%

4) Proposed Basin Elevation Data

	PEAK ELV	SPILLWAY	TOP	Freeboard
BASIN 1	1182.1	1183.0	1185.0	0.9
BASIN 3	1090.8	1093.0	1095.0	2.2
BASIN 4	1087.2	1088.3	1090.3	1.1
BASIN 5	1118.7	1118.8	1120.8	0.1
BASIN 6A	1102.4	1103.0	1107.0	0.6
BASIN 6B	1149.2	1150.0	1152.0	0.8
BASIN 8	1133.6	1135.0	1137.0	1.4

NAVD 88 Feet

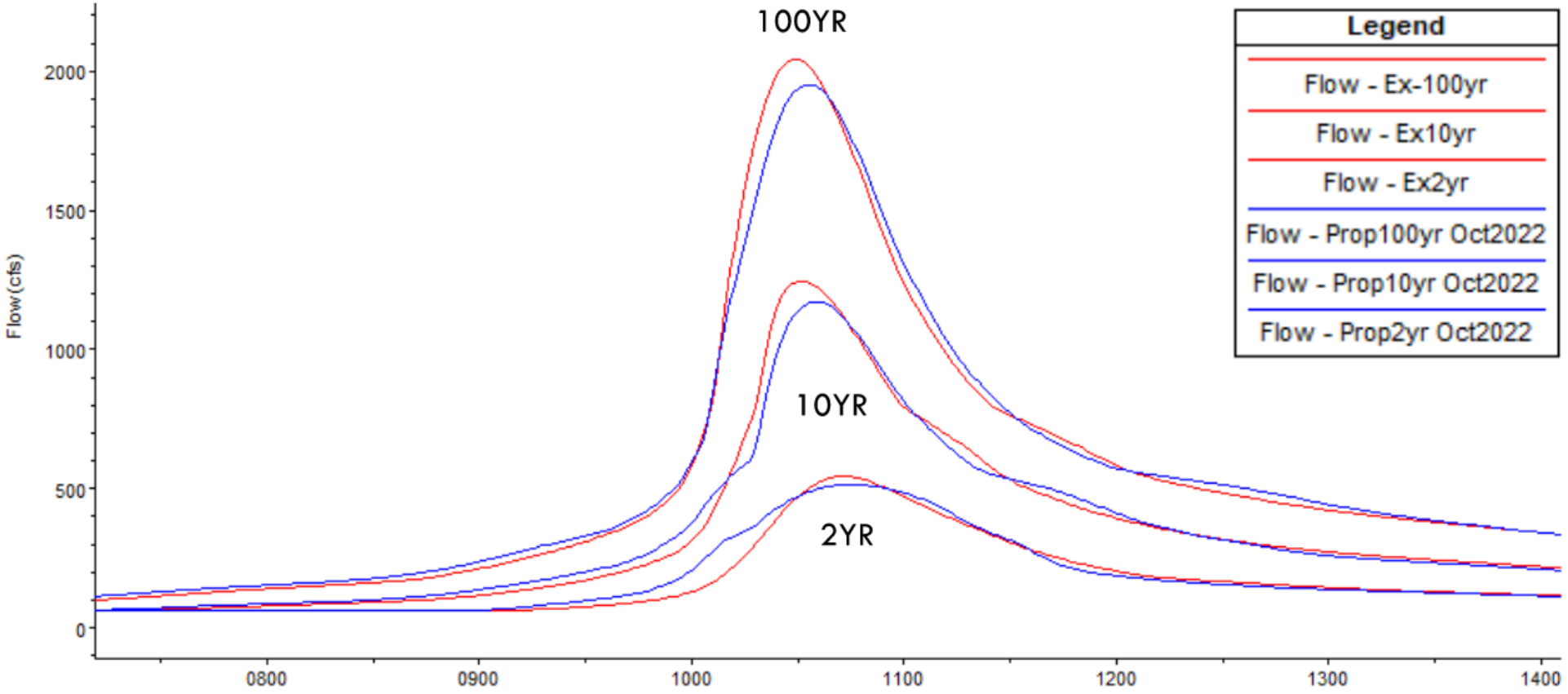
Appendix C: Hydraulics Data and Results

Manning's n for Channels (Chow, 1959).

Type of Channel and Description	Minimum	Normal	Maximum
Natural streams - minor streams (top width at floodstage < 100 ft)			
1. Main Channels			
a. clean, straight, full stage, no rifts or deep pools	0.025	0.030	0.033
b. same as above, but more stones and weeds	0.030	0.035	0.040
c. clean, winding, some pools and shoals	0.033	0.040	0.045
d. same as above, but some weeds and stones	0.035	0.045	0.050
e. same as above, lower stages, more ineffective slopes and sections	0.040	0.048	0.055
f. same as "d" with more stones	0.045	0.050	0.060
g. sluggish reaches, weedy, deep pools	0.050	0.070	0.080
h. very weedy reaches, deep pools, or floodways with heavy stand of timber and underbrush	0.075	0.100	0.150
2. Mountain streams, no vegetation in channel, banks usually steep, trees and brush along banks submerged at high stages			
a. bottom: gravels, cobbles, and few boulders	0.030	0.040	0.050
b. bottom: cobbles with large boulders	0.040	0.050	0.070
3. Floodplains			
a. Pasture, no brush			
1.short grass	0.025	0.030	0.035
2. high grass	0.030	0.035	0.050
b. Cultivated areas			
1. no crop	0.020	0.030	0.040
2. mature row crops	0.025	0.035	0.045
3. mature field crops	0.030	0.040	0.050
c. Brush			
1. scattered brush, heavy weeds	0.035	0.050	0.070
2. light brush and trees, in winter	0.035	0.050	0.060
3. light brush and trees, in summer	0.040	0.060	0.080
4. medium to dense brush, in winter	0.045	0.070	0.110
5. medium to dense brush, in summer	0.070	0.100	0.160
d. Trees			
1. dense willows, summer, straight	0.110	0.150	0.200
2. cleared land with tree stumps, no sprouts	0.030	0.040	0.050
3. same as above, but with heavy growth of sprouts	0.050	0.060	0.080
4. heavy stand of timber, a few down trees, little undergrowth, flood stage below branches	0.080	0.100	0.120
5. same as 4. with flood stage reaching branches	0.100	0.120	0.160

DOWNSTREAM HYDROGRAPHS

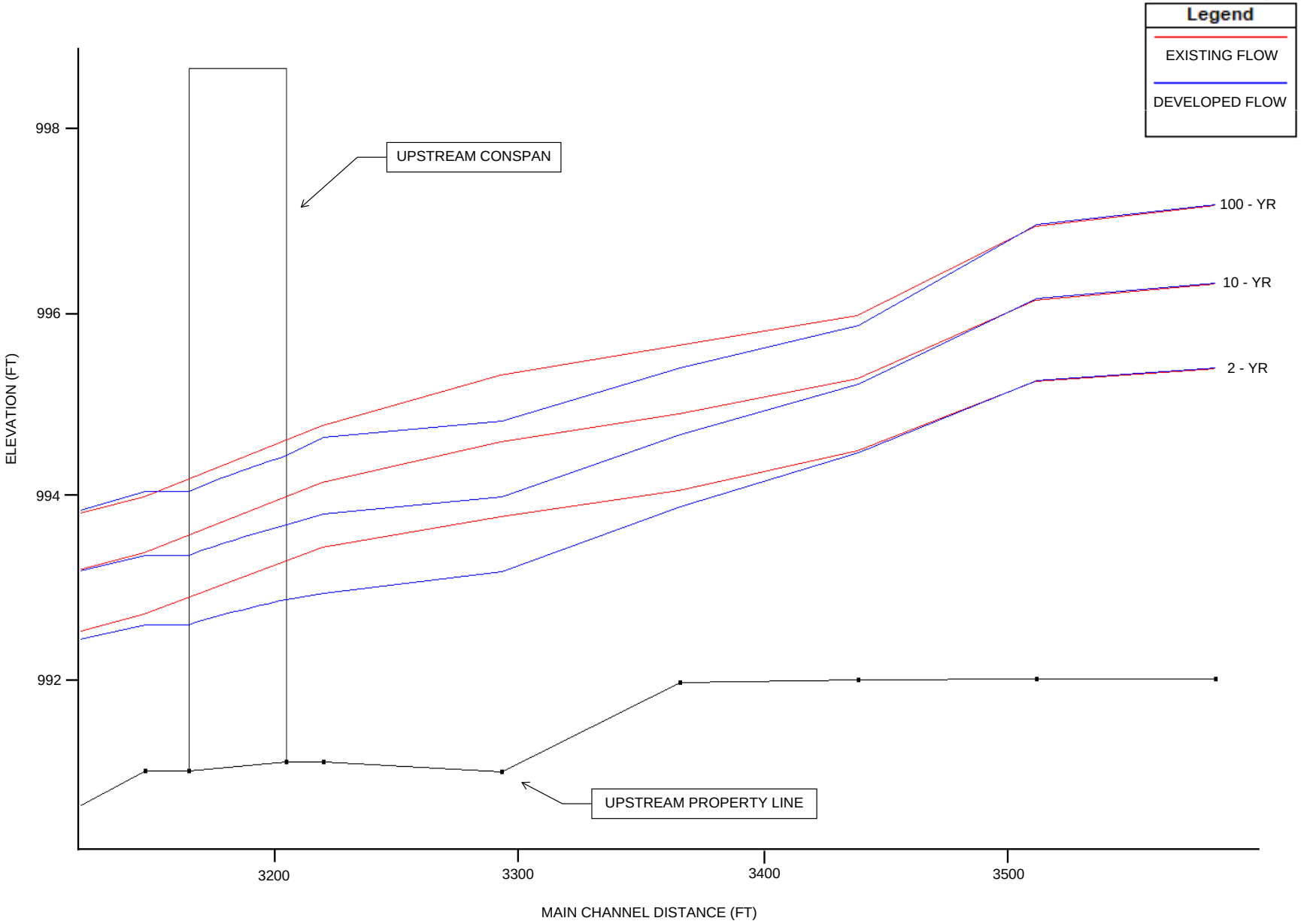
WEST GREEN SPRINGS ROAD



UPSTREAM PROFILE

GREEN SPRINGS CREEK

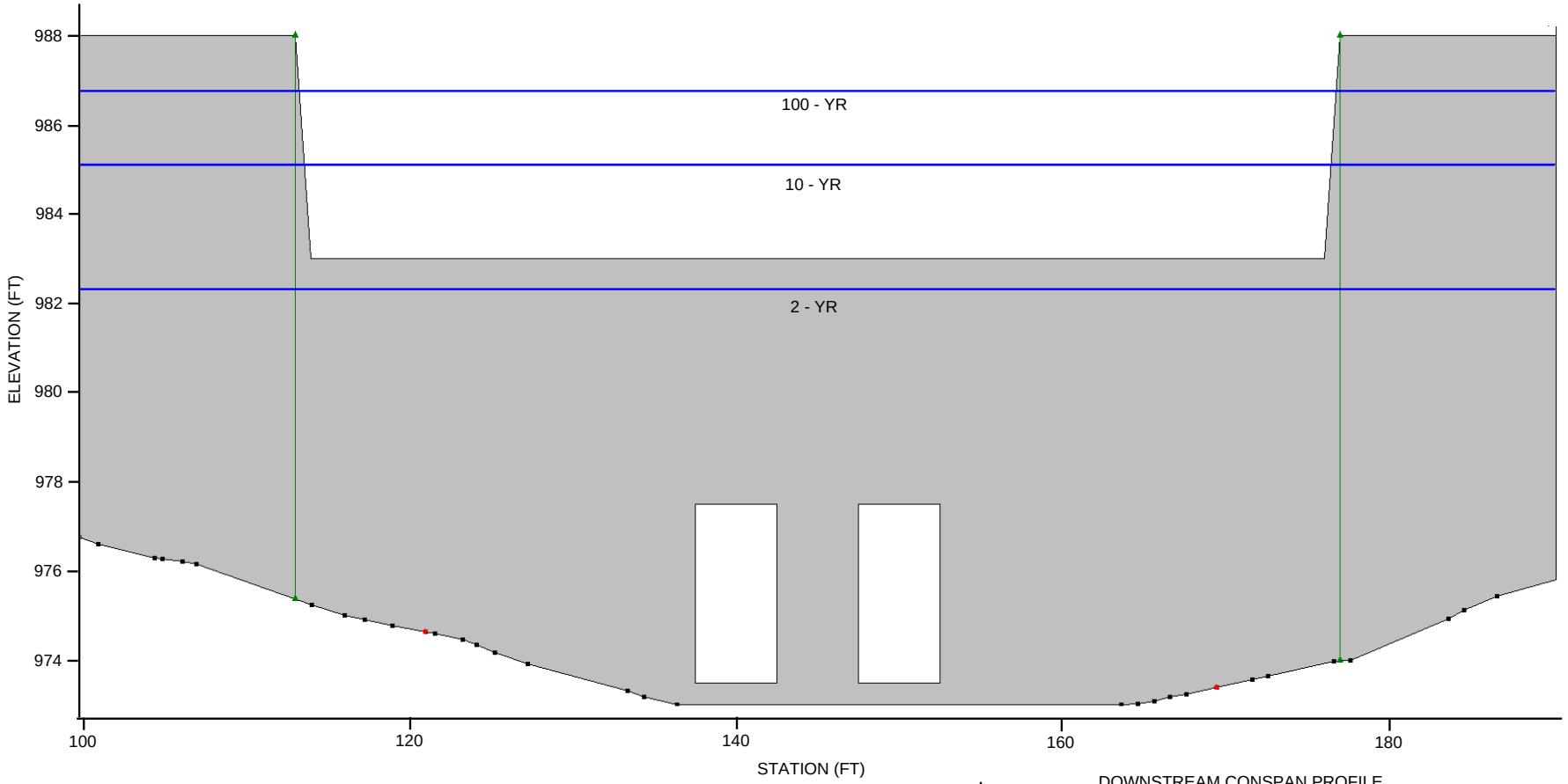
DOMENICHELLI AND ASSOCIATES, INC.
CIVIL ENGINEERING

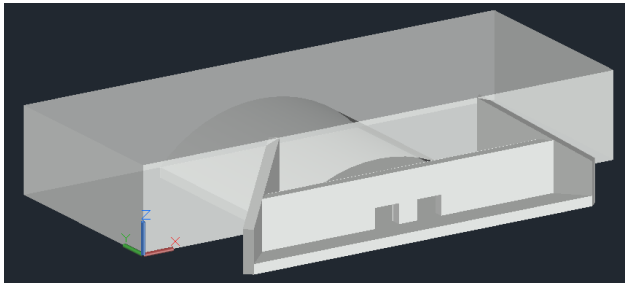


CONTROL STRUCTURE

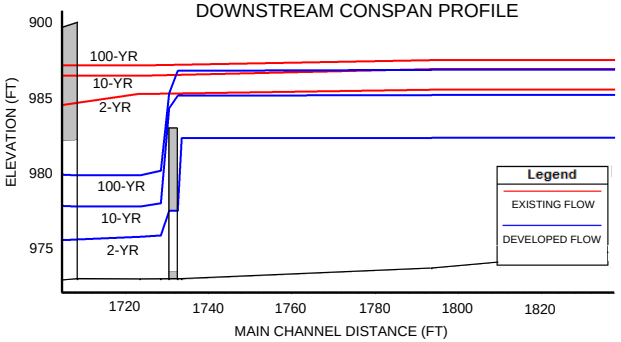
DOWNSTREAM CONSPAN

DOMENICHELLI AND ASSOCIATES, INC.
CIVIL ENGINEERING





ROUGH SKETCH RENDERING OF CONTROL STRUCTURE



HEC-RAS River: GreenSprings CK Reach: US Profile: Max WS

Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
US	3711	Max WS	Ex-100yr	1877.57	992.00	997.17		997.65	0.005524	7.10	409.58	173.65	0.56
US	3711	Max WS	Ex10yr	1148.50	992.00	996.31		996.72	0.005391	6.19	275.67	139.99	0.54
US	3711	Max WS	Ex2yr	569.38	992.00	995.39		995.66	0.004393	4.72	164.68	99.95	0.46
US	3711	Max WS	Prop100yr Oct2022	1875.70	992.00	997.19		997.67	0.005366	7.02	414.10	174.62	0.55
US	3711	Max WS	Prop10yr Oct2022	1146.77	992.00	996.34		996.73	0.005169	6.09	280.18	141.20	0.53
US	3711	Max WS	Prop2yr Oct2022	568.40	992.00	995.39		995.66	0.004363	4.70	164.91	100.04	0.46
US	3620.5	Max WS	Ex-100yr	1877.75	992.00	996.95		997.28	0.003723	5.59	462.36	166.37	0.46
US	3620.5	Max WS	Ex10yr	1148.45	992.00	996.13		996.36	0.003183	4.54	336.91	141.80	0.41
US	3620.5	Max WS	Ex2yr	569.37	992.00	995.25		995.38	0.002458	3.35	220.92	121.90	0.34
US	3620.5	Max WS	Prop100yr Oct2022	1875.57	992.00	996.97		997.29	0.003641	5.54	466.08	167.25	0.45
US	3620.5	Max WS	Prop10yr Oct2022	1146.70	992.00	996.16		996.39	0.003071	4.48	341.28	142.85	0.40
US	3620.5	Max WS	Prop2yr Oct2022	568.23	992.00	995.25		995.38	0.002452	3.34	220.77	121.88	0.34
US	3531	Max WS	Ex-100yr	1880.93	991.99	995.97		996.78	0.013027	9.29	299.31	140.27	0.83
US	3531	Max WS	Ex10yr	1150.37	991.99	995.28		995.91	0.012344	7.94	210.69	121.28	0.78
US	3531	Max WS	Ex2yr	570.43	991.99	994.50		994.97	0.011959	6.48	123.96	98.03	0.74
US	3531	Max WS	Prop100yr Oct2022	1878.58	991.99	995.85		996.75	0.014669	9.67	284.03	134.51	0.88
US	3531	Max WS	Prop10yr Oct2022	1148.77	991.99	995.22		995.90	0.013489	8.20	203.76	120.18	0.82
US	3531	Max WS	Prop2yr Oct2022	569.33	991.99	994.47		994.96	0.012531	6.59	121.45	97.03	0.75
US	3441.5	Max WS	Ex-100yr	1884.09	991.97	995.64		995.99	0.005861	5.99	432.68	180.91	0.55
US	3441.5	Max WS	Ex10yr	1152.46	991.97	994.90		995.17	0.006136	5.26	303.16	164.79	0.54
US	3441.5	Max WS	Ex2yr	571.45	991.97	994.06		994.25	0.006331	4.25	178.42	130.17	0.52
US	3441.5	Max WS	Prop100yr Oct2022	1881.71	991.97	995.40		995.83	0.007927	6.65	389.85	176.33	0.64
US	3441.5	Max WS	Prop10yr Oct2022	1150.79	991.97	994.67		995.02	0.008617	5.91	267.13	155.84	0.64
US	3441.5	Max WS	Prop2yr Oct2022	570.40	991.97	993.88		994.13	0.009117	4.81	156.28	123.83	0.62
US	3352	Max WS	Ex-100yr	1887.26	990.99	995.32		995.62	0.004220	5.64	470.24	175.99	0.48
US	3352	Max WS	Ex10yr	1154.52	990.99	994.59		994.81	0.003780	4.71	346.29	162.00	0.44
US	3352	Max WS	Ex2yr	572.50	990.99	993.78		993.91	0.003038	3.54	223.12	135.14	0.38
US	3352	Max WS	Prop100yr Oct2022	1884.79	990.99	994.82		995.28	0.007491	6.91	384.64	167.10	0.63
US	3352	Max WS	Prop10yr Oct2022	1152.85	990.99	993.99		994.40	0.008660	6.30	253.43	140.95	0.65
US	3352	Max WS	Prop2yr Oct2022	571.47	990.99	993.17		993.49	0.009716	5.37	146.28	120.05	0.65
US	3262.5	Max WS	Ex-100yr	1890.47	990.99	994.77		995.22	0.007413	6.81	381.70	158.75	0.62
US	3262.5	Max WS	Ex10yr	1156.60	990.99	994.15		994.46	0.006309	5.57	287.60	148.88	0.56
US	3262.5	Max WS	Ex2yr	573.53	990.99	993.44		993.63	0.005300	4.29	186.24	134.39	0.49
US	3262.5	Max WS	Prop100yr Oct2022	1887.98	991.10	994.65		994.88	0.002515	3.85	491.00	176.94	0.36
US	3262.5	Max WS	Prop10yr Oct2022	1154.89	991.10	993.80		993.95	0.002338	3.09	373.69	167.96	0.33
US	3262.5	Max WS	Prop2yr Oct2022	572.53	991.10	992.95		993.02	0.002046	2.24	255.30	158.46	0.29
US	3173	Max WS	Ex-100yr	1890.35	990.94	993.99		994.59	0.010454	6.95	310.18	148.02	0.71
US	3173	Max WS	Ex10yr	1156.55	990.94	993.39		993.83	0.011046	6.13	222.32	142.38	0.70
US	3173	Max WS	Ex2yr	573.55	990.94	992.72		993.07	0.014073	5.54	129.33	134.68	0.75
US	3173	Max WS	Prop100yr Oct2022	1887.98	991.00	994.06		994.36	0.004147	4.46	423.73	169.98	0.45
US	3173	Max WS	Prop10yr Oct2022	1154.91	991.00	993.36		993.55	0.003701	3.54	326.46	160.24	0.41
US	3173	Max WS	Prop2yr Oct2022	572.52	991.00	992.61		992.71	0.003241	2.57	222.96	149.89	0.36
US	3083.5	Max WS	Ex-100yr	1891.04	989.96	993.49		993.96	0.007132	6.15	347.80	156.64	0.60
US	3083.5	Max WS	Ex10yr	1156.99	989.96	992.86		993.19	0.006877	5.25	254.13	138.42	0.57
US	3083.5	Max WS	Ex2yr	573.72	989.96	992.18		992.39	0.006915	4.32	162.14	131.80	0.54
US	3083.5	Max WS	Prop100yr Oct2022	1888.30	989.96	993.54		993.98	0.006710	6.02	354.70	157.88	0.58
US	3083.5	Max WS	Prop10yr Oct2022	1155.11	989.96	992.86		993.19	0.006926	5.26	253.28	138.36	0.57
US	3083.5	Max WS	Prop2yr Oct2022	572.59	989.96	992.17		992.38	0.007198	4.39	159.88	131.64	0.55
US	2994	Max WS	Ex-100yr	1891.72	988.99	992.90		993.42	0.008092	7.05	340.19	165.45	0.65
US	2994	Max WS	Ex10yr	1157.33	988.99	992.41		992.74	0.006527	5.75	260.73	155.67	0.57
US	2994	Max WS	Ex2yr	573.93	988.99	991.77		991.99	0.005620	4.60	168.32	132.82	0.51
US	2994	Max WS	Prop100yr Oct2022	1888.75	988.99	992.95		993.45	0.007552	6.87	343.42	159.92	0.63
US	2994	Max WS	Prop10yr Oct2022	1155.33	988.99	992.33		992.70	0.007478	6.05	246.29	149.97	0.60
US	2994	Max WS	Prop2yr Oct2022	572.67	988.99	991.74		991.96	0.006071	4.74	163.69	132.29	0.53
US	2904.5	Max WS	Ex-100yr	1892.55	988.78	991.92		992.60	0.014559	8.34	293.45	170.79	0.84
US	2904.5	Max WS	Ex10yr	1157.97	988.78	991.38	991.38	991.94	0.016760	7.85	203.42	162.26	0.88
US	2904.5	Max WS	Ex2yr	574.13	988.78	990.77		991.19	0.016979	6.56	117.15	119.29	0.84
US	2904.5	Max WS	Prop100yr Oct2022	1889.11	988.78	991.89		992.62	0.015343	8.52	282.73	161.77	0.87
US	2904.5	Max WS	Prop10yr Oct2022	1155.59	988.78	991.31	991.35	991.95	0.019852	8.39	189.62	155.52	0.95
US	2904.5	Max WS	Prop2yr Oct2022	572.77	988.78	990.72	990.74	991.19	0.019514	6.92	111.34	117.22	0.90
US	2815	Max WS	Ex-100yr	1893.22	986.99	991.36		991.79	0.007465	7.11	370.53	186.52	0.62
US	2815	Max WS	Ex10yr	1158.37	986.99	990.66		991.03	0.007795	6.40	249.86	156.81	0.62
US	2815	Max WS	Ex2yr	574.34	986.99	989.95		990.25	0.009166	5.92	144.66	137.48	0.64
US	2815	Max WS	Prop100yr Oct2022	1889.37	986.99	991.38		991.81	0.007191	6.99	366.88	176.99	0.61
US	2815	Max WS	Prop10yr Oct2022	1155.82	986.99	990.74		991.07	0.006702	6.02	259.71	153.26	0.57
US	2815	Max WS	Prop2yr Oct2022	572.85	986.99	989.97		990.25	0.008649	5.78	147.44	138.29	0.63
US	2725.5	Max WS	Ex-100yr	1893.90	986.94	990.72		991.25	0.008374	7.14	336.94	160.55	0.66
US	2725.5	Max WS	Ex10yr	1158.77	986.94	989.95		990.42	0.010000	6.66	217.49	130.54	0.69
US	2725.5	Max WS	Ex2yr	574.50	986.94	989.20		989.57	0.011999	5.97	126.00	114.49	0.72
US	2725.5	Max WS	Prop100yr Oct2022	1889.60	986.94	990.83		991.32	0.007059	6.69	346.99	152.32	0.61
US	2725.5	Max WS	Prop10yr Oct2022	1156.05	986.94	990.04		990.50	0.009586	6.65	227.64	147.81	0.68
US	2725.5	Max WS	Prop2yr Oct2022	572.94	986.94	989.22		989.57	0.011577	5.89	127.34	114.72	0.71

HEC-RAS River: GreenSprings CK Reach: US Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
US	2636	Max WS	Ex-100yr	1894.47	985.95	989.71		990.52	0.012307	8.52	269.06	119.41	0.79
US	2636	Max WS	Ex10yr	1159.18	985.95	989.03		989.65	0.012955	7.59	190.10	110.26	0.79
US	2636	Max WS	Ex2yr	574.68	985.95	988.27		988.74	0.014500	6.56	112.09	94.82	0.79
US	2636	Max WS	Prop100yr Oct2022	1889.98	985.95	989.69		990.60	0.012857	8.68	251.13	102.19	0.81
US	2636	Max WS	Prop10yr Oct2022	1156.21	985.95	989.00		989.66	0.012985	7.56	182.31	97.92	0.78
US	2636	Max WS	Prop2yr Oct2022	573.10	985.95	988.25		988.73	0.014967	6.63	110.10	93.07	0.80
US	2546.5	Max WS	Ex-100yr	1895.21	984.95	989.12		989.78	0.008423	7.54	305.04	126.10	0.67
US	2546.5	Max WS	Ex10yr	1159.55	984.95	988.43		988.91	0.008085	6.49	220.79	116.47	0.64
US	2546.5	Max WS	Ex2yr	574.91	984.95	987.72		988.02	0.006880	5.07	142.19	102.92	0.56
US	2546.5	Max WS	Prop100yr Oct2022	1890.10	984.95	989.17		989.83	0.008078	7.43	297.50	110.85	0.66
US	2546.5	Max WS	Prop10yr Oct2022	1156.41	984.95	988.48		988.94	0.007412	6.27	222.25	107.51	0.61
US	2546.5	Max WS	Prop2yr Oct2022	573.22	984.95	987.72		988.02	0.006850	5.06	142.12	102.91	0.56
US	2457	Max WS	Ex-100yr	1895.89	984.88	988.25		989.01	0.012477	8.20	275.39	127.57	0.79
US	2457	Max WS	Ex10yr	1159.79	984.88	987.58		988.16	0.012763	7.13	194.50	114.03	0.77
US	2457	Max WS	Ex2yr	575.12	984.88	986.78		987.24	0.016474	6.39	110.04	96.28	0.83
US	2457	Max WS	Prop100yr Oct2022	1889.76	984.88	988.04		988.98	0.016093	8.92	245.65	115.36	0.89
US	2457	Max WS	Prop10yr Oct2022	1156.69	984.88	987.42		988.12	0.016465	7.78	176.61	108.38	0.87
US	2457	Max WS	Prop2yr Oct2022	573.35	984.88	986.78		987.24	0.016366	6.36	110.06	96.29	0.83
US	2387	Max WS	Ex-100yr	1896.60	983.86	988.02		988.39	0.004679	5.79	391.84	148.62	0.50
US	2387	Max WS	Ex10yr	1159.78	983.86	987.29		987.55	0.004334	4.89	287.19	136.03	0.47
US	2387	Max WS	Ex2yr	572.55	983.86	986.18		986.44	0.007411	4.91	147.63	116.94	0.57
US	2387	Max WS	Prop100yr Oct2022	1885.66	983.86	987.70		988.19	0.006565	6.50	339.67	134.12	0.59
US	2387	Max WS	Prop10yr Oct2022	1156.92	983.86	986.91		987.30	0.007438	5.92	236.40	125.86	0.60
US	2387	Max WS	Prop2yr Oct2022	573.39	983.86	986.20		986.45	0.007141	4.84	149.68	117.23	0.56
US	2317	Max WS	Ex-100yr	1942.91	982.95	987.73		988.08	0.003791	5.59	419.42	143.54	0.46
US	2317	Max WS	Ex10yr	1186.82	982.95	987.07		987.28	0.002930	4.42	327.01	133.42	0.39
US	2317	Max WS	Ex2yr	539.41	982.95	985.78		985.98	0.004668	4.29	165.53	119.03	0.46
US	2317	Max WS	Prop100yr Oct2022	1904.13	982.95	987.25		987.72	0.006118	6.59	351.28	136.27	0.57
US	2317	Max WS	Prop10yr Oct2022	1169.83	982.95	986.27		986.73	0.008854	6.61	224.29	124.20	0.66
US	2317	Max WS	Prop2yr Oct2022	587.74	982.95	985.56		985.90	0.009133	5.67	139.59	116.86	0.64
US	2247	Max WS	Ex-100yr	1942.81	983.00	987.62		987.86	0.002223	4.29	497.65	145.66	0.35
US	2247	Max WS	Ex10yr	1187.20	983.00	986.99		987.12	0.001507	3.20	407.38	137.80	0.28
US	2247	Max WS	Ex2yr	530.93	983.00	985.66		985.74	0.001662	2.55	233.57	123.89	0.28
US	2247	Max WS	Prop100yr Oct2022	1895.32	983.00	987.05		987.37	0.003616	5.00	415.63	138.50	0.44
US	2247	Max WS	Prop10yr Oct2022	1041.55	983.00	986.00		986.23	0.003804	4.19	276.38	127.53	0.43
US	2247	Max WS	Prop2yr Oct2022	586.48	983.00	985.25		985.41	0.004256	3.65	183.87	119.32	0.43
US	2177	Max WS	Ex-100yr	1941.89	982.90	987.56		987.73	0.001496	3.53	595.80	164.05	0.29
US	2177	Max WS	Ex10yr	1186.93	982.90	986.94		987.03	0.000982	2.60	495.60	158.26	0.23
US	2177	Max WS	Ex2yr	528.67	982.90	985.60		985.65	0.000949	1.94	294.49	140.67	0.21
US	2177	Max WS	Prop100yr Oct2022	1890.88	982.90	986.92		987.16	0.002539	4.16	492.54	158.06	0.37
US	2177	Max WS	Prop10yr Oct2022	1029.57	982.90	985.83		985.99	0.002590	3.39	328.07	144.07	0.35
US	2177	Max WS	Prop2yr Oct2022	503.79	982.90	985.08		985.16	0.002009	2.44	223.49	132.94	0.30
US	2107	Max WS	Ex-100yr	1941.76	982.91	987.47		987.62	0.001849	2.49	644.05	177.94	0.21
US	2107	Max WS	Ex10yr	1186.00	982.91	986.88		986.96	0.001200	1.83	541.03	172.52	0.16
US	2107	Max WS	Ex2yr	525.40	982.91	985.53		985.58	0.001242	1.40	319.23	154.45	0.15
US	2107	Max WS	Prop100yr Oct2022	1886.48	982.91	986.79		986.99	0.002275	3.85	524.94	171.39	0.35
US	2107	Max WS	Prop10yr Oct2022	1135.76	982.91	985.21		985.49	0.006226	4.47	271.25	149.07	0.53
US	2107	Max WS	Prop2yr Oct2022	579.72	982.91	984.83		984.95	0.003296	2.87	215.46	142.64	0.37
US	2037	Max WS	Ex-100yr	1943.13	981.26	987.45		987.53	0.000583	1.69	912.80	207.59	0.12
US	2037	Max WS	Ex10yr	1186.36	981.26	986.87		986.90	0.000331	1.19	793.54	198.07	0.09
US	2037	Max WS	Ex2yr	525.42	981.26	985.51		985.52	0.000211	0.78	538.69	176.37	0.07
US	2037	Max WS	Prop100yr Oct2022	1886.70	981.26	986.79		986.88	0.000696	2.65	778.31	196.94	0.20
US	2037	Max WS	Prop10yr Oct2022	1134.42	981.26	985.13		985.22	0.001106	2.61	473.65	170.07	0.24
US	2037	Max WS	Prop2yr Oct2022	512.49	981.26	982.70		983.05	0.018585	5.18	110.95	122.79	0.82
US	1967	Max WS	Ex-100yr	1943.05	979.00	987.46		987.50	0.000265	1.39	1318.26	231.93	0.09
US	1967	Max WS	Ex10yr	1186.66	979.00	986.87		986.88	0.000138	0.95	1182.83	224.74	0.06
US	1967	Max WS	Ex2yr	524.51	979.00	985.51		985.51	0.000062	0.56	894.71	198.79	0.04
US	1967	Max WS	Prop100yr Oct2022	1888.73	979.00	986.80		986.85	0.000211	1.82	1168.38	223.56	0.12
US	1967	Max WS	Prop10yr Oct2022	1134.54	979.00	985.14		985.17	0.000209	1.53	823.02	192.34	0.11
US	1967	Max WS	Prop2yr Oct2022	496.73	979.00	982.30		982.33	0.000578	1.61	335.61	151.18	0.17
US	1897	Max WS	Ex-100yr	1944.16	977.00	987.46		987.48	0.000163	1.17	1714.40	268.46	0.07
US	1897	Max WS	Ex10yr	1186.94	977.00	986.87		986.88	0.000081	0.79	1558.29	258.63	0.05
US	1897	Max WS	Ex2yr	525.28	977.00	985.51		985.51	0.000032	0.44	1227.38	227.13	0.03
US	1897	Max WS	Prop100yr Oct2022	1888.75	977.00	986.81		986.84	0.000097	1.34	1543.50	257.54	0.08
US	1897	Max WS	Prop10yr Oct2022	1135.67	977.00	985.14		985.16	0.000081	1.05	1146.51	219.47	0.07
US	1897	Max WS	Prop2yr Oct2022	497.88	977.00	982.30		982.31	0.000113	0.85	592.17	172.58	0.08
US	1827	Max WS	Ex-100yr	1944.29	976.67	987.46		987.47	0.000096	0.94	2105.90	302.51	0.05
US	1827	Max WS	Ex10yr	1186.95	976.67	986.87		986.87	0.000046	0.63	1930.15	291.66	0.04
US	1827	Max WS	Ex2yr	525.15	976.67	985.50		985.51	0.000017	0.35	1551.46	265.27	0.02
US	1827	Max WS	Prop100yr Oct2022	1888.72	976.67	986.81		986.83	0.000057	1.09	1914.72	290.43	0.06
US	1827	Max WS	Prop10yr Oct2022	1135.57	976.67	985.14		985.16	0.000045	0.84	1457.24	258.24	0.05
US	1827	Max WS	Prop2yr Oct2022	496.85	976.67	982.30		982.30	0.000050	0.64	799.95	205.35	0.05

HEC-RAS River: GreenSprings CK Reach: US Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
US	1757	Max WS	Ex-100yr	1944.87	975.43	987.45		987.46	0.000075	0.88	2238.70	301.49	0.05
US	1757	Max WS	Ex10yr	1187.29	975.43	986.86		986.87	0.000035	0.58	2065.36	288.42	0.03
US	1757	Max WS	Ex2yr	524.74	975.43	985.50		985.51	0.000013	0.32	1687.56	267.30	0.02
US	1757	Max WS	Prop100yr Oct2022	1888.06	975.43	986.81		986.83	0.000045	1.03	2050.27	287.59	0.06
US	1757	Max WS	Prop10yr Oct2022	1134.99	975.43	985.14		985.15	0.000034	0.78	1592.25	261.93	0.05
US	1757	Max WS	Prop2yr Oct2022	496.90	975.43	982.29		982.30	0.000032	0.57	912.96	211.67	0.04
US	1687	Max WS	Ex-100yr	1945.44	973.72	987.45		987.46	0.000051	0.77	2505.55	294.19	0.04
US	1687	Max WS	Ex10yr	1187.62	973.72	986.86		986.87	0.000023	0.50	2336.64	281.25	0.03
US	1687	Max WS	Ex2yr	524.89	973.72	985.50		985.50	0.000008	0.27	1963.17	268.46	0.02
US	1687	Max WS	Prop100yr Oct2022	1888.65	973.98	986.81		986.82	0.000026	0.86	2423.53	280.98	0.04
US	1687	Max WS	Prop10yr Oct2022	1135.35	973.98	985.14		985.15	0.000017	0.63	1968.13	265.00	0.04
US	1687	Max WS	Prop2yr Oct2022	497.23	973.98	982.29		982.30	0.000012	0.42	1259.27	229.18	0.03
US	1650			Lat Struct									
US	1627	Max WS	Prop100yr Oct2022	1888.64	973.00	986.76		986.83	0.000125	2.10	883.30	318.63	0.10
US	1627	Max WS	Prop10yr Oct2022	1135.26	973.00	985.12		985.15	0.000070	1.44	775.00	307.57	0.07
US	1627	Max WS	Prop2yr Oct2022	496.98	973.00	982.29		982.30	0.000034	0.84	587.96	283.04	0.05
US	1622	Max WS	Prop100yr Oct2022	1888.64	973.00	980.17		980.44	0.001198	4.19	448.13	225.78	0.28
US	1622	Max WS	Prop10yr Oct2022	1135.26	973.00	978.03		978.24	0.001528	3.72	306.98	180.11	0.30
US	1622	Max WS	Prop2yr Oct2022	496.98	973.00	975.91		976.05	0.002198	3.05	167.19	128.29	0.32
US	1617	Max WS	Ex-100yr	1090.14	980.50	987.11		987.54	0.006820	5.30	209.66	82.14	0.56
US	1617	Max WS	Ex10yr	805.70	980.50	986.43		986.86	0.009888	5.28	154.37	78.84	0.64
US	1617	Max WS	Ex2yr	513.86	980.50	985.22		985.82	0.005405	6.21	82.72	61.10	0.52
US	1617	Max WS	Prop100yr Oct2022	1888.66	973.00	979.73		980.46	0.003511	6.85	275.66	201.07	0.47
US	1617	Max WS	Prop10yr Oct2022	1135.27	973.00	977.69		978.25	0.004376	5.97	190.13	144.56	0.49
US	1617	Max WS	Prop2yr Oct2022	496.99	973.00	975.70		976.04	0.005781	4.66	106.54	120.72	0.52
US	1600			Culvert									
US	1575	Max WS	Ex-100yr	956.28	979.90	983.81	984.35	986.61	0.028627	13.43	71.18	37.77	1.22
US	1575	Max WS	Ex10yr	743.25	979.90	983.44	983.67	985.52	0.024284	11.56	64.29	37.14	1.11
US	1575	Max WS	Ex2yr	511.93	979.90	982.67	982.88	984.33	0.027522	10.34	49.51	35.66	1.13
US	1575	Max WS	Prop100yr Oct2022	1888.66	972.28	974.34	976.25	981.89	0.176874	22.05	85.64	107.83	2.75
US	1575	Max WS	Prop10yr Oct2022	1135.27	972.28	973.81	975.12	978.85	0.177853	18.02	63.00	101.10	2.62
US	1575	Max WS	Prop2yr Oct2022	496.97	972.28	973.23	973.94	975.82	0.175108	12.89	38.56	93.85	2.39
US	1550			Lat Struct									
US	1514	Max WS	Ex-100yr	864.37	977.00	985.17		985.39	0.001111	3.81	251.67	63.48	0.26
US	1514	Max WS	Ex10yr	623.31	977.00	984.40		984.55	0.000884	3.14	212.02	46.00	0.22
US	1514	Max WS	Ex2yr	451.54	977.00	983.15		983.28	0.001039	2.92	160.11	37.94	0.23
US	1514	Max WS	Prop100yr Oct2022	1888.68	968.08	973.42		973.63	0.001652	4.01	523.78	135.94	0.31
US	1514	Max WS	Prop10yr Oct2022	1135.31	968.08	972.00		972.18	0.002047	3.61	343.20	119.49	0.33
US	1514	Max WS	Prop2yr Oct2022	496.73	968.08	970.66		970.76	0.001963	2.63	198.91	96.19	0.30
US	1486	Max WS	Ex-100yr	730.27	975.96	977.87	979.50	984.34	0.218602	20.41	35.78	22.69	2.86
US	1486	Max WS	Ex10yr	532.49	975.96	977.56	978.89	982.86	0.220795	18.46	28.84	21.51	2.81
US	1486	Max WS	Ex2yr	378.36	975.96	977.32	978.37	981.23	0.196941	15.86	23.86	20.62	2.60
US	1486	Max WS	Prop100yr Oct2022	1950.91	967.82	973.03		973.43	0.003269	5.54	396.92	108.45	0.43
US	1486	Max WS	Prop10yr Oct2022	1171.35	967.82	971.53		971.93	0.005159	5.49	241.46	98.41	0.51
US	1486	Max WS	Prop2yr Oct2022	513.54	967.82	970.15		970.49	0.007704	4.84	117.23	78.41	0.58
US	1472	Max WS	Ex-100yr	739.40	975.14	979.16		979.61	0.011074	5.31	139.26	66.55	0.49
US	1472	Max WS	Ex10yr	475.29	975.14	978.53		978.88	0.011452	4.76	101.02	55.19	0.48
US	1472	Max WS	Ex2yr	322.38	975.14	977.91		978.24	0.014967	4.67	69.83	43.11	0.53
US	1472	Max WS	Prop100yr Oct2022	1950.68	966.88	972.94		973.36	0.003029	5.97	388.65	99.38	0.43
US	1472	Max WS	Prop10yr Oct2022	1171.27	966.88	971.43		971.83	0.004116	5.74	246.41	89.13	0.48
US	1472	Max WS	Prop2yr Oct2022	513.56	966.88	970.07		970.36	0.004503	4.71	131.62	78.94	0.47
US	1410.57	Max WS	Ex-100yr	729.67	964.79	978.72		978.73	0.000026	0.52	1481.83	209.19	0.03
US	1410.57	Max WS	Ex10yr	475.17	964.79	978.04		978.04	0.000015	0.37	1343.81	195.57	0.02
US	1410.57	Max WS	Ex2yr	322.08	964.79	977.23		977.23	0.000009	0.28	1192.08	178.94	0.02
US	1410.57	Max WS	Prop100yr Oct2022	1949.68	965.93	970.35	970.60	972.01	0.028833	10.35	188.39	74.13	1.14
US	1410.57	Max WS	Prop10yr Oct2022	1171.29	965.93	969.86		970.77	0.019530	7.65	153.02	70.77	0.92
US	1410.57	Max WS	Prop2yr Oct2022	475.83	965.93	968.89		969.34	0.016362	5.39	88.20	60.47	0.79
US	1400			Lat Struct									
US	1336.86	Max WS	Ex-100yr	2042.98	962.90	978.69		978.71	0.000081	1.00	2143.25	249.95	0.05
US	1336.86	Max WS	Ex10yr	1244.32	962.90	978.03		978.03	0.000037	0.65	1981.82	236.27	0.03
US	1336.86	Max WS	Ex2yr	544.08	962.90	977.23		977.23	0.000010	0.31	1796.73	227.42	0.02
US	1336.86	Max WS	Prop100yr Oct2022	1951.85	964.27	969.05	968.99	970.20	0.021305	8.59	227.33	94.52	0.98
US	1336.86	Max WS	Prop10yr Oct2022	1171.86	964.27	968.23	968.27	969.16	0.027305	7.72	151.87	89.48	1.04
US	1336.86	Max WS	Prop2yr Oct2022	513.84	964.27	967.12	967.29	968.00	0.033229	7.51	68.47	48.49	1.11
US	1263.14	Max WS	Ex-100yr	2042.16	963.00	978.69		978.70	0.000063	0.88	2432.56	288.43	0.04
US	1263.14	Max WS	Ex10yr	1244.01	963.00	978.03		978.03	0.000029	0.57	2246.47	269.27	0.03
US	1263.14	Max WS	Ex2yr	544.01	963.00	977.23		977.23	0.000007	0.28	2038.14	253.31	0.02
US	1263.14	Max WS	Prop100yr Oct2022	1952.14	962.91	968.77		969.22	0.005002	5.38	362.69	102.23	0.50
US	1263.14	Max WS	Prop10yr Oct2022	1172.00	962.91	967.67		968.00	0.005305	4.60	254.83	95.27	0.50

HEC-RAS River: GreenSprings CK Reach: US Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
US	1263.14	Max WS	Prop2yr Oct2022	513.94	962.91	966.60		966.76	0.004739	3.30	155.82	88.39	0.44
US	1190	Max WS	Prop100yr Oct2022	1952.05	962.27	968.07	967.08	968.74	0.008132	6.57	297.00	89.12	0.63
US	1190	Max WS	Prop10yr Oct2022	1171.96	962.27	966.95	966.28	967.48	0.009544	5.82	201.49	82.13	0.65
US	1190	Max WS	Prop2yr Oct2022	513.92	962.27	965.58	965.30	966.03	0.016847	5.35	96.10	68.20	0.79
US	1189.43	Max WS	Ex-100yr	2041.64	965.12	978.68	968.88	978.70	0.000094	0.96	2225.32	306.63	0.05
US	1189.43	Max WS	Ex10yr	1243.96	965.12	978.02	968.14	978.03	0.000046	0.64	2027.75	292.52	0.04
US	1189.43	Max WS	Ex2yr	543.97	965.12	977.23	967.23	977.23	0.000012	0.31	1804.93	268.16	0.02
US	1180			Inl Struct									
US	1170	Max WS	Prop100yr Oct2022	1952.05	961.00	966.58		967.13	0.008432	5.71	337.94	106.81	0.54
US	1170	Max WS	Prop10yr Oct2022	1171.96	961.00	965.53		965.93	0.010631	5.07	231.40	96.92	0.57
US	1170	Max WS	Prop2yr Oct2022	513.93	961.00	964.15		964.48	0.016406	4.61	111.42	71.77	0.65
US	1115.71	Max WS	Ex-100yr	2041.64	957.96	961.35	962.84	965.74	0.097926	18.19	136.48	67.38	1.80
US	1115.71	Max WS	Ex10yr	1243.97	957.96	960.66	961.68	964.08	0.105246	16.01	92.98	57.92	1.79
US	1115.71	Max WS	Ex2yr	543.97	957.96	959.79	960.50	962.10	0.119485	12.80	48.46	43.99	1.78
US	1115.71	Max WS	Prop100yr Oct2022	1952.06	957.96	961.28	962.73	965.58	0.099381	18.04	131.57	66.58	1.81
US	1115.71	Max WS	Prop10yr Oct2022	1171.92	957.96	960.57	961.58	963.97	0.109314	15.91	87.73	56.46	1.82
US	1115.71	Max WS	Prop2yr Oct2022	513.92	957.96	959.77	960.44	961.92	0.113736	12.36	47.34	43.56	1.73
US	1042.00	Max WS	Ex-100yr	2041.19	953.90	959.74		960.97	0.012592	9.67	265.00	72.83	0.71
US	1042.00	Max WS	Ex10yr	1243.89	953.90	958.40		959.38	0.013793	8.47	175.95	59.91	0.71
US	1042.00	Max WS	Ex2yr	543.93	953.90	957.03		957.55	0.011645	6.06	102.59	48.00	0.62
US	1042.00	Max WS	Prop100yr Oct2022	1952.01	953.90	959.66		960.83	0.012260	9.45	258.76	72.02	0.70
US	1042.00	Max WS	Prop10yr Oct2022	1171.89	953.90	958.25		959.21	0.014071	8.35	167.00	58.45	0.72
US	1042.00	Max WS	Prop2yr Oct2022	513.91	953.90	957.03		957.49	0.010506	5.75	102.21	47.93	0.58
US	968.29	Max WS	Ex-100yr	2040.23	953.00	959.43		960.11	0.006682	7.53	343.68	98.52	0.53
US	968.29	Max WS	Ex10yr	1243.83	953.00	957.95		958.53	0.006808	6.36	219.01	65.23	0.51
US	968.29	Max WS	Ex2yr	543.89	953.00	956.70		956.94	0.004165	4.08	144.46	55.12	0.38
US	968.29	Max WS	Prop100yr Oct2022	1951.92	953.00	959.34		960.00	0.006556	7.39	335.30	97.76	0.52
US	968.29	Max WS	Prop10yr Oct2022	1171.84	953.00	957.81		958.37	0.006766	6.22	209.93	63.82	0.51
US	968.29	Max WS	Prop2yr Oct2022	513.90	953.00	956.73		956.94	0.003599	3.81	146.09	55.30	0.35
US	894.57	Max WS	Ex-100yr	2040.79	952.90	957.40	957.34	959.19	0.023865	11.26	212.27	71.20	0.94
US	894.57	Max WS	Ex10yr	993.97	952.90	956.90		957.45	0.008533	6.22	180.50	57.51	0.55
US	894.57	Max WS	Ex2yr	381.08	952.90	956.42		956.53	0.001984	2.75	154.05	54.36	0.26
US	894.57	Max WS	Prop100yr Oct2022	1951.26	952.90	957.25	957.07	959.03	0.024649	11.18	201.98	65.94	0.95
US	894.57	Max WS	Prop10yr Oct2022	1045.18	952.90	956.92		957.53	0.009229	6.49	181.92	57.73	0.57
US	894.57	Max WS	Prop2yr Oct2022	513.87	952.90	956.48		956.68	0.003385	3.64	157.47	54.78	0.34
US	820.86	Max WS	Ex-100yr	1038.74	952.97	956.81		957.02	0.003301	3.80	305.19	103.21	0.34
US	820.86	Max WS	Ex10yr	946.97	952.97	956.77		956.95	0.002852	3.50	300.78	101.54	0.32
US	820.86	Max WS	Ex2yr	376.74	952.97	956.39		956.42	0.000644	1.55	264.13	90.49	0.15
US	820.86	Max WS	Prop100yr Oct2022	1060.09	952.97	956.81		957.03	0.003434	3.87	305.33	103.27	0.35
US	820.86	Max WS	Prop10yr Oct2022	1021.78	952.97	956.78		956.99	0.003275	3.76	302.30	101.95	0.34
US	820.86	Max WS	Prop2yr Oct2022	513.86	952.97	956.43		956.49	0.001147	2.09	268.11	91.02	0.20
US	747.14	Max WS	Ex-100yr	2041.68	948.87	952.79	953.46	954.94	0.052245	14.11	196.24	111.83	1.33
US	747.14	Max WS	Ex10yr	1244.57	948.87	952.01	952.76	954.62	0.087371	15.43	115.19	93.62	1.65
US	747.14	Max WS	Ex2yr	543.87	948.87	951.16	951.96	954.29	0.136390	15.01	46.97	61.46	1.93
US	747.14	Max WS	Prop100yr Oct2022	1952.08	948.87	952.71	953.38	954.89	0.054979	14.24	186.73	109.86	1.36
US	747.14	Max WS	Prop10yr Oct2022	1172.71	948.87	951.93	952.71	954.61	0.092593	15.57	107.78	91.61	1.69
US	747.14	Max WS	Prop2yr Oct2022	513.83	948.87	951.15	951.90	954.03	0.126558	14.38	46.07	61.00	1.86
US	673.43	Max WS	Ex-100yr	2041.53	944.91	952.06		952.34	0.001830	5.18	521.84	127.01	0.34
US	673.43	Max WS	Ex10yr	1244.32	944.91	950.28		950.58	0.002832	5.31	314.80	108.52	0.41
US	673.43	Max WS	Ex2yr	543.83	944.91	948.35		948.71	0.005204	5.32	125.85	70.48	0.51
US	673.43	Max WS	Prop100yr Oct2022	1951.82	944.91	951.91		952.19	0.001858	5.15	503.00	125.62	0.35
US	673.43	Max WS	Prop10yr Oct2022	1172.44	944.91	950.07		950.39	0.003127	5.43	291.94	107.04	0.43
US	673.43	Max WS	Prop2yr Oct2022	513.85	944.91	948.26		948.61	0.005264	5.25	119.29	66.06	0.51
US	599.71	Max WS	Ex-100yr	2041.42	943.00	945.57	947.24	951.00	0.104269	19.86	116.89	66.27	2.19
US	599.71	Max WS	Ex10yr	1244.20	943.00	945.05	946.03	948.60	0.088916	15.77	86.46	52.77	1.95
US	599.71	Max WS	Ex2yr	543.82	943.00	944.38	944.92	946.13	0.073090	10.96	53.15	46.83	1.65
US	599.71	Max WS	Prop100yr Oct2022	1951.86	943.00	945.55	947.02	950.59	0.097279	19.11	115.95	65.78	2.12
US	599.71	Max WS	Prop10yr Oct2022	1172.39	943.00	945.01	946.03	948.32	0.085239	15.23	84.22	52.31	1.90
US	599.71	Max WS	Prop2yr Oct2022	513.88	943.00	944.29	944.86	946.15	0.085347	11.27	48.65	45.96	1.77
US	526.00	Max WS	Ex-100yr	2041.40	939.00	943.88	944.28	945.70	0.021287	13.12	250.61	92.83	1.09
US	526.00	Max WS	Ex10yr	1244.13	939.00	943.28	943.23	944.38	0.014823	9.96	197.83	83.20	0.89
US	526.00	Max WS	Ex2yr	543.63	939.00	942.31		942.85	0.009624	6.64	123.75	68.86	0.68
US	526.00	Max WS	Prop100yr Oct2022	1951.79	939.00	943.80	944.15	945.57	0.020939	12.87	243.66	91.32	1.08
US	526.00	Max WS	Prop10yr Oct2022	1172.34	939.00	943.22	943.12	944.25	0.014155	9.62	192.48	82.24	0.86
US	526.00	Max WS	Prop2yr Oct2022	513.66	939.00	942.26		942.77	0.009293	6.44	119.96	67.93	0.67
US	452.29	Max WS	Ex-100yr	2041.33	937.73	943.98		944.25	0.001942	4.87	567.51	135.67	0.35
US	452.29	Max WS	Ex10yr	1243.98	937.73	943.27		943.41	0.001218	3.55	473.45	128.89	0.27
US	452.29	Max WS	Ex2yr	543.59	937.73	942.22		942.27	0.000562	2.09	345.73	114.73	0.18
US	452.29	Max WS	Prop100yr Oct2022	1951.65	937.73	943.89		944.15	0.001891	4.76	555.16	134.78	0.34
US	452.29	Max WS	Prop10yr Oct2022	1172.24	937.73	943.19		943.33	0.001145	3.41	464.13	128.17	0.26

HEC-RAS River: GreenSprings CK Reach: US Profile: Max WS (Continued)

Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
US	452.29	Max WS	Prop2yr Oct2022	513.68	937.73	942.16		942.20	0.000533	2.02	338.26	113.69	0.17
US	378.57	Max WS	Ex-100yr	2041.20	934.90	944.02		944.10	0.000366	2.73	1224.60	237.48	0.16
US	378.57	Max WS	Ex10yr	1243.93	934.90	943.28		943.32	0.000203	1.92	1053.00	228.74	0.12
US	378.57	Max WS	Ex2yr	543.52	934.90	942.22		942.24	0.000073	1.05	821.82	207.14	0.07
US	378.57	Max WS	Prop100yr Oct2022	1951.56	934.90	943.93		944.00	0.000351	2.65	1202.11	236.00	0.16
US	378.57	Max WS	Prop10yr Oct2022	1172.13	934.90	943.21		943.25	0.000188	1.84	1036.07	227.91	0.11
US	378.57	Max WS	Prop2yr Oct2022	513.64	934.90	942.14		942.15	0.000068	1.01	805.33	205.78	0.07
US	281			Culvert									
US	231.14	Max WS	Ex-100yr	2039.10	931.00	935.16	936.59	939.98	0.068056	17.79	116.35	137.05	1.82
US	231.14	Max WS	Ex10yr	1243.40	931.00	934.39	935.41	937.80	0.071943	14.96	84.64	129.35	1.78
US	231.14	Max WS	Ex2yr	543.50	931.00	933.74	934.11	935.13	0.046381	9.50	57.98	120.23	1.35
US	231.14	Max WS	Prop100yr Oct2022	1946.57	931.00	934.97	936.47	940.04	0.078445	18.26	108.35	135.41	1.93
US	231.14	Max WS	Prop10yr Oct2022	1171.84	931.00	934.37	935.29	937.46	0.065930	14.24	83.83	129.12	1.70
US	231.14	Max WS	Prop2yr Oct2022	513.63	931.00	933.76	934.04	934.96	0.038946	8.81	59.11	120.70	1.24
US	157.43	Max WS	Ex-100yr	2040.92	928.93	931.34	932.31	934.58	0.079248	15.08	142.72	114.30	1.85
US	157.43	Max WS	Ex10yr	1243.64	928.93	930.97	931.55	932.94	0.064037	11.87	112.17	110.76	1.61
US	157.43	Max WS	Ex2yr	543.47	928.93	930.40	930.74	931.53	0.063089	9.00	66.65	102.45	1.49
US	157.43	Max WS	Prop100yr Oct2022	1950.51	928.93	931.30	932.23	934.40	0.077541	14.74	139.72	113.97	1.82
US	157.43	Max WS	Prop10yr Oct2022	1171.85	928.93	930.93	931.47	932.79	0.062389	11.53	108.98	110.17	1.58
US	157.43	Max WS	Prop2yr Oct2022	513.64	928.93	930.37	930.70	931.47	0.064130	8.88	63.88	101.90	1.49
US	83.71	Max WS	Ex-100yr	2040.91	925.30	929.12	929.52	930.73	0.025264	11.48	210.61	107.32	1.12
US	83.71	Max WS	Ex10yr	1243.74	925.30	928.44	928.75	929.73	0.026635	10.10	145.52	89.00	1.11
US	83.71	Max WS	Ex2yr	543.48	925.30	927.57	927.79	928.44	0.029144	8.00	76.93	67.99	1.08
US	83.71	Max WS	Prop100yr Oct2022	1950.89	925.30	929.00	929.44	930.66	0.026652	12.28	198.45	104.17	1.17
US	83.71	Max WS	Prop10yr Oct2022	1172.01	925.30	928.33	928.68	929.67	0.028416	10.98	135.72	87.42	1.16
US	83.71	Max WS	Prop2yr Oct2022	513.65	925.30	927.48	927.78	928.46	0.031008	8.97	70.84	65.72	1.14
US	10	Max WS	Ex-100yr	2040.88	922.34	925.62	926.44	928.20	0.048405	15.64	174.11	108.60	1.55
US	10	Max WS	Ex10yr	1243.70	922.34	924.99	925.74	927.26	0.053040	14.12	112.92	83.28	1.56
US	10	Max WS	Ex2yr	543.46	922.34	924.19	924.79	926.07	0.064307	12.07	55.12	61.12	1.62
US	10	Max WS	Prop100yr Oct2022	1950.81	922.34	925.52	926.41	928.20	0.052056	15.88	163.39	104.83	1.60
US	10	Max WS	Prop10yr Oct2022	1171.94	922.34	924.95	925.65	927.09	0.050803	13.67	109.58	81.82	1.53
US	10	Max WS	Prop2yr Oct2022	513.65	922.34	924.26	924.73	925.73	0.048677	10.75	59.01	63.40	1.41

Appendix D: LID Results

El Dorado County LID Calculator		
Shed Name	GEN01	
Climate station	PLACERVILLE	
Saturated hydraulic conductivity	0.03	in/hr
Impervious area	1.458011938	acres
Design Storm	1.13	inches
Method	Design Storm	

LID BMP Types	Area Needed (acres)	
Bioretention Cell - 18" Soil - 12" Gravel Storage	0.10	ac
Bioretention Cell - 18" Soil - 24" Gravel Storage	0.08	ac
Bioretention Cell - 18" Soil - 36" Gravel Storage	0.06	ac
Bioretention Cell - 24" Soil - 12" Gravel Storage	0.09	ac
Bioretention Cell - 24" Soil - 24" Gravel Storage	0.07	ac
Bioretention Cell - 24" Soil - 36" Gravel Storage	0.06	ac
Bioretention Cell - Soil Depth Varies5 - No Gravel Storage	0.83	ac
Infiltration Basin - Vegetated	1.69	ac
Infiltration Gallery	0.30	ac
Infiltration Trench	1.11	ac
Overland Flow no amendment	N/A	
Porous Pavement	1.16	ac
Strip, Amended 6"	2.19	ac
Strip, Amended 12"	0.60	ac
Strip, Amended 18"	0.34	ac
Swale, Amended 6"6	2.19	ac
Swale, Amended 12"6	0.60	ac
Swale, Amended 18"6	0.34	ac
Capture and Use Storage7	5507.58	cf

*Note: Gen-01-DS and Gen-01-B contains existing downstream impervious not used in this calculation.

El Dorado County LID Calculator		
Shed Name	GEN03	
Climate station	PLACERVILLE	
Saturated hydraulic conductivity	0.03	in/hr
Impervious area	5.631016988	acres
Design Storm	1.13	inches
Method	Design Storm	

LID BMP Types	Area Needed (acres)	
Bioretention Cell - 18" Soil - 12" Gravel Storage	0.39	ac
Bioretention Cell - 18" Soil - 24" Gravel Storage	0.30	ac
Bioretention Cell - 18" Soil - 36" Gravel Storage	0.25	ac
Bioretention Cell - 24" Soil - 12" Gravel Storage	0.35	ac
Bioretention Cell - 24" Soil - 24" Gravel Storage	0.28	ac
Bioretention Cell - 24" Soil - 36" Gravel Storage	0.23	ac
Bioretention Cell - Soil Depth Varies5 - No Gravel Storage	3.21	ac
Infiltration Basin - Vegetated	6.52	ac
Infiltration Gallery	1.16	ac
Infiltration Trench	4.30	ac
Overland Flow no amendment	N/A	
Porous Pavement	4.47	ac
Strip, Amended 6"	8.47	ac
Strip, Amended 12"	2.30	ac
Strip, Amended 18"	1.33	ac
Swale, Amended 6"6	8.47	ac
Swale, Amended 12"6	2.30	ac
Swale, Amended 18"6	1.33	ac
Capture and Use Storage7	21270.92	cf

El Dorado County LID Calculator		
Shed Name	GEN04	
Climate station	PLACERVILLE	
Saturated hydraulic conductivity	0.03	in/hr
Impervious area	7.956726354	acres
Design Storm	1.13	inches
Method	Design Storm	

LID BMP Types	Area Needed (acres)	
Bioretention Cell - 18" Soil - 12" Gravel Storage	0.55	ac
Bioretention Cell - 18" Soil - 24" Gravel Storage	0.43	ac
Bioretention Cell - 18" Soil - 36" Gravel Storage	0.35	ac
Bioretention Cell - 24" Soil - 12" Gravel Storage	0.50	ac
Bioretention Cell - 24" Soil - 24" Gravel Storage	0.39	ac
Bioretention Cell - 24" Soil - 36" Gravel Storage	0.33	ac
Bioretention Cell - Soil Depth Varies5 - No Gravel Storage	4.53	ac
Infiltration Basin - Vegetated	9.22	ac
Infiltration Gallery	1.64	ac
Infiltration Trench	6.07	ac
Overland Flow no amendment	N/A	
Porous Pavement	6.31	ac
Strip, Amended 6"	11.97	ac
Strip, Amended 12"	3.25	ac
Strip, Amended 18"	1.88	ac
Swale, Amended 6"6	11.97	ac
Swale, Amended 12"6	3.25	ac
Swale, Amended 18"6	1.88	ac
Capture and Use Storage7	30056.18	cf

El Dorado County LID Calculator		
Shed Name	GEN05	
Climate station	PLACERVILLE	
Saturated hydraulic conductivity	0.03	in/hr
Impervious area	9.89	acres
Design Storm	1.13	inches
Method	Design Storm	

LID BMP Types	Area Needed (acres)	
Bioretention Cell - 18" Soil - 12" Gravel Storage	0.68	ac
Bioretention Cell - 18" Soil - 24" Gravel Storage	0.53	ac
Bioretention Cell - 18" Soil - 36" Gravel Storage	0.43	ac
Bioretention Cell - 24" Soil - 12" Gravel Storage	0.62	ac
Bioretention Cell - 24" Soil - 24" Gravel Storage	0.49	ac
Bioretention Cell - 24" Soil - 36" Gravel Storage	0.41	ac
Bioretention Cell - Soil Depth Varies5 - No Gravel Storage	5.63	ac
Infiltration Basin - Vegetated	11.46	ac
Infiltration Gallery	2.04	ac
Infiltration Trench	7.55	ac
Overland Flow no amendment	N/A	
Porous Pavement	7.85	ac
Strip, Amended 6"	14.88	ac
Strip, Amended 12"	4.04	ac
Strip, Amended 18"	2.34	ac
Swale, Amended 6"6	14.88	ac
Swale, Amended 12"6	4.04	ac
Swale, Amended 18"6	2.34	ac
Capture and Use Storage7	37360.13	cf

El Dorado County LID Calculator		
Shed Name	GEN06 A & C	
Climate station	PLACERVILLE	
Saturated hydraulic conductivity	0.03	in/hr
Impervious area	16.57	acres
Design Storm	1.13	inches
Method	Design Storm	

LID BMP Types	Area Needed (acres)	
Bioretention Cell - 18" Soil - 12" Gravel Storage	1.15	ac
Bioretention Cell - 18" Soil - 24" Gravel Storage	0.89	ac
Bioretention Cell - 18" Soil - 36" Gravel Storage	0.72	ac
Bioretention Cell - 24" Soil - 12" Gravel Storage	1.04	ac
Bioretention Cell - 24" Soil - 24" Gravel Storage	0.81	ac
Bioretention Cell - 24" Soil - 36" Gravel Storage	0.68	ac
Bioretention Cell - Soil Depth Varies5 - No Gravel Storage	9.43	ac
Infiltration Basin - Vegetated	19.19	ac
Infiltration Gallery	3.42	ac
Infiltration Trench	12.65	ac
Overland Flow no amendment	N/A	
Porous Pavement	13.15	ac
Strip, Amended 6"	24.93	ac
Strip, Amended 12"	6.77	ac
Strip, Amended 18"	3.92	ac
Swale, Amended 6"6	24.93	ac
Swale, Amended 12"6	6.77	ac
Swale, Amended 18"6	3.92	ac
Capture and Use Storage7	62587.39	cf

*Area can be split between both basins

El Dorado County LID Calculator		
Shed Name	GEN06 B	
Climate station	PLACERVILLE	
Saturated hydraulic conductivity	0.03	in/hr
Impervious area	10.38	acres
Design Storm	1.13	inches
Method	Design Storm	

LID BMP Types	Area Needed (acres)	
Bioretention Cell - 18" Soil - 12" Gravel Storage	0.72	ac
Bioretention Cell - 18" Soil - 24" Gravel Storage	0.56	ac
Bioretention Cell - 18" Soil - 36" Gravel Storage	0.45	ac
Bioretention Cell - 24" Soil - 12" Gravel Storage	0.65	ac
Bioretention Cell - 24" Soil - 24" Gravel Storage	0.51	ac
Bioretention Cell - 24" Soil - 36" Gravel Storage	0.43	ac
Bioretention Cell - Soil Depth Varies5 - No Gravel Storage	5.91	ac
Infiltration Basin - Vegetated	12.03	ac
Infiltration Gallery	2.14	ac
Infiltration Trench	7.93	ac
Overland Flow no amendment	N/A	
Porous Pavement	8.24	ac
Strip, Amended 6"	15.62	ac
Strip, Amended 12"	4.24	ac
Strip, Amended 18"	2.46	ac
Swale, Amended 6"6	15.62	ac
Swale, Amended 12"6	4.24	ac
Swale, Amended 18"6	2.46	ac
Capture and Use Storage7	39222.40	cf

El Dorado County LID Calculator		
Shed Name	GEN08	
Climate station	PLACERVILLE	
Saturated hydraulic conductivity	0.03	in/hr
Impervious area	8.62	acres
Design Storm	1.13	inches
Method	Design Storm	

LID BMP Types	Area Needed (acres)	
Bioretention Cell - 18" Soil - 12" Gravel Storage	0.60	ac
Bioretention Cell - 18" Soil - 24" Gravel Storage	0.46	ac
Bioretention Cell - 18" Soil - 36" Gravel Storage	0.38	ac
Bioretention Cell - 24" Soil - 12" Gravel Storage	0.54	ac
Bioretention Cell - 24" Soil - 24" Gravel Storage	0.42	ac
Bioretention Cell - 24" Soil - 36" Gravel Storage	0.36	ac
Bioretention Cell - Soil Depth Varies5 - No Gravel Storage	4.90	ac
Infiltration Basin - Vegetated	9.98	ac
Infiltration Gallery	1.78	ac
Infiltration Trench	6.58	ac
Overland Flow no amendment	N/A	
Porous Pavement	6.84	ac
Strip, Amended 6"	12.96	ac
Strip, Amended 12"	3.52	ac
Strip, Amended 18"	2.04	ac
Swale, Amended 6"6	12.96	ac
Swale, Amended 12"6	3.52	ac
Swale, Amended 18"6	2.04	ac
Capture and Use Storage7	32548.03	cf

Appendix G

Policy and Regulation
Consistency Analysis

Project Compliance with Applicable Land Use-Related Plans, Policies, and Regulations

Plan/ Policy/Regulation	Project Consistency
El Dorado County General Plan	
Objective 2.3.1: Provide for the retention of distinct topographical features and conservation of the native vegetation of the County.	***Consistent.*** As discussed in Section 3.1, "Aesthetics," Section 3.1.3, "Environmental Impacts and Mitigation Measures," the project design proposes the use of RE-5 densities and open space lots to transition the extent of site development and blend with adjoining land areas.
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.	***Consistent.*** As discussed in Section 3.1, "Aesthetics," Section 3.1.3, "Environmental Impacts and Mitigation Measures," the project design proposes most of the existing oak woodland viewed from Green Valley Road would be retained and would partially obscure public views of the denser residential development proposed in the central portion of the site and generally blend with adjoining land areas.
Objective 3.2.2: Maintain the visual integrity of hillsides and ridge lines.	***Consistent.*** As discussed in Section 3.1, "Aesthetics," Section 3.1.3, "Environmental Impacts and Mitigation Measures," the project design proposes the use of RE-5 densities and open space lots to transition the extent of site development and generally blend with adjoining land areas. No ridgelines exist on the project site.
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.	***Consistent.*** As discussed in Section 3.1, "Aesthetics," Section 3.1.3, "Environmental Impacts and Mitigation Measures," and shown in Figure 3.6-2, the proposed project design retains the majority of areas with 30 percent or greater slopes in open space or on proposed RE-5 residential lots (5 acres and greater).
Objective 2.5.1: Provision for the visual and physical separation of communities from new development.	***Consistent.*** As discussed in Section 3.1, "Aesthetics," Section 3.1.3, "Environmental Impacts and Mitigation Measures," the project design proposes the use of RE-5 densities and open space lots to transition the extent of site development and generally blend with adjoining land areas.
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.	***Consistent.*** As discussed in Section 3.1, "Aesthetics," Section 3.1.3, "Environmental Impacts and Mitigation Measures," the project design proposes the use of RE-5 densities and open space lots to transition the extent of site development and generally blend with adjoining land areas.
Objective 2.8.1: Lighting Standards - Provide standards, consistent with prudent safety practices, for the elimination of high intensity lighting and glare.	***Consistent.*** As discussed in Section 3.1, "Aesthetics," Section 3.1.3, "Environmental Impacts and Mitigation Measures," features to reduce excess nighttime light and glare, such as the use of directional shielding and automatic shutoff or motion sensors, would be incorporated into the project design to comply with County and El Dorado CSD standards and requirements, additionally, the proposed RE-5 lots, open space lots, existing vegetation, and topography, as well as distance, would aid in obstructing and reducing the intensity of new light and glare sources during the day.
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.	**Consistent.** As discussed in Section 3.1, "Aesthetics," Section 3.1.3, "Environmental Impacts and Mitigation Measures," features to reduce excess nighttime light and glare, such as the use of directional shielding and automatic shutoff or motion sensors, would be incorporated into the project design to comply with County and El Dorado CSD standards and requirements, additionally, the proposed RE-5 lots, open space lots, existing vegetation, and topography, as well as distance, would aid in obstructing and reducing the intensity of new light and glare sources during the day. The El Dorado Hills Community Services District would design the park features after project approval and acquisition of the park and would

Plan/ Policy/Regulation	Project Consistency
	determine whether lighted sports fields or courts would be included in the future park design and identify light pollution controls under a separate project by the CSD.
Objective 5.1.2: Concurrency: Ensure through consultation with responsible service and utility purveyors that adequate public services and utilities, including fire protection, police protection, and ambulance service are provided concurrent with discretionary development or through other mitigation measures provided, and ensure that adequate school facilities are provided concurrent with discretionary development to the maximum extent permitted by State law. It shall be the policy of the County to cooperate with responsible service and utility purveyors in ensuring the adequate provision of service. Absent evidence beyond a reasonable doubt, the County will rely on the information received from such purveyors and shall not substitute its judgment for that of the responsible purveyors on questions of capacity or levels of service.	***Consistent.*** As discussed in Section 3.13, "Public Services and Recreation," Section 3.13.3, "Environmental Impacts and Mitigation Measures," the El Dorado Hills Fire Department, ECSO, EDUHSD and RUSD, and El Dorado County and El Dorado Hills Community Services District agencies have level of service standards that the project would meet by agreements and consultation with the associated public services the service purveyors. Additionally, as discussed in Section 3.15, "Utilities and Service Systems," Section 3.15.3, "Environmental Impacts and Mitigation Measures," EID and El Dorado Disposal would both be able to serve the projects water supply, wastewater, and solid waste disposal needs, respectively. El Dorado Local Agency Formation Commission approval of project annexation to EID, El Dorado Hills Fire Department, and El Dorado Hills Community Services District service areas would be required.
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(Draft EIR Table 3.13-1), 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 [Capital Improvements Plan] project is funded and authorized which will increase service capacity.	***Consistent.*** As discussed in Section 3.13, "Public Services and Recreation," Section 3.13.3, "Environmental Impacts and Mitigation Measures," public service provision for public services and parks would not conflict with this Policy. Additionally, as discussed in Section 3.15, "Utilities and Service Systems," Section 3.15.3, "Environmental Impacts and Mitigation Measures," based on the EID 2022 Water Supply and Demand Report and the EID 2020 UWMP, water supply would be adequate to accommodate the project under normal-, dry-, and multiple-dry-year water conditions. Additionally, the constituents in the wastewater flow from the project to the EDHWWTP would be within the plant's capacity. The solid waste facilities would experience a small increase from the project and would not consume a substantial proportion of the available permitted capacity and would not trigger the need to expand the Potrero Hills Landfill.
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 (Draft EIR Table 3.13-1).	***Consistent.*** The project would be required to comply with level of service standards (discussed above under Policy 5.1.2.1) that would address public services and their providers to be consistent with the General Plan.
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.	***Consistent.*** As discussed in Chapter 2, "Project Description," and Section 3.15, "Utilities and Service Systems," Section 3.15.3, "Environmental Impacts and Mitigation Measures," the project proposes to incorporate off-site improvements into its design to adequately service water supply and wastewater needs of the project.
Objective 5.2.1: County-Wide Water Resource 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.	***Consistent.*** As discussed in Section 3.15, "Utilities and Service Systems," Section 3.15.3, "Environmental Impacts and Mitigation Measures," adequate water supply is available to accommodate the project consistent with this General Plan Objective.
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.	***Consistent.*** As discussed in Section 3.15, "Utilities and Service Systems," Section 3.15.2, "Environmental Settings," the facility plan report for the project, which was accepted by EID on February 9, 2022, stated that sufficient equivalent dwelling units (EDUs) of water supply were available in

Plan/ Policy/Regulation	Project Consistency
	the El Dorado Hills Water Supply Region in 2021. The facility report includes improvements needed for sufficient fire flow per EDHFPD requirements. EID has developed and maintains several water resource plans: a UWMP, an IWRMP, and the 2022 Water Supply and Demand Report to determine sufficient supply for the project to connect to the public water system.
Policy 5.2.1.3: All medium-density residential, high-density residential, multifamily residential, commercial, industrial and research and development projects may be required to connect to public water systems if reasonably available when located within Community Regions and to either a public water system or to an approved private water systems in Rural Centers.	***Consistent.*** The project would obtain public water service from EID. El Dorado Local Agency Formation Commission approval of project annexation to the EID service area would be required.
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.	***Consistent.*** The project would be required to comply with level of service standards that would address water supply and connections to EID's public services to be consistent with the General Plan. The reader is also referred to the consistency analysis for Policy 5.2.1.2.
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.	***Consistent.*** The project is not subject to Water Code Section 10910. However, a detailed analysis of water supply availability consistent with this policy is provided in Section 3.15, "Utilities and Service Systems," Section 3.15.3, "Environmental Impacts and Mitigation Measures."
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.	***Consistent.*** The project would obtain public water service from EID. El Dorado Local Agency Formation Commission approval of project annexation to the EID service area would be required.
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.	***Consistent.*** As discussed in Section 3.15, "Utilities and Service Systems," Section 3.15.3, "Environmental Impacts and Mitigation Measures," the constituents in the wastewater flow from the project to the EDHWWTP would be within the plant's treatment capacity. The project also includes off-site wastewater improvements to accommodate flows.

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Policy 5.3.1.1: High-density and multifamily residential, commercial, and industrial projects may be required to connect to public wastewater collection facilities if reasonably available as a condition of approval. In the Rural Centers of Camino/Cedar Grove/Pollock Pines, the long-term development of public sewer service shall be encouraged.	***Consistent.*** The project would be required to connect to EID's public wastewater collection facilities that would address the wastewater needs for the project.
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.	***Consistent.*** The project would be required to connect to EID's public wastewater collection facilities that would address the wastewater needs for the project. El Dorado Local Agency Formation Commission approval of project annexation to the EID service area would be required.
Objective 5.4.1: Initiate a County-wide drainage and flood management program to prevent flooding, protect soils from erosion, and minimize impacts on existing drainage facilities.	***Consistent.*** As discussed in Section 3.9, "Hydrology and Water Quality," Section 3.9.1, "Regulatory Setting," The County's Drainage Manual requires that a hydrologic and hydraulic analysis be submitted for all proposed drainage facilities. The analysis must include an introduction/background, location map/description, catchment description/delineation, hydrologic analysis, hydraulic and structural analysis, risk assessment/impacts discussion, unusual or special conditions, conclusions, and technical appendices. A Storm Drainage Evaluation was conducted based on the project design and is provided in Appendix F. The Storm Drainage Evaluation documents that proposed drainage improvements would address water quality and offset project increases in drainage flows off-site.
Policy 5.4.1.1. Require storm drainage systems for discretionary development that protect public health and safety, preserve natural resources, prevent erosion of adjacent and downstream lands, prevent the increase in potential for flood hazard or damage on either adjacent, upstream or downstream properties, minimize impacts to existing facilities, meet the National Pollution Discharge Elimination System (NPDES) requirements, and preserve natural resources such as wetlands and riparian areas.	***Consistent.*** See response to Objective 5.4.1.
Policy 5.4.1.2: Discretionary development shall protect natural drainage patterns, minimize erosion, and ensure existing facilities are not adversely impacted while retaining the aesthetic qualities of the drainage way.	***Consistent.*** With the exception of proposed restoration of the existing on-site ponds, the project design retains the on-site drainage features within proposed open space lots.
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.	***Consistent.*** As discussed in Section 3.15, "Utilities and Service Systems," Section 3.15.3, "Environmental Impacts and Mitigation Measures," there is capacity for solid waste pick up and removal from El Dorado Disposal, at the Diamond Springs MFR and the Potrero Hills Landfill to service the project.
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.	***Consistent.*** See response to Objective 5.5.2.
Objective 5.6.2: Encourage development of energy-efficient buildings, subdivisions, development, and landscape designs	***Consistent.*** Mitigation Measure 3.7-1a would require the installation of EV charging infrastructure, which would promote the adoption of EV vehicles at a higher rate compared to the Statewide average and would decrease the use of non-renewable fossil fuels associated with the project. Mitigation Measure 3.14-2 would assist in reducing VMT, and therefore fossil fuel consumption, by requiring that a Transportation Demand Management (TDM) program be implemented. Collectively, these measures would reduce fossil fuel consumption and increase renewable energy sources, consistent

Plan/ Policy/Regulation	Project Consistency
	with the requirements of Appendix F of the State CEQA Guidelines to conserve energy
Policy 5.6.2.1: Require energy conserving landscaping plans for all projects requiring design review or other discretionary approval.	***Consistent.*** As discussed in Section 3.5, "Energy," the project would be subject to energy efficiency requirements of the 2022 California Energy Code.
Policy 5.6.2.2: All new subdivisions should include design components that take advantage of passive or natural summer cooling and/or winter solar access, or both, when possible.	***Consistent.*** The project is required to comply with the California Building Code and CalGreen (discussed above) that would address passive energy conservation measures for the project design and be consistent with the General Plan.
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.	***Consistent.*** As discussed in Section 3.15, "Utilities and System Services," EID Facility Improvement letter identifies project proposed improvements for water supply would provide water flow to meet fire protection needs. Section 3.14, "Transportation," identifies that the project design provides adequate access points for emergency vehicle access.
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.	***Consistent.*** The project would be required to comply with level of service standards (discussed above) that would address fire protection and water supply standards and be consistent with the General Plan.
Objective 5.7.3: Law Enforcement: An adequate, comprehensive, coordinated law enforcement system consistent with the needs of the community.	***Consistent.*** As discussed in Section 3.13, "Public Services and Recreation," EDSO responded that they had no concerns regarding serving the project.
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.	***Consistent.*** See response to Objective 5.7.3.
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	***Consistent.*** As discussed in Section 3.13, "Public Services and Recreation," the El Dorado Hills Fire Department identified that the project is not expected to affect the ability to provide emergency services (fire and medical) and would be able to meet the minimum required response time.
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.	***Consistent.*** See response to Objective 5.7.4.
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.	***Consistent.*** See response to Objective 5.7.4.

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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.	***Consistent.*** The EHUHSD and RUSD both have adequate capacity to serve students that may move into the area as a result of the project, while maintaining a level of service consistent with the school district's capacity. The project would also pay development fees that would be directed towards the school to fund additional capacity for new students. Government Code Section 65995(h) states that the payment or satisfaction of a fee, charge, or other requirement levied or imposed under Section 17620 of the Education Code is deemed to be full and complete mitigation of the impact for the planning, use, development, or provision of adequate school facilities.
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 therefor. No development that will result in such impacts shall be approved unless: ▶ 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 ▶ The impacts to school facilities resulting from the development are mitigated, through conditions of approval, to the greatest extent allowed by State law.	***Consistent.*** See response to Objective 5.8.1.
Objective 6.2.1: Defensible Space: All existing and new development and structures shall meet "defensible space" requirements to minimize wildland fire hazards.	***Consistent.*** The proposed Generations at Green Valley Wildland Urban Interface Fire Protection Plan (Fire Safe Plan or FSP) is provided in Appendix J and addresses potential impacts resulting from wildland fire hazards and identifies measures necessary to mitigate these hazards in conformance with CCR Title 14, Sections 1270 through 1276 (Fire Safe Regulations), CCR Title 24, Part 9, Section 4903 (Plans), El Dorado County Fire Protection Standard W-002 (Wildland Interface Fire Protection Plans), and El Dorado County General Plan Policy 6.2.2.2. The FSP includes defensible space and vegetation management measures. The FSP was approved by the El Dorado Hills Fire Department Fire Marshal (Chrishana Fields) and the CAL FIRE Battalion Chief (Jeff Hoag).
Policy 6.2.1.1: Implement Fire Safe ordinance to attain and maintain defensible space through conditioning of tentative maps and in new development at the final map and/or building permit stage.	***Consistent.*** See response to Objective 6.2.1.
Policy 6.2.1.2: Coordinate with the local Fire Safe Councils, California Department of Forestry and Fire Protection (CAL FIRE), and federal and state agencies having land use jurisdiction in El Dorado County in the development of a countywide fuels management strategy.	***Consistent.*** See response to Objective 6.2.1.
Policy 6.2.1.3: Require all existing and new residential development in State Responsibility Areas (SRAs) and/or very high Fire Hazard Severity Zones (VHFHSZs) to enforce fire-resistant landscaping and defensible space requirements that meet or exceed Title 14, Code of California Regulations (CCR), Division 1.5, Chapter 7, Subchapter 2, Articles 1-5 (commencing with Section 1270) (State Minimum Fire Safe regulations) and Subchapter 3, Article 3 (commencing with Section 1299.01) (Fire Hazard Reduction around Buildings and Structures Regulations). Adequate compliance with these	***Consistent.*** See response to Objective 6.2.1. The FSP demonstrates compliance with applicable State and local defensible space requirements.

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requirements shall be determined by the local Fire Protection Districts (FPDs) or other local fire agencies, as appropriate	
Policy 6.2.1.4: Require consistency with fire code and development standards that ensure adequate defensible space clearance around all existing and new structures in compliance with the California Fire Code, Public Resources Code Section 4291 (ember-resistant zone), Government Code Section 51175-51188, CCR Title 14, Division 1.5, Chapter 7, Subchapter 3, Section 1299.03, and in the County Code of Ordinances Chapter 8.09	***Consistent.*** See response to Objective 6.2.1. The FSP demonstrates compliance with applicable State and local defensible space requirements.
Policy 6.2.1.5: Maintain and enforce the County Defensible Space Ordinance and Fire Prevention Programs and Plans in coordination with local the VHFHSZs and other fire agencies and continue to support related fire prevention programs associated with defensible space inspections as detailed in County Code of Ordinances Chapter 8.09, fire development standards, and public education	***Consistent.*** See response to Objective 6.2.1. The FSP demonstrates compliance with applicable local defensible space requirements.
Objective 6.2.2: Limitations to Development: Regulate development in areas of high and very high fire hazard as designated by the California Department of Forestry and Fire Prevention Fire Hazard Severity Zone Maps.	***Consistent.*** The project is located in a High FHSZ in a SRA for fire management. Generations at Green Valley Wildland Urban Interface Fire Protection Plan (Fire Safe Plan or FSP) is provided in Appendix J and addresses potential impacts resulting from wildland fire hazards and identifies measures necessary to mitigate these hazards. The FSP includes defensible space and vegetation management measures. The FSP was approved by the El Dorado Hills Fire Department Fire Marshal (Chrishana Fields) and the CAL FIRE Battalion Chief (Jeff Hoag).
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.	***Consistent.*** See response to Objective 6.2.2.
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 wildland-urban interface (WUI) communities within the vicinity of Federal lands that are a high risk for wildfire, as listed in the Federal Register Executive Order 13728 of May 18, 2016, unless such development can be adequately protected from wildland fire hazard, as demonstrated in a WUI Fire Safe Plan prepared by a qualified professional as approved by the El Dorado County Fire Prevention Officers Association. The WUI Fire Safe Plan shall be approved by the local Fire Protection District having jurisdiction and/or California Department of Forestry and Fire Protection. (Resolution 124- 2019, August 6, 2019)	***Consistent.*** See response to Objective 6.2.2.
Objective 6.2.3: Adequate Fire Protection: Application of uniform fire protection standards to development projects by fire district.	***Consistent.*** The proposed Generations at Green Valley Wildland Urban Interface Fire Protection Plan (Fire Safe Plan or FSP) is provided in Appendix J and addresses potential impacts resulting from wildland fire hazards and identifies measures necessary to mitigate these hazards in conformance with CCR Title 14, Sections 1270 through 1276 (Fire Safe Regulations), CCR Title 24, Part 9, Section 4903 (Plans), El Dorado County Fire Protection Standard W-002 (Wildland Interface Fire Protection Plans), and El Dorado County General Plan Policy 6.2.2.2. The FSP addresses water supply, access,

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	structural ignitability and ignition resistive building features, fire protection systems and equipment, impacts to existing emergency services, defensible space, vegetation management, emergency vehicle access, and evacuation. This plan identifies fuel modification/management zones and recommends the types and methods of treatment that will protect this project and its essential infrastructure. In addition, this FSP recommends enhanced fire protection measures that the project HOA, and individual property owners will take to reduce the probability of structural ignition during the occupancy phase of the project. The FSP was approved by the El Dorado Hills Fire Department Fire Marshal (Chrishana Fields) and the CAL FIRE Battalion Chief (Jeff Hoag).
Policy 6.2.3.1: As a requirement for approving new development, the County must find, based on information provided by the applicant and the responsible FPD that, concurrent with development, adequate emergency and peak load water supply, water flow, fire access, and firefighting personnel and equipment will be available in accordance with applicable State and local fire district standards to support fire suppression efforts.	***Consistent.*** See response to Objective 6.2.3.
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.	***Consistent.*** See response to Objective 6.2.3.
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.	***Consistent.*** See response to Objective 6.2.3. The FSP demonstrates compliance with applicable State and local fire requirements.
Policy 6.2.3.5: Identify actions to ensure noncompliant development meets current fire safe standards and road standards as defined in Title 14 CCR, Division 1.5, Chapter 7 Fire Protection, Subchapter 2, Articles 1-5, SRA Fire Safe Regulations through the WUI Fire Safe Plan review process and through collaboration with the FPDs and local fire agencies when reviewing Fire Protection Plans and provisions for new development.	***Consistent.*** See response to Objective 6.2.3.
Policy 6.2.3.6: All new development within an SRA or very high (VHFHSZs) shall prepare a Fire Protection Plan that complies with established fire safety standards. Ingress and egress to the new development will be constructed utilizing the most current State Fire Safe Regulations, Fire Code, and/or County Code that meets these minimum requirements. Key components of a Fire Protection Plan include: 1. risk analysis; 2. fire response capabilities; 3. fire safety requirements – defensible space, infrastructure, and building ignition resistance; 4. mitigation measures and design considerations for non-conforming fuel modification; 5. wildfire education, maintenance, and limitations, and 6. evacuation planning.	***Consistent.*** See response to Objective 6.2.3.

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Existing development within an SRA or VHFHSZ can meet these requirements through retro-fitting and home hardening.	
Policy 6.2.3.7: Enforce the most recent California Uniform Building Code Fire Code to safeguard life and property from the hazards of fires and explosions; dangerous conditions arising from the storage, handling, and use of hazardous materials and devices; and hazardous conditions in the use or occupancy of building or premises.	***Consistent.*** See response to Objective 6.2.3. The FSP demonstrates compliance with applicable State fire requirements.
Objective 6.2.4: Area-Wide Fuel Management Program: Reduce fire hazard through cooperative fuel management activities.	***Consistent.*** The proposed Generations at Green Valley Wildland Urban Interface Fire Protection Plan (Fire Safe Plan or FSP) is provided in Appendix J and addresses potential impacts resulting from wildland fire hazards and identifies measures necessary to mitigate these hazards in conformance with CCR Title 14, Sections 1270 through 1276 (Fire Safe Regulations), CCR Title 24, Part 9, Section 4903 (Plans), El Dorado County Fire Protection Standard W-002 (Wildland Interface Fire Protection Plans), and El Dorado County General Plan Policy 6.2.2.2. The FSP addresses water supply, access, structural ignitability and ignition resistive building features, fire protection systems and equipment, impacts to existing emergency services, defensible space, vegetation management, emergency vehicle access, and evacuation. This plan identifies fuel modification/management zones and recommends the types and methods of treatment that will protect this project and its essential infrastructure. In addition, this FSP recommends enhanced fire protection measures that the project HOA, and individual property owners will take to reduce the probability of structural ignition during the occupancy phase of the project. The FSP was approved by the El Dorado Hills Fire Department Fire Marshal (Chrishana Fields) and the CAL FIRE Battalion Chief (Jeff Hoag).
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.	***Consistent.*** See response to Objective 6.2.4.
Policy 6.2.4.2: The County shall cooperate with CAL FIRE and local FPDs 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 and will support the FPDs in tracking grants to fund fire breaks and their long-term maintenance.	***Consistent.*** See response to Objective 6.2.4.
Policy 6.2.4.3: Require fuel modification around homes and subdivision developments in SRAs or VHFHSZs by assisting the local FPDs and other local fire agencies.	***Consistent.*** See response to Objective 6.2.4.
Objective 6.3.1: Building and Site Standards. Adopt and enforce development regulations, including building and site standards, to avoid social dislocations, which refer to the disruption or displacement of communities, and protect against seismic and geologic hazards.	***Consistent.*** As discussed in Section 3.6, "Geology, Soils, and Paleontological Resources," Section 3.6.3, "Environmental Impacts and Mitigation Measures," in the General Plan EIR, this particular portion of the Foothills Fault System has a low level of seismic activity. Nevertheless, the project would be required to comply with the CBC regarding Chapter 16, Structural Design, which identifies both general building structural design requirements and specific seismic safety design requirements for projects. These seismic design criteria are also included as recommendations in the Geotechnical Study Update. Standard regulatory compliance with the CBC and incorporation of the Geotechnical Study Update recommendations would minimize the project's potential to cause direct or indirect adverse effects, including risk of loss, injury, or death, involving strong seismic shaking.

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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]) comply with the Air Quality Management District (AQMD) Rules 223, 223-1 and 223-2 requirements. The Department of Transportation and the AQMD 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.	***Consistent.*** As discussed in Section 3.2, "Air Quality," Section 3.2.3, "Environmental Impacts and Mitigation Measures," NOA is present in the project area. Mitigation Measure 3.2-1c would Implement Asbestos Dust Mitigation Consistent with EDCAQMD Rule 223-1, EDCAQMD Rule 223-2 and County Ordinance 4548 to prepare an Asbestos Dust Mitigation Plan before the start of construction and therefore would ensure compliance with all EDCAQMD rules.
Objective 6.3.2: County-Wide Seismic Hazards. Continue to evaluate seismic related hazards such as liquefaction, landslides, avalanche, and seiche, particularly in the Tahoe Basin.	***Consistent.*** See response to Objective 6.3.1.
Policy 6.3.2.4: 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.	***Consistent.*** See response to Objective 6.3.1.
Objective 6.5.1: Protection of Noise-Sensitive Development: Protect existing noise-sensitive developments (e.g., hospitals, schools, churches and residential) from new uses that would generate noise levels incompatible with those uses.	***Consistent.*** As discussed in Section, "Noise and Vibration," Section 3.11.3, "Environmental Impacts and Mitigation Measures," Mitigation Measure 3.11-3, would ensure that HVAC systems comply with stationary noise standards in General Plan Table HS-4.
Policy 6.5.1.11: The standards outlined Table HS-5, Table HS-6, and Table HS-7 shall not apply to those activities associated with actual construction of a project as long as such construction occurs between the hours of 7 a.m. and 7 p.m., Monday through Friday, and 8 a.m. and 5 p.m. on weekends, and on federally- recognized holidays. Further, the standards outlined in Tables HS-5, HS-6, and HS-7 shall not apply to public projects to alleviate traffic congestion and safety hazards.	***Consistent.*** The project would be required to comply with Mitigation Measure 3.11-1 that would limit the hours of construction activity consistent with this Policy.
Policy 6.5.1.13: When determining the significance of impacts and appropriate mitigation to reduce those impacts for new development projects, including ministerial development, the following criteria shall be taken into consideration: A. In areas in which ambient noise levels are in accordance with the standards in Table HS-3, increases in ambient noise levels caused by new non transportation noise sources that exceed 5 dBA shall be considered significant; and B. In areas in which ambient noise levels are not in accordance with the standards in Table HS-3, increases in ambient noise levels caused by new non transportation noise sources that exceed 3 dBA shall be considered significant.	***Consistent.*** As discussed in Section 3.11, "Noise and Vibration," Section 3.11.3, "Environmental Impacts and Mitigation Measures," long-term stationary impacts are assessed in conjunction with the County's noise performance standards and General Plan Policy 6.5.1.13.

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Objective 6.6.1: Regulation of Hazardous Materials. Regulate the use, storage, manufacture, transport, and disposal of hazardous materials in accordance with State and Federal regulations.	***Consistent.*** As discussed in Section 3.8, "Hazards and Hazardous Materials," Section 3.8.3, "Environmental Impacts and Mitigation Measures," Mitigation Measure 3.8-1 would address the proper removal of potential on-site 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.	***Consistent.*** See response to Objective 6.6.1.
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.	***Consistent.*** The project has completed a Phase I Environmental Site Assessment and is provided in Appendix E.
Objective 6.10.1: Encourage Water Efficiency. Promote cost-effective water conservation and water efficiency measures.	***Consistent.*** As discussed in Section 3.15, "Utilities and Service Systems," Section 3.15.3, "Environmental Impacts and Mitigation Measures," based on the EID 2022 Water Supply and Demand Report and the EID 2020 UWMP, water supply would be adequate to accommodate the project under normal-, dry-, and multiple-dry-year water conditions. Upon annexation to EID, the project would be subject to EID's water conservation and efficiency requirements. The project would construct and fund its own off-site water facility improvements.
Policy 6.10.1.3: Require new development to demonstrate that adequate water is available before project approval and to fund its fair-share costs associated with the provision of water service.	***Consistent.*** See response to Objective 6.10.1.
Objective 6.11.1: Evacuation Route Identification. Identify and analyze emergency evacuation routes and areas without at least two evacuation routes.	***Consistent.*** As identified in Chapter 2, "Project Description," the project proposes two access points to Green Valley Road as well as an emergency access/egress (EAE) at Lima Way to serve as a secondary means of emergency access and evacuation that would be gated but designed to be accessible by project residents during an evacuation order. Appendix L of the Generations at Green Valley Wildland Urban Interface Fire Protection Plan consists of the Generations at Green Valley Wildfire Evacuation Study (WES) prepared for the project. The WES was prepared per the guidance provided by CAL FIRE, El Dorado Hills Fire Department, and the El Dorado County Sheriff's Office of Emergency Services (OES). The objective of the WES is to identify evacuation routes for the project and determine if there are significant impacts in the ability to safely evacuate the project occupants and/or if the project has a significant impact on the ability of the surrounding community to concurrently evacuate during a larger area wildfire evacuation scenario. Based on the WES, implementation of the project would not create traffic congestion that extends into the evacuation zone and would not substantially impede evacuation. El Dorado County OES

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	has identified the need for special traffic signal operations during an evacuation to improve traffic flow along the Green Valley Road corridor that would be implemented through Mitigation Measure 3.17-1.
Policy 6.11.1.1: Continue to improve transportation corridors that support effective evacuation routes and access for the public and emergency responders by identifying residential developments in hazard areas that do not have at least two emergency evacuation routes and work with affected residents to help prepare them to anticipate their evacuation alternatives (e.g., public transit, carpooling, shelter in place)	***Consistent.*** See response to Objective 6.11.1.
Objective 6.11.2: Evacuation Route Maintenance**.** Ensure viability of future use of evacuation routes.	***Consistent.*** See response to Objective 6.11.1.
Policy 6.11.2.1: Development shall be served by a street system with at least two evacuation routes capable of carrying peak load traffic and have sufficient capacity to meet project needs, or they must provide the necessary capacity to ensure the development has adequate fire protection and safe ingress and egress routes in conformance with the California Fire Safe Regulations (Section 1273 and 1274) of the California Code of Regulations – Title 14, Division 1.5, Chapter 7, Articles 2 and 3).	***Consistent.*** See response to Objective 6.11.1. The FSP also addressed emergency vehicle access in addition to evacuation.
Policy 6.11.2.2: Construction of new roads, streets, and evacuation routes must be adequate in terms of width, turning radius, and grade to facilitate access by firefighting apparatus. Priorities for road improvements will be based on evacuation accessibility	***Consistent.*** As described in Chapter 2, "Project Description," the project would include an emergency access/egress (EAE) at Lima Way to serve as a secondary means of emergency access and evacuation that would be gated but designed to be accessible by project residents during an evacuation order. There would also be two emergency vehicle access (EVA) road connections at Marden Drive and at East Green Springs Road (to the south) that would be stubbed to the property line for emergency vehicle use. While the Marden Drive EVA would physically connect to Marden Drive, East Green Springs Road would need to be extended off-site for approximately 50 feet to connect to the project's EVA at the property line. This connection to Green Springs Ranch would only occur if the Green Springs Ranch Association chooses to complete the extension in the future and at their discretion. These accesses would meet the design standards for gated developments as described in Section 130.30.090(D) of the El Dorado County Code of Ordinances and the El Dorado Hills Fire Department Ordinance 2022-01
Policy 6.11.2.4: Continue to coordinate with the County Sheriff's Department, CAL FIRE, local FPDs, and other fire agencies to identify, assess, and maintain evacuation routes to support the adequate capacity, safety, and viability of those routes under a range of emergency scenarios. Identify designated evacuation routes that are not compliant with Fire Safe Regulations (14 CCR Section 1270.00) for roadway standards and develop a plan to bring those roads into conformance to promote adequate and safe accessibility in communities	***Consistent.*** See response to Objective 6.11.1.
Objective 7.1.2: Erosion/Sedimentation - Minimize soil erosion and sedimentation.	***Consistent.*** As discussed in Section 3.9, "Hydrology and Water Quality," Section 3.9, "Environmental Impacts and Mitigation Measures," the project would be required to comply with State and County standards during construction, including the development and implementation of a storm water pollution prevention plan (SWPPP).

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Policy 7.1.2.2: Discretionary and ministerial projects that require earthwork and grading, including cut and fill for roads, shall be required to minimize erosion and sedimentation, conform to natural contours, maintain natural drainage patterns, minimize impervious surfaces, and maximize the retention of natural vegetation. Specific standards for minimizing erosion and sedimentation shall be incorporated into the Zoning Ordinance.	***Consistent.*** The project would be required to comply with the County's SWMP and project SWPPP (discussed under Objective 7.1.2) that would address minimizing erosion and sedimentation to be consistent with the General Plan and County Ordinances.
Objective 7.3.2: Water Quality - Maintenance of and, where possible, improvement of the quality of underground and surface water.	***Consistent.*** The project would be required to comply with the County's SWMP and project SWPPP (discussed under Objective 7.1.2) that would address minimizing erosion and sedimentation to be consistent with the General Plan and County Ordinances for project construction and operation.
Policy 7.3.2.2: Projects requiring a grading permit shall have an erosion control program approved, where necessary.	***Consistent.*** The project would be required to comply with the County's SWMP and project SWPPP (discussed under Objective 7.1.2) that would address minimizing erosion and sedimentation to be consistent with the General Plan and County Ordinances.
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.	***Consistent.*** With the exception of proposed restoration of the existing on-site ponds, the project design retains the on-site drainage features within proposed open space lots. As discussed in Section 3.4, "Biological Resources," Section 3.4.3, "Environmental Impacts and Mitigation Measures," implementation of Mitigation Measures 3.4-3a and 3.4-3b would reduce significant impacts on sensitive natural communities and riparian habitat to a less-than-significant level by requiring compensation for permanent loss of these habitats such that there is no net loss, potentially including a Streambed Alteration Agreement with CDFW. Additionally, implementation of Mitigation Measure 3.4-4 would reduce significant impacts on state and federally protected wetlands to a less-than-significant level by requiring permitting and compensation for unavoidable impacts on state or federally protected wetlands such that there is no net loss of these resources.
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 US Army Corps of Engineers (USACE) Wetland Delineation Manual.	***Consistent.*** The project would be required to comply with the Mitigation Measures 3.4-3a, 3.4-3b, and 3.4-4 (discussed above under Objective 7.3.3) that would address impacts on protected wetlands to be consistent with the General Plan and County standards.
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.	***Consistent.*** With the exception of proposed restoration of the existing on-site ponds, the project design retains the on-site drainage features within proposed open space lots. The project would be required to comply with Mitigation Measures 3.4-3a, 3.4-3b, and 3.4-4 (discussed above under Objective 7.3.3) that would address impacts on protected wetlands to be consistent with the General Plan and County standards.
Objective 7.3.4: Drainage - Protection and utilization of natural drainage patterns	***Consistent.*** With the exception of proposed restoration of the existing on-site ponds, the project design retains the on-site drainage features within proposed open space lots. The project would be required to comply with Mitigation Measures 3.4-3a, 3.4-3b, and 3.4-4 (discussed above) that would address impacts on protected wetlands to be consistent with the General Plan and County standards.
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	***Consistent.*** With the exception of proposed restoration of the existing on-site ponds, the project design retains the on-site drainage features within proposed open space lots. The project would be required to comply with the Mitigation Measures 3.4-3a, 3.4-3b, and 3.4-4 (discussed above) that

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	would address impacts on protected wetlands to be consistent with the General Plan and County Ordinances.
Policy 7.3.4.2: Modification of natural stream beds and flow shall be regulated to ensure that adequate mitigation measures are utilized.	***Consistent.*** The project would be required to comply with the Mitigation Measures 3.4-3a, 3.4-3b, and 3.4-4 (discussed above) that would address impacts on protected wetlands to be consistent with the General Plan and County Ordinances.
Objective 7.4.1: Pine Hill Rare Plant Species - The County shall protect Pine Hill rare plant species and their habitats consistent with Federal and State laws.	***Consistent.*** As discussed in Section 3.4, "Biological Resources," Section 3.4.3, "Environmental Impacts and Mitigation Measures," implementation of Mitigation Measure 3.4-1 would reduce the significant impact on special-status plants to a less-than-significant level by requiring protocol-level surveys for special-status plants and implementation of avoidance measures and compensation for impacts on special-status plants if they are present on the main project site and off-site improvement areas. Application of this mitigation measure to the project would be consistent with General Plan Objective 7.4.1 and Policy 7.4.2.8.
Policy 7.4.1.1: The County shall continue to provide for the permanent protection of the eight sensitive plant species known as the Pine Hill endemics and their habitat through the establishment and management of ecological preserves consistent with County Code Chapter 130.71 and the USFWS Gabbro Soil Plants for the Central Sierra Nevada Foothills Recovery Plan (USFWS 2002).	***Consistent.*** The project is located outside of the ecological preserves.
Objective 7.4.2: Identify and Protect Resources - Identification and protection, where feasible, of critical fish and wildlife habitat including deer winter, summer, and fawning ranges; deer migration routes; stream and river riparian habitat; lake shore habitat; fish spawning areas; wetlands; wildlife corridors; and diverse wildlife habitat.	***Consistent.*** Section 3.4, "Biological Resources, Section 3.4.3, "Environmental Impacts and Mitigation Measures," identifies residential development surrounding the project site makes it unlikely that the project site functions as a critical habitat linkage for wildlife.
Policy 7.4.2.8: Conserve contiguous blocks of important habitat to offset the effects of increased habitat loss and fragmentation elsewhere in the County through a Biological Resource Mitigation Program (Program). The Program will result in the conservation of: 1. Habitats that support special status species; 2. Aquatic environments including streams, rivers, and lakes; 3. Wetland and riparian habitat; 4. Important habitat for migratory deer herds; and 5. Large expanses of native vegetation. (see full text in Section 3.4.1, "Regulatory Setting.")	***Consistent.*** Implementation of Mitigation Measure 3.4-2a through 3.4-2j would reduce the potential impact on all endangered or threatened species that may occur in the project area to a less-than significant level through protocol level survey during specific breeding times based on species life cycle and seasonal habits. These species are California red-legged frog, foothill yellow-legged frog, western pond turtle, burrowing owl, special-status birds, raptors, and other native nesting birds, Crotch's bumble bee, monarch butterflies, American badger, pallid bat, Townsend's big-eared bat, and western red bat. The reader is referred to Section 3.4.3, "Environmental Impacts and Mitigation Measures" for the mitigation language to comply with federal, states, and general plan policies. Implementation of Mitigation Measures 3.4-3a and 3.4-3b would reduce significant impacts on sensitive natural communities and riparian habitat to a less-than-significant level by requiring compensation for permanent loss of these habitats such that there is no net loss, potentially including a Streambed Alteration Agreement with CDFW. Application of these mitigation measures to the project would be consistent with General Plan Objective 7.3.3 and associated Policy 7.3.3.5, Objective 7.3.4 and associated Policies 7.3.4.1 and 7.3.4.2, and Objective 7.4.2 and associated Policy 7.4.2.8. Additionally, implementation of Mitigation Measure 3.4-4 would reduce significant impacts on state and federally protected wetlands to a less-than-significant level by requiring permitting and compensation for unavoidable impacts on state or federally protected wetlands such that there is no net loss of these resources. Application of this mitigation measure to the project would be consistent

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	with General Plan Objective 7.3.3 and associated Policies 7.3.3.1 and 7.3.3.5, Objective 7.3.4 and associated Policies 7.3.4.1 and 7.3.4.2, and Objective 7.4.2 and associated Policy 7.4.2.8.
Policy 7.4.4.4: For all new development projects or actions that result in impacts to oak woodlands and/or individual native oak trees, including Heritage Trees, the County shall require mitigation as outlined in the El Dorado County Oak Resources Management Plan (ORMP). The ORMP functions as the oak resources component of the County's biological resources mitigation program, identified in Policy 7.4.2.8.	***Consistent.*** The project would be required to comply with the County's ORMP and Biological Resource Policy Updates (discussed above) that would address conservation of biological resources and be consistent with the General Plan and County Ordinances.
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.	***Consistent.*** Section 3.3, "Archaeological and Historical Resources," identifies that the project was evaluated in the *Cultural Resources Study of the Generations at Green Valley Project,* as well as subsequent field studies of proposed off-site infrastructure improvements. Paleontological resources are addressed in mitigated in Section Geology, Soils, and Paleontological Resources, Section 3.6.3, "Environmental Impacts and Mitigation Measures. "The project would implement MM 3.3-1a through 3.3-1c and 3.6-5a and 3.6-5b that would address resource protection consistent with the General Plan.
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.	***Consistent.*** See response to Policy 7.5.1.3.
Objective 7.5.2: Visual Integrity - Maintenance of the visual integrity of historic resources.	***Consistent.*** See response to Policy 7.5.1.3.
Policy 7.5.2.4: The County shall prohibit the modification of all National Register of Historic Places (NRHP)/California Register of Historical Resources (CRHR) listed properties that would alter their integrity, historic setting, and appearance to a degree that would preclude their continued listing on these registers. If avoidance of such modifications on privately owned listed properties is deemed infeasible, mitigation measures commensurate with NRHP/CRHR standards shall be formulated in cooperation with the property owner.	***Consistent.*** See response to Policy 7.5.1.3.
Objective 9.1.1: Park Acquisition and Development. The County shall assume primary responsibility for the acquisition and development of regional parks and assist in the acquisition and development of neighborhood and community parks to serve County residents and visitors.	***Consistent.*** The project proposes the dedication of a 4-acre park site to the El Dorado Hills CSD and would pay in-lieu fees to cover the 0.385 remaining acres for the project to remain in compliance with local regulations.
Policy 9.1.1.1: The County shall assist in the development of regional, community, and neighborhood parks, ensure a diverse range of recreational opportunities at a regional, community, and neighborhood level, and provide park design guidelines and development standards for park development. The following national standards shall be used as guidelines [see Table 3.13-2] for the acquisition and development of park facilities. The parkland dedication/in-lieu fees shall be directed towards the purchase and funding of neighborhood and community parks.	***Consistent.*** See response to Objective 9.1.1.

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Objective 9.2.2: Quimby Act. Land dedicated to the County under the Quimby Act and Quimby in-lieu fees shall continue to be used primarily to meet neighborhood park needs but may assist in meeting the community park standards as well.	***Consistent.*** See response to Objective 9.1.1.
Policy 9.2.2.2: New development projects creating community or neighborhood parks shall provide mechanisms (e.g., homeowners associations, or benefit assessment districts) for the ongoing development, operation, and maintenance needs of these facilities if annexation to an existing parks and recreation service district/provider is not possible.	***Consistent.*** See response to Objective 9.1.1. The project's HOA would maintain the proposed clubhouse site.
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.	***Consistent.*** As discussed in Section 3.12, "Population and Housing," Section 3.12.3, "Environmental Impacts and Mitigation Measures," The project would comply with the County's General Plan policy, HO-1.2, by providing an adequate number of housing units for the anticipated population growth of the county.
Policy HO-1.5: The County shall direct higher density residential development to Community Regions and Rural Centers.	***Consistent.*** As discussed in Section 3.12, "Population and Housing," Section 3.12.3, "Environmental Impacts and Mitigation Measures," The project would comply with the County's General Plan policy, HO-1.5, requesting a denser amount of housing than is currently allowed for in the General Plan Zoning Code for the project site in order to contribute to the number of housing units for the anticipated population growth of the county.
Policy TC-1p: The County shall encourage street designs for interior streets within new subdivisions that minimize the intrusion of through traffic on pedestrians and residential uses while providing efficient connections between neighborhoods and communities.	***Consistent.*** As discussed in Section 3.14, "Transportation," Section 3.14.3, " Environmental Impacts and Mitigation Measures," the proposed internal roadway design would enhance pedestrian access to and through the project site.
Policy TC-9a: Incorporate circulation concepts that accommodate all users in new developments as appropriate.	***Consistent.*** The project includes trails and street designs that accommodate all users and provide safe connections for pedestrians' accessibility parks and recreation services consistent with the General Plan.
Policy TC-5a: Sidewalks and curbs shall be required throughout residential subdivisions, including land divisions created through the parcel map process, where any residential lot or parcel size is 10,000 square feet or less.	***Consistent.*** As discussed in Section 3.14, "Transportation," Section 3.14.3, "Environmental Impacts and Mitigation Measures," the project would include sidewalks along project streets.
Policy TC-5c: Roads adjacent to schools or parks shall have curbs and sidewalks.	***Consistent.*** See response to Policy TC-9a.
Policy TC-4b: The County shall construct and maintain bikeways in a manner that minimizes conflicts between bicyclists and motorists.	***Consistent.*** As discussed in Section 3.14, "Transportation," Section 3.14.3, "Environmental Impacts and Mitigation Measures," the project would minimize the opportunity for conflicts between vehicles and alternative modes of transportation through design. All intersections and driveways along existing and proposed roadways would be required to provide adequate sight distance in accordance with Section 3(B) of the County DISM (El Dorado County 1990: 23).
El Dorado County Ordinances	
Chapter 130.34.020: Outdoor lighting Ordinance.	***Consistent.*** As discussed in Section 3.1, "Aesthetics," Section 3.1.3, "Environmental Impacts and Mitigation Measures," features to reduce excess nighttime light and glare, such as the use of directional shielding and automatic shutoff or motion sensors, would be incorporated into the project design.

Plan/ Policy/Regulation	Project Consistency
Chapter 110.14: Grading, Erosion, and Sediment Control Ordinance	***Consistent.*** As discussed in Section 3.6, "Geology, Soils, and Paleontological Resources, Section 3.6.3, "Environmental Impacts and Mitigation Measures," the project would be required to comply with the County Code of Ordinances Chapter 110.14, Grading, Erosion, and Sediment Control Ordinance, which requires grading and drainage plans to be developed for major development projects, as well as compliance with Chapter 4 of the County Land Development Manual, which sets forth standards and procedures for grading activities in the county.
Chapter 110.32: On-Site Wastewater Treatment Systems	***Consistent.*** As discussed in Section 3.6, "Geology, Soils, and Paleontological Resources," Section 3.6.3, "Environmental Impacts and Mitigation Measures," the project would be required to comply with Chapter 110.32 in the County Code of Ordinances and OWTS Manual, which would ensure that construction and operation of the project would not have a significant adverse wastewater disposal or sewer system impact on existing conditions. The project has addressed compliance in part with the preparation of the Septic Feasibility Study.
Chapter 120.12: Conditions and Requirements	***Consistent.*** As discussed in Section 3.13, "Public Services and Recreation," Section 3.13.3, "Environmental Impacts and Mitigation Measures," Section 120.12.090 establishes park dedication requirements for new development projects. When a subdivision proposes or creates lots, the Board of Supervisors may require the dedication of land and/or a payment of fees in lieu of park and recreation development as a condition of approval of the tentative subdivision map if the dedicated park land would conform with the goals, objectives, and standards contained in the recreation element of the general plan and any applicable specific plans and the dedicated land would serve park and recreation facilities for the proposed project, in the case of this project the ratio would be required to be 5.0 acres of parks and recreation land per 1,000 residents, as stated in General Plan Policy 9.1.1.1. The project would build a 4.0 acre community park and make up for the additional 0.385 required acres through in-lieu fees.
Chapter 12.08.080: Roach Encroachments	***Consistent.*** The project will obtain encroachment permits from El Dorado County before any work begins within El Dorado County right-of-way.
Chapter 130.37.50: Acoustic Analysis Required	***Consistent.*** An acoustic analysis was prepared for the project as identified in Section 3.11, "Noise and Vibration."
El Dorado LAFCO Policies	
Policy 3.2.16: When evaluating environmental impacts discovered during the Initial Study process, LAFCO will identify such impacts as potentially significant and adverse if: ▶ Build-out of the proposed project may cause service levels to decline below established standards, costs of service provision to rise substantially to the detriment of service levels, or cause those currently receiving service to receive reduced or inadequate services especially when such change may cause adverse health and safety or other physical impacts; ▶ Build-out of the proposed project may cause the infrastructure capacity of a service provider to exceed planned and safe limits especially when such change may cause adverse health and safety or other physical impacts; ▶ The proposed project includes or plans for infrastructure capacity, especially water and sewer lines, that exceed the needs of the proposed project and may be used to serve	***Consistent.*** The project would maintain El Dorado County General Plan level of service standards for public services and utilities. The project includes plans for annexation to the EID service area as well as water supply, sewer, and electrical improvements that would support the project and allow for surrounding existing developments to maintain their current level of service for water, sewer, and electrical services, see Section 3.15, "Utilities and Service Systems," 3.15.3, "Utilities and Service Systems." Public services, such as fire protection services and park and recreation facilities would also be able to serve the project as detailed in Section 3.13, "Public Services and Recreation," Section 3.13.3, "Environmental Impacts and Mitigation Measures." The project is within the EDHCSD Sphere of Influence. The project is not on important agriculture land or open space land that is open to the public. The project plan includes nine open space lots that would preserve 57.58 acres of oak trees, woodland areas, and wetland features. The project is surrounded by residential projects on its western and southern boundaries, and its larger lot properties in the project design are on the exterior of the project site to soften the transition to the more rural

Plan/ Policy/Regulation	Project Consistency
areas not planned for development, especially those containing prime agricultural land, mineral, sensitive plant and wildlife or other important resources (*note – this circumstance does not occur with this project*); ▶ The proposed plan could cause health and safety or other physical impacts because a service provider is incapable of providing service, the proposal has an illogical boundary, or elements needed to provide service (water supply, treatment facilities, equipment, energy) are not available, or stressed beyond capacity. ▶ The proposed project is substantially inconsistent with applicable Sphere of Influence Plans, long range and area service plans, phased land use plans of any city or county, or resource conservation plans of the state or federal government. ▶ In the case of Sphere of Influence and area of service plans, the Environmental Coordinator reviews the appropriate plans and determines whether the level of significance warrants additional review. In the case of public agency land use or resource plans, the affected agency shall provide specific information regarding the nature and substance of the project's potential impacts upon its plans or programs. ▶ The proposed project may induce substantial growth on important agricultural and open space lands because it would: ▪ Permit the extension of, or require, infrastructure such as flood control levees or water diversions, electrical, water or sewer lines, especially trunk lines, roadways or other public facilities that would permit new development in a substantial area currently constrained from development; ▪ Be adversely and substantially inconsistent with the agricultural, open space, resource conservation or preservation, growth management, trip reduction, air quality improvement or other plans, policies or Ordinances of the General, Community, Specific or other Plan of the land use jurisdiction responsible for the project site or vicinity. ▪ Cause significant adverse cumulative impacts when considered in conjunction with other recent, present and reasonably foreseeable projects; ▪ Result in substantial noncontiguous development which, in turn, results in adverse physical impacts; ▪ Have no need for service and the proposed project adversely affects important public resources or the public health and safety; ▪ Adversely impact animal or plant species either listed as, or determined to be, endangered, rare, or threatened as provided in §15380; or	lands to the north and east of the project site. There is the potential for the project to impact special status species, however with the mitigation measures listed in Section 3.4, "Biological Resources," these impacts would be less than significant.

Plan/ Policy/Regulation	Project Consistency
▪ Be identified as potentially significant when completing the Initial Study checklist adopted as Exhibit A of LAFCO's CEQA procedures.	
Policy 3.3.2.2: If service cannot be provided without expanding service capacity or constructing infrastructure (other than at parcel connections to service), then the following information shall be provided: ▶ A description of any required facility or infrastructure expansions or other necessary capital improvements; ▶ The likely schedule for completion of the expanded capacity project, the viability of the needed project, and the relation of the subject project to the overall project and project time line; ▶ A list of required administrative and legislated processes, such as CEQA review or State Water Resources Board allocation permits, including assessment of likelihood of approval of any permits and existence of pending or threatened legal or administrative challenges if known; ▶ The planned total additional capacity; ▶ The size and location of needed capital improvements; ▶ The proposed project cost, financing plan and financing mechanisms including a description of the persons or properties who will be expected to bear project costs; and ▶ Any proposed alternative projects if the preferred project cannot be completed (include information in letters "a" through "f" for each proposed alternative).	***Consistent.*** The project has provided specific descriptions of required utility, facility, and infrastructure plans that would be needed to provide services to the project area as identified in Section 3.13, Public Services and Recreation," and Section 3.15, "Utilities and Service Systems." Off-site water and wastewater improvements would be sized to accommodate the project.
Policy 3.4.1: Consistency with General and Specific Plans. For the purposes of this policy, a project is consistent if the type and level of services to be provided are consistent with and appropriate to the applicable General or Specific Plan land use designations and document text, and the applicable General or Specific Plan is legally adequate and internally consistent. The Commission will not approve projects that are inconsistent with the applicable General or Specific Plan unless the following circumstances are shown to exist: The site is fully developed and located in an existing developed area where district or city facilities are present and found by LAFCO to be sufficient for service and where the Commission determines that the change of organization or reorganization will not induce growth in the area. The site is fully developed and located in an existing developed area where LAFCO finds that the public interests of health, safety, and welfare would best be served, or that clear and present health or safety hazards could be mitigated, by the proposal. The site is located in an undeveloped area where disapproval would cause a loss of service to existing service users.	***Consistent.*** While the project is proposing to amend its current General Plan land use designations to allow for more dense residential development, the project is located within the El Dorado Hills Community Region that is designated for urban and suburban development and associated public service and utility provision. Impacts on fire protection services and parks and recreation facilities was discussed in Section 3.13, "Public Services and Recreation," and would be consistent with LAFCO capacity policies through facility improvements and development fees. Impacts of the project on the wastewater system is evaluated in Section 3.15, "Utilities and Service Systems," and the project includes plans for capital improvement projects to the EID wastewater system off-site from the project area to service the project and not exceed the capacity of the existing public wastewater service. Additionally, Section 3.10, "Land Use and Planning, and Agriculture and Forestry Resources" details consistency with the El Dorado County General Plan and El Dorado County Code of Ordinances.
Policy 3.9.3: Lands to be annexed which are within an adopted Sphere of Influence shall be physically contiguous to the boundaries of the annexing agency except under one of the following circumstances (§56119):	***Consistent.*** As described in Section 3.13, "Public Service and Recreation," and Section 3.15, "Utility and Service Systems," the project area is within sphere of influences for the El Dorado Hills Fire Department, El Dorado Hills Community Services District, and EID.

Plan/ Policy/Regulation	Project Consistency
▶ Existing developed areas where LAFCO determines that interests of public health, safety, and welfare would best be served by the extension of the service, or which represent clear or present health or safety hazards that could be mitigated by the proposal and city or district facilities are present and sufficient for service. ▶ Existing developed areas where city or district facilities are present and sufficient for service, and where the Commission determines that the annexation will not induce growth.	
Policy 3.9.7: The resulting boundary configuration shall not produce areas that are difficult to serve (§56668, §56001).	***Consistent.*** As described in Section 3.13, "Public Services and Recreation," and Section 3.14, "Transportation," EA roads and access points from Green Valley Road would allow for adequate service to the project site. Additionally, the project site is in a contiguous boundary from agencies that would require annexation, and would not create an area that is difficult to serve.
Policy 6.1.7: Prior to annexation to a city or special district, the petitioners shall demonstrate that the need for governmental services exists, the annexing agency is capable of providing service, that a plan for service exists, and that the annexation is the best alternative to provide service (§56700, §56668)	***Consistent.*** The project would be required to comply with level of service standards and agency requirements to gain annexation (discussed above), which would be consistent with the LAFCO policies. Project-proposed residential development densities would require public services and utility service.

Appendix H

Noise Modeling Data

Gnerations at Green Valley

Location	Distance to Nearest Receptor in feet	Combined Predicted Noise Level (L_{eq} dBA)
Residential Threshold	31	90.0
Nearest Resiential to Center of Site	600	64.2

Equipment	Reference Emission Noise Levels (L_{max}) at 50 feet[1]	Usage Factor[1]
Grader	85	0.4
Excavator	85	0.4
Dozer	85	0.4

Ground Type	hard
Source Height	8
Receiver Height	5
Ground Factor[2]	0.00

Predicted Noise Level [3]	L_{eq} dBA at 50 feet[3]
Grader	81.0
Excavator	81.0
Dozer	81.0

Combined Predicted Noise Level (L_{eq} dBA at 50 feet)
85.8

Sources:

[1] Obtained from the FHWA Roadway Construction Noise Model, January 2006. Table 1.

[2] Based on Figure 6-5 from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 6-23).

[3] Based on the following from the Federal Transit Noise and Vibration Impact Assessment, 2006 (pg 12-3).

L_{eq}(equip) = E.L.+10*log (U.F.) - 20*log (D/50) - 10*G*log (D/50)

Where: E.L. = Emission Level;

U.F.= Usage Factor;

G = Constant that accounts for topography and ground effects (FTA 2006: pg 6-23); and

D = Distance from source to receiver.

Distance Propagation Calculations for Stationary Sources of Ground Vibration

KEY: Orange cells are for input.

Grey cells are intermediate calculations performed by the model.

Green cells are data to present in a written analysis (output).

STEP 1: Determine units in which to perform calculation.

— If vibration decibels (VdB), then use Table A and proceed to Steps 2A and 3A.

— If peak particle velocity (PPV), then use Table B and proceed to Steps 2B and 3B.

STEP 2A: Identify the vibration source and enter the reference vibration level (VdB) and distance.

STEP 3A: Select the distance to the receiver.

Table A. Propagation of vibration decibels (VdB) with distance

Noise Source/ID	Reference Noise Level			Attenuated Noise Level at Receptor		
	vibration level (VdB)	@	distance (ft)	vibration level (VdB)	@	distance (ft)
Roller	94	@	25	80.0	@	73
large bull dozer	87.0	@	25	80.2	@	42

The Lv metric (VdB) is used to assess the likelihood for vibration to result in human annoyance.

STEP 2B: Identify the vibration source and enter the reference peak particle velocity (PPV) and distance.

STEP 3B: Select the distance to the receiver.

Table B. Propagation of peak particle velocity (PPV) with distance

Noise Source/ID	Reference Noise Level			Attenuated Noise Level at Receptor		
	vibration level (PPV)	@	distance (ft)	vibration level (PPV)	@	distance (ft)
Roller	0.210	@	25	0.198	@	26
large bull dozer	0.089	@	25	0.191	@	15

The PPV metric (in/sec) is used for assessing the likelihood for the potential of structural damage.

Notes:

Computation of propagated vibration levels is based on the equations presented on pg. 185 of FTA 2018. Estimates of attenuated vibration levels do not account for reductions from intervening underground barriers or other underground structures of any type, or changes in soil type.

Federal Transit Association (FTA). 2018 (September). Transit Noise and Vibration Impact Assessment Manual. FTA Report https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-

Attenuation Calculations for Stationary Noise Sources

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

STEP 1: Identify the noise source and enter the reference noise level (dBA and distance).

STEP 2: Select the ground type (hard or soft), and enter the source and receiver heights.

STEP 3: Select the distance to the receiver.

Noise Source/ID	Reference Noise Level			Attenuation Characteristics				Attenuated Noise Level at Receptor		
	noise level (dBA)	@	distance (ft)	Ground Type (soft/hard)	Source Height (ft)	Receiver Height (ft)	Ground Factor	noise level (dBA)	@	distance (ft)
HVAC heat pump	69	@	3	hard	8	5	0.00	55	@	15
HVAC fan coils	60	@	3	hard	8	5	0.00	46	@	15
Normal voice Lot A, Leq	60.0	@	3	hard	8	5	0.00	20		285
Raised Voice Lot A, Lmax	66.0	@	3	hard	8	5	0.00	26		285
Normal voice Lot C, Leq	60.0	@	3	hard	8	5	0.00	25		165
Raised Voice Lot C, Lmax	66.0	@	3	hard	8	5	0.00	31		165
Normal voice Lot D, Leq	60.0	@	3	hard	8	5	0.00	36		50
Raised Voice Lot D, Lmax	66.0	@	3	hard	8	5	0.00	42		50
Normal voice Lot F, Leq	60.0	@	3	hard	8	5	0.00	26		150
Raised Voice Lot F, Lmax	66.0	@	3	hard	8	5	0.00	32		150
Normal voice Lot F, Leq	60.0	@	3	hard	8	5	0.00	24		180
Raised Voice Lot F, Lmax	66.0	@	3	hard	8	5	0.00	30		180
Normal voice Lot I, Leq	60.0	@	3	hard	8	5	0.00	27		130
Raised Voice Lot I, Lmax	66.0	@	3	hard	8	5	0.00	33		130
Normal voice Clubhouse, Leq	60.0	@	3	hard	8	5	0.00	11		890
Raised Voice Clubhouse, Lmax	66.0	@	3	hard	8	5	0.00	17		890
Normal voice Clubhouse, Leq	60.0	@	3	hard	8	5	0.00	13		700
Raised Voice Clubhouse, Lmax	66.0	@	3	hard	8	5	0.00	19		700
Pickleball Clubhouse, Leq	66.9	@	10	hard	8	5	0.00	28		890
Pickleball Clubhouse, Lmax	76.9	@	10	hard	8	5	0.00	38		890
Pickleball Clubhouse, Leq	66.9	@	10	hard	8	5	0.00	30		700
Pickleball Clubhouse, Lmax	76.9	@	10	hard	8	5	0.00	40		700
Mechanized Trimmer, Leq	81.0	@	3	hard	8	5	0.00	55		57
Leaf blower, Leq	77.0	@	3	hard	8	5	0.00	55		36

Notes:

Estimates of attenuated noise levels do not account for reductions from intervening barriers, including walls, trees, vegetation, or structures of any type.

Computation of the attenuated noise level is based on the equation presented on pg. 176 and 177 of FTA 2018.

Computation of the ground factor is based on the equation presentd in Table 4-26 on pg. 86 of FTA 2018, where the distance of the reference noise leve can be adjusted and the usage factor is not applied (i.e., the usage factor is equal to 1).

Sources:

Federal Transit Association (FTA). 2018 (September). Transit Noise and Vibration Impact Assessment. Washington, D.C. Available: <http://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf>Accessed: March 5, 2020.

Traffic Noise Spreadsheet Calculator

Project:

Noise Level Descriptor: Ldn
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor:

		Segment Description and Location		Input										Output				
						Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics						Ldn,	Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	(dBA)[5,6,7]	75 dBA	70 dBA	65 dBA	60 dBA
	Existing Conditions																	
1	El Dorado Hills Boulevard	Francisco Drive	Green Valley Road	5,450	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	64.2	4	13	42	133
2	El Dorado Hills Boulevard	Harvard Way	Francisco Parkway	15,650	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.8	12	38	120	381
3	El Dorado Hills Boulevard	Wilson Boulevard	Harvard Way	20,590	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.0	16	50	158	501
4	El Dorado Hills Boulevard	Serrano Parkway	Wilson Boulevard	20,360	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.0	16	50	157	495
5	El Dorado Hills Boulevard	Saratoga Way	Serrano Parkway	22,090	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.3	17	54	170	537
6	El Dorado Hills Boulevard	South end of Saratoga Way/US 50 WB Ramp	North end of Sara	23,220	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.5	18	56	179	565
7	Latrobe Road	US 50 EB Ramp	US 50 WB Ramp	31,400	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	71.8	24	76	242	764
8	Silva Valley Parkway	Tong Road	Serrano Parkway	15,740	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.8	12	38	121	383
9	Silva Valley Parkway	Serrano Parkway	Harvard Way	12,080	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.7	9	29	93	294
10	Silva Valley Parkway	HArvard Way	Appian Way	7,530	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	65.6	6	18	58	183
11	Silva Valley Parkway	Appian Way	Green Valley Road	6,370	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	64.9	5	15	49	155
12	Green Valley Road	Sophia Parkway	Francisco Drive	22,840	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	73.0	32	101	318	1006
13	Green Valley Road	Francisco Drive	El Dorado Hills Boulevard	15,100	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	71.2	21	66	210	665
14	Green Valley Road	El Dorado Hills Boulevard	Silva Valley Parkway	15,110	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	71.2	21	67	210	665
15	Green Valley Road	Silva Valley Parkway	Loch Way	10,960	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.8	15	48	153	483
16	Green Valley Road	Loch Way	Malcolm Dixon Cutoff	10,700	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.7	15	47	149	471
17	Green Valley Road	Malcolm Dixon Cutoff	Malcolm Dixon Road	10,500	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.7	15	46	146	462
18	Green Valley Road	Project Driveway 2	Deer Valley Road	10,410	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.6	14	46	145	458
19	Green Valley Road	Deer Valley Road	Silver Springs Parkway	10,800	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.8	15	48	150	476
20	Green Valley Road	Silver Springs Parkway	Bass Lake Road	11,390	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.0	16	50	159	502
21	Green Valley Road	Bass Lake Road	Cambridge Road	12,170	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.3	17	54	169	536
22	Green Valley Road	Cambridge Road	Cameron Park Drive	10,030	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.5	14	44	140	442
23	Green Valley Road	Malcolm Dixon Road	Project Driveway 1	10,410	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.6	14	46	145	458
24	Green Valley Road	Project Driveway 1	Project Driveway 2	10,410	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.6	14	46	145	458
25	Francisco Drive	Green Valley Road	El Dorado Hills Boulevard	13,430	40	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.7	7	23	74	233
26	Harvard Way	El Dorado Hills Boulevard	Silva Valley Parkway	14,550	35	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	65.5	6	18	56	176
27	Serrano Parkway	El Dorado Hills Boulevard	Silva Valley Parkway	9,270	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.5	7	23	71	226

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project:

Noise Level Descriptor: Ldn
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor:

		Segment Description and Location		Input										Output				
						Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics							Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	Ldn, (dBA)[5,6,7]	75 dBA	70 dBA	65 dBA	60 dBA
Plus Project																		
1	El Dorado Hills Boulevard	Francisco Drive	Green Valley Road	5,680	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	64.4	4	14	44	138
2	El Dorado Hills Boulevard	Harvard Way	Francisco Parkway	15,870	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.9	12	39	122	386
3	El Dorado Hills Boulevard	Wilson Boulevard	Harvard Way	20,780	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.0	16	51	160	506
4	El Dorado Hills Boulevard	Serrano Parkway	Wilson Boulevard	20,510	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.0	16	50	158	499
5	El Dorado Hills Boulevard	Saratoga Way	Serrano Parkway	22,300	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.4	17	54	172	543
6	El Dorado Hills Boulevard	South end of Saratoga Way/US 50 WB Ramp	North end of Sara	23,380	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.6	18	57	180	569
7	Latrobe Road	US 50 EB Ramp	US 50 WB Ramp	31,540	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	71.9	24	77	243	767
8	Silva Valley Parkway	Tong Road	Serrano Parkway	16,020	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.9	12	39	123	390
9	Silva Valley Parkway	Serrano Parkway	Harvard Way	12,360	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.8	10	30	95	301
10	Silva Valley Parkway	HArvard Way	Appian Way	7,880	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	65.8	6	19	61	192
11	Silva Valley Parkway	Appian Way	Green Valley Road	6,460	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	65.0	5	16	50	157
12	Green Valley Road	Sophia Parkway	Francisco Drive	23,720	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	73.2	33	104	330	1045
13	Green Valley Road	Francisco Drive	El Dorado Hills Boulevard	16,200	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	71.5	23	71	226	713
14	Green Valley Road	El Dorado Hills Boulevard	Silva Valley Parkway	16,530	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	71.6	23	73	230	728
15	Green Valley Road	Silva Valley Parkway	Loch Way	12,930	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.6	18	57	180	569
16	Green Valley Road	Loch Way	Malcolm Dixon Cutoff	12,720	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.5	18	56	177	560
17	Green Valley Road	Malcolm Dixon Cutoff	Malcolm Dixon Road	12,530	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.4	17	55	174	552
18	Green Valley Road	Project Driveway 2	Deer Valley Road	11,130	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.9	15	49	155	490
19	Green Valley Road	Deer Valley Road	Silver Springs Parkway	11,220	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.9	16	49	156	494
20	Green Valley Road	Silver Springs Parkway	Bass Lake Road	11,740	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.1	16	52	163	517
21	Green Valley Road	Bass Lake Road	Cambridge Road	12,490	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.4	17	55	174	550
22	Green Valley Road	Cambridge Road	Cameron Park Drive	10,270	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.6	14	45	143	452
23	Green Valley Road	Malcolm Dixon Road	Project Driveway 1	12,440	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.4	17	55	173	548
24	Green Valley Road	Project Driveway 1	Project Driveway 2	12,190	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.3	17	54	170	537
25	Francisco Drive	Green Valley Road	El Dorado Hills Boulevard	14,110	40	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.9	8	25	78	245
26	Harvard Way	El Dorado Hills Boulevard	Silva Valley Parkway	14,610	35	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	65.5	6	18	56	177
27	Serrano Parkway	El Dorado Hills Boulevard	Silva Valley Parkway	9,270	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.5	7	23	71	226

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project:

Noise Level Descriptor: Ldn
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor:

		Segment Description and Location		Input										Output				
						Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics						Ldn,	Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	(dBA)[5,6,7]	75 dBA	70 dBA	65 dBA	60 dBA
	Cumulative No Project																	
1	El Dorado Hills Boulevard	Francisco Drive	Green Valley Road	5,780	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	64.5	4	14	44	141
2	El Dorado Hills Boulevard	Harvard Way	Francisco Parkway	16,130	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.9	12	39	124	392
3	El Dorado Hills Boulevard	Wilson Boulevard	Harvard Way	23,030	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.5	18	56	177	560
4	El Dorado Hills Boulevard	Serrano Parkway	Wilson Boulevard	21,570	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.2	17	52	166	525
5	El Dorado Hills Boulevard	Saratoga Way	Serrano Parkway	26,780	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	71.1	21	65	206	652
6	El Dorado Hills Boulevard	South end of Saratoga Way/US 50 WB Ramp	North end of Sara	26,740	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	71.1	21	65	206	651
7	Latrobe Road	US 50 EB Ramp	US 50 WB Ramp	37,720	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	72.6	29	92	290	918
8	Silva Valley Parkway	Tong Road	Serrano Parkway	18,370	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.5	14	45	141	447
9	Silva Valley Parkway	Serrano Parkway	Harvard Way	13,850	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.3	11	34	107	337
10	Silva Valley Parkway	HArvard Way	Appian Way	8,040	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	65.9	6	20	62	196
11	Silva Valley Parkway	Appian Way	Green Valley Road	7,130	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	65.4	5	17	55	173
12	Green Valley Road	Sophia Parkway	Francisco Drive	27,020	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	73.8	38	119	376	1190
13	Green Valley Road	Francisco Drive	El Dorado Hills Boulevard	18,690	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	72.2	26	82	260	823
14	Green Valley Road	El Dorado Hills Boulevard	Silva Valley Parkway	17,770	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	71.9	25	78	247	783
15	Green Valley Road	Silva Valley Parkway	Loch Way	12,760	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.5	18	56	178	562
16	Green Valley Road	Loch Way	Malcolm Dixon Cutoff	12,160	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.3	17	54	169	536
17	Green Valley Road	Malcolm Dixon Cutoff	Malcolm Dixon Road	12,090	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.3	17	53	168	532
18	Green Valley Road	Project Driveway 2	Deer Valley Road	11,840	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.2	16	52	165	521
19	Green Valley Road	Deer Valley Road	Silver Springs Parkway	12,750	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.5	18	56	178	561
20	Green Valley Road	Silver Springs Parkway	Bass Lake Road	11,880	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.2	17	52	165	523
21	Green Valley Road	Bass Lake Road	Cambridge Road	13,370	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.7	19	59	186	589
22	Green Valley Road	Cambridge Road	Cameron Park Drive	10,870	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.8	15	48	151	479
23	Green Valley Road	Malcolm Dixon Road	Project Driveway 1	12,160	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.3	17	54	169	536
24	Green Valley Road	Project Driveway 1	Project Driveway 2	11,940	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.2	17	53	166	526
25	Francisco Drive	Green Valley Road	El Dorado Hills Boulevard	16,850	40	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.7	9	29	93	293
26	Harvard Way	El Dorado Hills Boulevard	Silva Valley Parkway	10,370	35	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	64.0	4	13	40	125
27	Serrano Parkway	El Dorado Hills Boulevard	Silva Valley Parkway	10,150	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.9	8	25	78	247

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Traffic Noise Spreadsheet Calculator

Project:

Noise Level Descriptor: Ldn
Site Conditions: Hard
Traffic Input: ADT
Traffic K-Factor:

		Segment Description and Location		Input										Output				
						Distance to Directional Centerline, (feet)[4]		Traffic Distribution Characteristics						Ldn,	Distance to Contour, (feet)[3]			
Number	Name	From	To	ADT	Speed (mph)	Near	Far	% Auto	% Medium	% Heavy	% Day	% Eve	% Night	(dBA)[5,6,7]	75 dBA	70 dBA	65 dBA	60 dBA
	Cumulative Plus Project																	
1	El Dorado Hills Boulevard	Francisco Drive	Green Valley Road	6,010	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	64.7	5	15	46	146
2	El Dorado Hills Boulevard	Harvard Way	Francisco Parkway	16,350	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.0	13	40	126	398
3	El Dorado Hills Boulevard	Wilson Boulevard	Harvard Way	23,220	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.5	18	56	179	565
4	El Dorado Hills Boulevard	Serrano Parkway	Wilson Boulevard	21,720	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.2	17	53	167	528
5	El Dorado Hills Boulevard	Saratoga Way	Serrano Parkway	26,990	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	71.2	21	66	208	657
6	El Dorado Hills Boulevard	South end of Saratoga Way/US 50 WB Ramp	North end of Sara	26,900	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	71.2	21	65	207	654
7	Latrobe Road	US 50 EB Ramp	US 50 WB Ramp	37,860	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	72.7	29	92	291	921
8	Silva Valley Parkway	Tong Road	Serrano Parkway	18,650	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	69.6	14	45	143	454
9	Silva Valley Parkway	Serrano Parkway	Harvard Way	14,130	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	68.4	11	34	109	344
10	Silva Valley Parkway	HArvard Way	Appian Way	8,390	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.1	6	20	65	204
11	Silva Valley Parkway	Appian Way	Green Valley Road	7,520	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	65.6	6	18	58	183
12	Green Valley Road	Sophia Parkway	Francisco Drive	28,040	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	73.9	39	123	390	1235
13	Green Valley Road	Francisco Drive	El Dorado Hills Boulevard	20,060	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	72.5	28	88	279	883
14	Green Valley Road	El Dorado Hills Boulevard	Silva Valley Parkway	20,240	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	72.5	28	89	282	891
15	Green Valley Road	Silva Valley Parkway	Loch Way	14,730	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	71.1	21	65	205	649
16	Green Valley Road	Loch Way	Malcolm Dixon Cutoff	14,180	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	71.0	20	62	197	624
17	Green Valley Road	Malcolm Dixon Cutoff	Malcolm Dixon Road	14,110	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.9	20	62	196	621
18	Green Valley Road	Project Driveway 2	Deer Valley Road	12,560	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.4	17	55	175	553
19	Green Valley Road	Deer Valley Road	Silver Springs Parkway	13,330	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.7	19	59	186	587
20	Green Valley Road	Silver Springs Parkway	Bass Lake Road	12,230	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.3	17	54	170	539
21	Green Valley Road	Bass Lake Road	Cambridge Road	13,690	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.8	19	60	191	603
22	Green Valley Road	Cambridge Road	Cameron Park Drive	11,530	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.1	16	51	161	508
23	Green Valley Road	Malcolm Dixon Road	Project Driveway 1	13,420	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.7	19	59	187	591
24	Green Valley Road	Project Driveway 1	Project Driveway 2	13,720	55	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	70.8	19	60	191	604
25	Francisco Drive	Green Valley Road	El Dorado Hills Boulevard	17,390	40	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	67.8	10	30	96	302
26	Harvard Way	El Dorado Hills Boulevard	Silva Valley Parkway	10,520	35	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	64.1	4	13	40	127
27	Serrano Parkway	El Dorado Hills Boulevard	Silva Valley Parkway	10,150	45	50	50	97.0%	2.0%	1.0%	80.0%	15.0%	5.0%	66.9	8	25	78	247

*All modeling assumes average pavement, level roadways (less than 1.5% grade), constant traffic flow and does not account for shielding of any type or finite roadway adjustments. All levels are reported as A-weighted noise levels.

Citation #	Citations	
1	Caltrans Technical Noise Supplement. 2009 (November). Table (5-11), Pg 5-60.	Caltrans Technical Noise Supplement. 2013 (September). Table (4-2), Pg 4-17.
2	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-26), Pg 5-60.	Caltrans Technical Noise Supplement. 2013 (September). Equation (4-5), Pg 4-17.
3	Caltrans Technical Noise Supplement. 2009 (November). Equation (2-16), Pg 2-32.	FHWA 2004 TNM Version 2.5
4	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-11), Pg 5-47, 48.	FHWA 2004 TNM Version 2.5
5	Caltrans Technical Noise Supplement. 2009 (November). Equation (2-26), Pg 2-55, 56.	Caltrans Technical Noise Supplement. 2013 (September). Equation (2-23), Pg 2-51
6	Caltrans Technical Noise Supplement. 2009 (November). Equation (2-27), Pg 2-57.	Caltrans Technical Noise Supplement. 2013 (September). Equation (2-24), Pg 2-53
7	Caltrans Technical Noise Supplement. 2009 (November). Pg 2-53.	Caltrans Technical Noise Supplement. 2013 (September). Pg 2-57.
8	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-7), Pg 5-45.	FHWA 2004 TNM Version 2.5
9	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-8), Pg 5-45.	FHWA 2004 TNM Version 2.5
10	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-9), Pg 5-45.	FHWA 2004 TNM Version 2.5
11	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-13), Pg 5-49.	FHWA 2004 TNM Version 2.5
12	Caltrans Technical Noise Supplement. 2009 (November). Equation (5-14), Pg 5-49.	FHWA 2004 TNM Version 2.5
13	Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (16), Pg 67	
14	Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (20), Pg 69	
15	Federal Highway Administration Traffic Noise Model Technical Manual. Report No. FHWA-PD-96-010. 1998 (January). Equation (18), Pg 69	

References

California Department of Transportation (Caltrans). 2009 (November). Technical Noise Supplement. Available: http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf. Accessed Aug 2017.

Summary

File Name on Meter	LxT_Data.178.s
File Name on PC	LxT_0003285-20240227 074333-LxT_Data.178.ldbin
Serial Number	0003285
Model	SoundTrack LxT®
Firmware Version	2.302
Location	
Job Description	Generations at Green Valley
Note	ST 1 (short-term 1)

Measurement

Description	
Start	2024-02-27 07:43:33
Stop	2024-02-27 08:01:19
Duration	00:17:45.9
Run Time	00:17:45.9
Pause	00:00:00.0
Pre-Calibration	2024-02-27 07:35:54
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Exponential
Overload	121.8 dB

	A	C	Z	
Under Range Peak	78.1	75.1	**80.1**	dB
Under Range Limit	**26.1**	25.9	31.0	dB
Noise Floor	16.5	16.7	21.9	dB

Results

L_{ASeq}	59.7	dB
LASE	90.0	dB
EAS	110.529	µPa²h
EAS8	2.986	mPa²h
EAS40	14.932	mPa²h
$LZ_{peak\ (max)}$	2024-02-27 08:00:54	100.1 dB
LAS_{max}	2024-02-27 08:00:54	74.5 dB
LAS_{min}	2024-02-27 07:59:20	41.4 dB
SEA	-99.9	dB

	Exceedance Counts	Duration
LC_{Seq}	69.8 dB	
LA_{Seq}	59.7 dB	
LC_{Seq} - LA_{Seq}	10.1 dB	
LAI_{eq}	60.8 dB	
LA_{eq}	59.7 dB	
LAI_{eq} - LA_{eq}	1.1 dB	

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	59.7					
$L_{S(max)}$	74.5	2024/02/27 8:00:54				
$L_{S(min)}$	41.4	2024/02/27 7:59:20				

Statistics

LAS 5.00	63.8 dB
LAS 10.00	62.6 dB
LAS 33.30	59.7 dB
LAS 50.00	57.8 dB
LAS 66.60	55.3 dB
LAS 90.00	47.9 dB

Summary

File Name on Meter	LxT_Data.179.s
File Name on PC	LxT_0003285-20240227 084703-LxT_Data.179.ldbin
Serial Number	0003285
Model	SoundTrack LxT®
Firmware Version	2.302
Location	
Job Description	Generations at Green Valley
Note	ST 2 (short-term 2)

Measurement

Description	
Start	2024-02-27 08:47:03
Stop	2024-02-27 09:02:28
Duration	00:15:24.8
Run Time	00:15:24.8
Pause	00:00:00.0
Pre-Calibration	2024-02-27 08:46:24
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Exponential
Overload	121.8 dB

	A	**C**	**Z**	
Under Range Peak	78.1	75.1	**80.1**	dB
Under Range Limit	**26.1**	25.9	31.0	dB
Noise Floor	16.5	16.7	21.9	dB

Results

LA_{Seq}	45.6 dB		
LASE	75.3 dB		
EAS	3.731 µPa²h		
EAS8	116.185 µPa²h		
EAS40	580.925 µPa²h		
$LZ_{peak\ (max)}$	2024-02-27 08:50:21	86.4 dB	
LAS_{max}	2024-02-27 08:47:37	61.4 dB	
LAS_{min}	2024-02-27 08:57:02	34.3 dB	
SEA	-99.9 dB		

	Exceedance Counts	**Duration**
LA_{Seq}	45.6 dB	
LC_{Seq} - LA_{Seq}	8.2 dB	
LAI_{eq}	48.3 dB	
LA_{eq}	45.6 dB	
LAI_{eq} - LA_{eq}	2.7 dB	

	A		**C**		**Z**	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
L_{eq}	45.6					
$L_{S(max)}$	61.4	2024/02/27 8:47:37				
$L_{S(min)}$	34.3	2024/02/27 8:57:02				
$L_{Peak(max)}$					86.4	2024/02/27 8:50:21

Overload Count	0
Overload Duration	0.0 s

Statistics

LAS 5.00	49.3 dB
LAS 10.00	45.9 dB
LAS 33.30	42.4 dB
LAS 50.00	41.3 dB
LAS 66.60	40.4 dB
LAS 90.00	38.5 dB

Summary

File Name on Meter	LxT_Data.180.s
File Name on PC	LxT_0003285-20240227 094522-LxT_Data.180.ldbin
Serial Number	0003285
Model	SoundTrack LxT®
Firmware Version	2.302
Job Description	Generations at Green Valley
Note	LT1 (long term 1)

Measurement

Description	
Start	2024-02-27 09:45:22
Stop	2024-02-28 10:26:46
Duration	24:41:23.703
Run Time	24:41:23.703
Pause	00:00:00.0
Pre-Calibration	2024-02-27 09:42:06
Post-Calibration	None
Calibration Deviation	---

Overall Settings

RMS Weight	A Weighting
Peak Weight	Z Weighting
Detector	Slow
Preamplifier	PRMLxT1L
Microphone Correction	Off
Integration Method	Exponential
Overload	121.8 dB

	A	C	Z	
Under Range Peak	78.1	75.1	**80.1**	dB
Under Range Limit	**26.1**	25.9	31.0	dB
Noise Floor	16.5	16.7	21.9	dB

Results

LASeq	41.9	dB
LASE	91.4	dB
EAS	152.961	µPa²h
EAS8	49.562	µPa²h
EAS40	247.811	µPa²h
LZpeak (max)	2024-02-27 12:18:26	108.7 dB
LASmax	2024-02-27 09:46:44	76.7 dB
LASmin	2024-02-27 23:09:17	22.8 dB
SEA	-99.9	dB

	Exceedance Counts	Duration
LCSeq	56.4 dB	
LASeq	41.9 dB	
LCSeq - LASeq	14.5 dB	
LAleq	48.2 dB	
LAeq	41.9 dB	
LAleq - LAeq	6.3 dB	

	A		C		Z	
	dB	**Time Stamp**	**dB**	**Time Stamp**	**dB**	**Time Stamp**
Leq	41.9					
LS(max)	76.7	2024/02/27 9:46:44				
LS(min)	22.8	2024/02/27 23:09:17				
LPeak(max)					108.7	2024/02/27 12:18:26

Statistics

LAS 5.00	46.4 dB
LAS 10.00	43.2 dB
LAS 33.30	38.5 dB
LAS 50.00	35.1 dB
LAS 66.60	32.0 dB
LAS 90.00	26.5 dB

LT 1 Record #	Date	Time	Run Duration	Run Time	LASeq	LASE	LASmin	LASmin Time
1	2024-02-27	09:45:22	00:14:37.7	00:14:37.7	53.8	83.2	36.5	09:59:57
2	2024-02-27	10:00:00	01:00:00.0	01:00:00.0	45.1	80.7	32.9	10:48:50
3	2024-02-27	11:00:00	01:00:00.0	01:00:00.0	44.1	79.7	34.6	11:00:50
4	2024-02-27	12:00:00	01:00:00.0	01:00:00.0	44.4	80.0	35.0	12:29:49
5	2024-02-27	13:00:00	01:00:00.0	01:00:00.0	43.3	78.9	34.0	13:35:04
6	2024-02-27	14:00:00	01:00:00.0	01:00:00.0	43.3	78.9	34.0	14:55:40
7	2024-02-27	15:00:00	01:00:00.0	01:00:00.0	41.8	77.4	31.7	15:53:28
8	2024-02-27	16:00:00	01:00:00.0	01:00:00.0	42.9	78.5	28.6	16:55:19
9	2024-02-27	17:00:00	01:00:00.0	01:00:00.0	39.2	74.8	27.5	17:36:33
10	2024-02-27	18:00:00	01:00:00.0	01:00:00.0	40.0	75.6	29.5	18:51:18
11	2024-02-27	19:00:00	01:00:00.0	01:00:00.0	44.1	79.7	27.7	19:54:43
12	2024-02-27	20:00:00	01:00:00.0	01:00:00.0	33.7	69.3	26.8	20:45:09
13	2024-02-27	21:00:00	01:00:00.0	01:00:00.0	38.1	73.7	27.3	21:31:34
14	2024-02-27	22:00:00	01:00:00.0	01:00:00.0	34.5	70.1	25.2	22:57:35
15	2024-02-27	23:00:00	01:00:00.0	01:00:00.0	31.2	66.8	22.8	23:09:17
16	2024-02-28	00:00:00	01:00:00.0	01:00:00.0	29.2	64.8	23.8	00:48:56
17	2024-02-28	01:00:00	01:00:00.0	01:00:00.0	35.0	70.6	23.9	01:49:06
18	2024-02-28	02:00:00	01:00:00.0	01:00:00.0	29.7	65.3	23.1	02:17:54
19	2024-02-28	03:00:00	01:00:00.0	01:00:00.0	30.0	65.6	27.7	03:05:49
20	2024-02-28	04:00:00	01:00:00.0	01:00:00.0	36.4	72.0	28.1	04:17:14
21	2024-02-28	05:00:00	01:00:00.0	01:00:00.0	41.4	77.0	29.6	05:01:27
22	2024-02-28	06:00:00	01:00:00.0	01:00:00.0	39.9	75.5	32.7	06:07:29
23	2024-02-28	07:00:00	01:00:00.0	01:00:00.0	44.0	79.6	35.4	07:01:23
24	2024-02-28	08:00:00	01:00:00.0	01:00:00.0	43.3	78.9	36.8	08:41:54
25	2024-02-28	09:00:00	01:00:00.0	01:00:00.0	41.3	76.9	33.6	09:44:55
26	2024-02-28	10:00:00	00:26:46.0	00:26:46.0	43.0	75.1	33.0	10:14:39

LASmax	LASmax Time	LAS5.00	LAS10.00	LAS33.30	LAS50.00	LAS66.60	LAS90.00
76.7	09:46:44	57.7	53.5	44.9	41.5	40.1	38.2
63.2	10:13:10	49.4	46.5	41.2	39.8	38.6	36.3
56.2	11:30:50	50.4	47.5	42.4	41.0	39.8	38.2
64.1	12:57:00	48.0	45.4	41.6	40.4	39.5	37.9
57.5	13:09:16	49.1	47.2	41.6	40.0	38.8	37.1
56.3	14:03:42	49.4	47.2	41.3	39.6	38.5	36.6
61.4	15:38:57	46.1	43.0	38.4	37.0	35.9	34.3
63.4	16:29:47	45.2	41.7	36.1	34.4	33.5	32.2
58.9	17:05:07	42.2	39.0	34.2	32.8	31.8	30.4
54.8	18:31:20	46.9	41.0	37.0	35.2	34.1	32.3
66.2	19:50:51	46.8	41.4	34.8	33.4	32.2	30.6
45.3	20:34:08	38.3	36.5	32.9	31.7	30.8	29.3
56.8	21:07:51	38.6	35.5	32.9	32.0	31.1	29.6
53.0	22:59:54	36.0	34.5	32.0	30.9	29.9	28.0
51.0	23:00:00	35.9	32.7	28.3	27.2	26.3	25.1
49.3	00:07:52	30.5	28.7	26.4	25.6	25.2	24.6
53.6	01:35:34	37.6	29.0	25.7	25.2	24.8	24.4
53.7	02:00:36	30.4	29.8	28.3	25.8	25.0	24.2
41.1	03:39:22	31.3	30.7	29.9	29.7	29.4	29.0
59.1	04:23:48	33.4	32.5	31.1	30.5	30.0	29.2
60.9	05:37:45	47.4	40.7	34.4	33.6	33.0	31.9
55.3	06:48:29	44.5	42.5	38.5	37.1	36.0	34.3
64.1	07:56:33	47.2	45.3	42.5	41.4	40.5	39.0
57.0	08:42:51	48.0	46.3	42.1	41.1	40.3	39.1
56.7	09:52:26	44.1	42.3	40.1	39.2	38.0	36.0
68.0	10:25:52	47.9	44.8	39.5	37.9	36.8	35.1

12-Hour Leq Calculator (Daytime Leq)

Hour	Hourly Leq (dB)	Linear Power (P)
1	45.1	32359.36569
2	44.1	25703.95783
3	44.4	27542.28703
4	43.3	21379.6209
5	43.3	21379.6209
6	41.8	15135.61248
7	42.9	19498.446
8	39.2	8317.637711
9	40	10000
10	44	25118.86432
11	43.3	21379.6209
12	41.3	13489.62883
	Sum	241304.6626
	Avg. Sound Power	20108.72188
	10-hour Leq	**43.0**

Note

The sheet converts dBA noise levels to sound power (watts), for each individual hour of the measurment period. Then SP values are summed and averaged, then converted back to dBA to obtain the 8-hour Leq

12-Hour Leq Calculator (Nighttime Leq)

Hour	Hourly Leq (dB)	Linear Power (P)
1	44.1	25703.95783
2	33.7	2344.228815
3	38.1	6456.54229
4	34.5	2818.382931
5	31.2	1318.256739
6	29.2	831.7637711
7	35	3162.27766
8	29.7	933.2543008
9	30	1000
10	36.4	4365.158322
11	41.4	13803.84265
12	39.9	9772.37221
	Sum	72510.03751
	Avg. Sound Power	6042.503126
	10-hour Leq	**37.8**

Note

The sheet converts dBA noise levels to sound power (watts), for each individual hour of the measurment period. Then SP values are summed and averaged, then converted back to dBA to obtain the 8-hour Leq

Long-Term Noise Measurement Summary

KEY: Orange cells are for input.
Grey cells are intermediate calculations performed by the model.
Green cells are data to present in a written analysis (output).

Measurement Site: Proposed site of Edgewood hotel complex
Measurement Date: 2/27/2024
Project Name: Generations at Green Calley

Hour of Day (military time)	Sound Level Leq (dBA)	Sound Power =10*Log(dBA/10)	Computation of CNEL: Period of 24-Hour Day (1=included, 0=not) Day	Evening	Night	Sound Power Breakdown by Period of Day Day	Evening	Night
0:00	29.2	832	0	0	1	0	0	832
1:00	35.0	3,162	0	0	1	0	0	3,162
2:00	29.7	933	0	0	1	0	0	933
3:00	30.0	1,000	0	0	1	0	0	1,000
4:00	36.4	4,365	0	0	1	0	0	4,365
5:00	41.4	13,804	0	0	1	0	0	13,804
6:00	39.9	9,772	0	0	1	0	0	9,772
7:00	44.0	25,119	1	0	0	25,119	0	0
8:00	43.3	21,380	1	0	0	21,380	0	0
9:00	41.3	13,490	1	0	0	13,490	0	0
10:00	45.1	32,359	1	0	0	32,359	0	0
11:00	44.1	25,704	1	0	0	25,704	0	0
12:00	44.4	27,542	1	0	0	27,542	0	0
13:00	43.3	21,380	1	0	0	21,380	0	0
14:00	43.3	21,380	1	0	0	21,380	0	0
15:00	41.8	15,136	1	0	0	15,136	0	0
16:00	42.9	19,498	1	0	0	19,498	0	0
17:00	39.2	8,318	1	0	0	8,318	0	0
18:00	40.0	10,000	1	0	0	10,000	0	0
19:00	44.1	25,704	0	1	0	0	25,704	0
20:00	33.7	2,344	0	1	0	0	2,344	0
21:00	38.1	6,457	0	1	0	0	6,457	0
22:00	34.5	2,818	0	0	1	0	0	2,818
23:00	31.2	1,318	0	0	1	0	0	1,318
		1						
		Sum of Sound Power during Period wo/penalty				241,305	34,505	38,005
		Log Factor for CNEL Penalty (i.e., 10*log(x))				1	3	10
		Sound Power during Period with penalty				241,305	103,514	380,053

Total Daily Sound Power, with penalties	724,872
Hours per Day	24
Average Hourly Sound Power, with penalties	30,203
CNEL	44.8

Ldn computation on next page.

Appendix I

Vehicle Miles Traveled Analysis

Kimley»Horn

Memorandum

To: Aidan Barry

From: Matt Weir, P.E., T.E., PTOE, RSP_1

Re: ***Generations at Green Valley – VMT Analysis***
El Dorado County, California

Date: November 3, 2023

This memorandum documents a Vehicle Miles Traveled (VMT) analysis completed for the proposed Generations at Green Valley (the "Project" or "Proposed Project") in El Dorado County, CA. The Proposed Project is expected to consist of a total of 380 single-family residential units, 214 of which will be age-restricted. With the passage of Senate Bill 743 (SB 743), VMT has become an important indicator for determining if new development will result in a "significant transportation impact" under the California Environmental Quality Act (CEQA). This memorandum summarizes the VMT analysis and resultant findings for the proposed Generations at Green Valley development project.

Purpose of Analysis

Senate Bill 743 (2013) changed the focus of transportation impact analyses in CEQA from measuring impacts to drivers, to measuring the impact of driving. The change was made by replacing Level of Service (LOS) with VMT. This shift in transportation impact focus was intended to better align transportation impact analyses and mitigation outcomes with the State's goals to reduce greenhouse gas (GHG) emissions, encourage infill development, and improve public health through more active transportation. Level of service or other delay metrics may still be used to evaluate the impact of projects on drivers as part of land use entitlement review and impact fee programs. Accordingly, traditional LOS was considered for the analysis of the Proposed Project and is provided under separate cover.

In January 2019, the Natural Resources Agency finalized updates to the CEQA Guidelines including the incorporation of SB 743 modifications. The Guidelines' changes were approved by the Office of Administrative Law and are now in effect. The provisions apply statewide as of July 1, 2020.

To aid lead agencies with SB 743 implementation, the Governor's Office of Planning and Research (OPR) produced the *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) that provides guidance regarding the variety of implementation questions they face with respect to shifting to a VMT metric. Key guidance from this document includes:

- VMT is the most appropriate metric to evaluate a project's transportation impact.
- OPR recommends tour- and trip-based travel models to estimate VMT, but ultimately defers to local agencies to determine the appropriate tools.
- OPR recommends measuring VMT for residential and office projects on a "per rate" basis.
- Lead agencies have the discretion to set or apply their own significance thresholds.

In 2019 the El Dorado County Transportation Commission (EDCTC) completed the *El Dorado County and City of Placerville SB 743 Implementation Plan* (July 19, 2019) to support El Dorado County and the City of Placerville with implementation of SB 743, including the selection of VMT analysis methodology, setting thresholds of significance, and potential mitigation. With Resolution 141-20203 (October 6, 2020), the El Dorado County Board of Supervisors adopted VMT thresholds of significance for purposes of analyzing transportation impacts under CEQA.

The County's VMT thresholds consider the VMT performance of residential projects using the efficiency metric of VMT per capita. The El Dorado County VMT threshold of significance is summarized below:

- Residential – 15% below baseline unincorporated countywide VMT per Capita (Unincorporated County average is currently 22.5 VMT per Capita with a threshold of 19.1 VMT per Capita as shown in **Appendix A**).

Methodology and Assumptions

Consistent with Resolution 141-2020[1], the El Dorado County Travel Demand Model (EDC TDM) was used as the principal tool to determine VMT. The EDC TDM contains a base year of 2018 and future year of 2040, but only the base year version of the model was used to determine the Project's VMT impact. In addition, the EDC TDM was recently updated to include a VMT analysis tool, which was used to complete the analysis of the Project. The VMT estimation tool generates estimates in a manner that is consistent with OPR's guidelines. In addition, to provide a full accounting of vehicle travel, the EDC TDM provides VMT estimates that include the VMT from intrazonal vehicle trips and trip length adjustments for the trips that enter or exit the area covered by the EDC TDM.

To determine the length of intrazonal trips that both start and end within each Traffic Analysis Zone (TAZ), an estimation process was conducted as the trips are never assigned to the roadway network as they never leave the TAZ. Therefore, using the EDC TDM, the intrazonal trip lengths are estimated by calculating half of the shortest travel distance between a given TAZ and all the other TAZs, using the EDC TDM's midday assignment. The midday 5-hour assignment period is used to calculate intrazonal travel because there is generally less traffic and less congestion (i.e., compared to the AM or PM peak periods) and is more representative of average daily conditions.

Finally, the external trips that either start (XI) or end (IX) outside of the model area needed to have their trip lengths adjusted as well. Entering (XI) and exiting (XI) trip lengths were averaged using the California Statewide Travel Demand Model (CSTDM). Because of the sample size limitations with the California Household Travel Survey (CHTS) data (i.e., only 163 recorded trips), trip length adjustments from the CSTDM were used.

The TAZ structure was modified slightly to separate the Project from the TAZ within which it is located (TAZ 212) into its own TAZ, TAZ 630. Other than adding a centroid connector to load Project traffic to the roadway network, no other modifications were made to the EDC TDM roadway network as a part of this analysis.

Based on the adopted guidelines and thresholds, a project is considered to result in a significant impact if the VMT per Capita for the project exceeds 85-percent of the County average for the respective metric as noted in the previous section.

Project Land Use Model Input Conversion

Based on the Project's land use plan, it is assumed that the Project is comprised of 214 age restricted residential units and 166 single-family residential units. While the EDC TDM differentiates between household types, single-family versus multi-family, it does not have a specific step to synthesize the population of these households separately. Therefore, the population for the single-family units was synthesized in a manner consistent with the existing households in the TAZ adjacent to the Proposed Project that was determined to most accurately represent the Proposed Project (TAZ 207). Furthermore, as the EDC TDM does not contain a housing type for age restricted units, these units were added as single-family units and the population variables were modified to best represent the future population

[1] *Board of Supervisors of the County of El Dorado Resolution 141-2020*. El Dorado County Board of Supervisors. October 2020.

demographics. These variables included household size, number of workers, and household income. While no specific demographic information could be obtained for age restricted developments, it was assumed that only 10-percent of the household contained at least one (1) worker and the remainder of the households did not have a single worker. In addition, only 15-percent of the households were assumed to have three (3) residents, while the remainder of the households were assumed to be 1- or 2-person households.

This approach resulted in a total Project population of 908 being included in the model to represent the total 380 units. Of the 908 total residents, 420 were assumed to live within the 214 age-restricted units and 488 were assumed to live within the 166 single-family residential units.

Analysis

VMT was calculated for the Project using three separate steps. First, the travel distance between each pair of TAZs was calculated using the loaded network to model real world conditions. This step included the trip length alteration for intrazonal, XI, and IX trips. The second step calculated the VMT between each TAZ by multiplying the number of trips between each TAZ by the calculated distance between each TAZ, including the intrazonal trips. Finally, the VMT was categorized as either home-based or home-based work VMT. This categorization is completed by determining the percentage of vehicle productions and attractions by trip purpose and direction (departures and returns). These percentages are then applied to the total VMT estimates, to determine the VMT by trip purpose and direction. The home-based VMT summarizes VMT by the production TAZ for residential uses.

To determine the residential VMT produced by the Project, the Home Based VMT for the Project TAZ (TAZ 630) was totaled and divided by the total residential population to obtain a VMT per Capita value for the Project. Detailed VMT outputs are shown in Appendix B.

Table 1 summarizes the VMT per Capita for the proposed Project and compares it to the County threshold. As shown in Table 1, the Project results in a VMT per Capita above the County's threshold.

Table 1 – Vehicle Miles Traveled (VMT) by Land Use and Scenario

Scenario	VMT/Capita (Residential)
Calculated VMT per Capita by Scenario	
County Average	**22.5**
County Threshold	**19.1**
2018 Plus Project	19.6
VMT per Capita as a Percent of Threshold by Scenario	
2018 Plus Project	103%
Over Threshold?	
2018 Plus Project	**Yes**

Cumulative Analysis

A project's Cumulative impacts should be evaluated for consistency with the County General Plan zoning. Because the Proposed Project is not consistent with the County's General Plan zoning, it is understood that the Project is not captured in the County's future land use projections. Therefore, the Project's VMT is not accounted for in the future and the Proposed Project's impacts for Cumulative (2040) Conditions must be analyzed.

VMT was calculated for the Project for Cumulative (2040) Conditions consistent with the methodology outlined above for Existing Conditions. As with the Existing Conditions analysis, the home-based VMT summarizes VMT by the production TAZ for residential uses. To determine the residential VMT produced by the Project, the Home Based VMT for the Project TAZ (TAZ 630) for Cumulative (2040) Conditions was totaled and divided by the total residential population for the proposed Project to obtain a VMT per Capita value for the Project. Detailed VMT outputs are shown in Appendix C.

Table 2 summarizes the VMT per Capita for the proposed Project and compares it to the County threshold. Note that this threshold is consistent with the one calculated for Existing Conditions rather than being recalculated for Cumulative (2040) Conditions. Because OPR recommends that thresholds are not recalculated for Cumulative (2040) Conditions, the threshold shown in Table 2 is consistent with the threshold shown in Table 1. As presented in Table 2, the Project results in a VMT per Capita above the County's threshold.

Table 2 – Vehicle Miles Traveled (VMT) by Land Use and Scenario (2040)

Scenario	VMT/Capita (Residential)
Calculated VMT per Capita by Scenario	
County Average (2018)	**22.5**
County Threshold (2018)	**19.1**
2040 Plus Project	19.7
VMT per Capita as a Percent of Threshold by Scenario	
2040 Plus Project	103%
Over Threshold?	
2040 Plus Project	**Yes**

Findings

Based on the results of this analysis, the following findings are made:

- The Project land uses exceed the threshold of significance for the 2018 Project scenario. *The project is determined to have a significant transportation impact for Existing Conditions.*
- The Project is not consistent with the County's General Plan zoning and it is understood that the Project is not captured in the County's future land use projections. Therefore, it was determined that the Project's Cumulative impacts will need to be analyzed in a manner consistent with 2018 Conditions. The Project land uses exceed the threshold of significance for the Cumulative (2040) Project scenario. *Therefore, the Project is determined to have a significant transportation impact for Cumulative (2040) Conditions.*
- The Project applicant will work with El Dorado County staff to determine feasible and implementable mitigation solutions to potentially reduce the proposed Project's VMT per capita below the County's threshold.

Attachments

Appendix A – Unincorporated County Vehicle Miles Traveled (VMT) Details
Appendix B – Generations at Green Valley (Project) Vehicle Miles Traveled (VMT) Details
Appendix C – Generations at Green Valley (Project) Vehicle Miles Traveled (VMT) Details for Cumulative (2040) Conditions

Appendix A

Unincorporated County Vehicle Miles Traveled (VMT) Details

Appendix A - Unincorporated County Vehicle Miles Traveled (VMT) Details

VMT Summary by Jurisdiction - 2018 Baseline Scenario

Jurisdiction	VMT Estimates			VMT Efficiency Metrics		Population Details	
	Total OD VMT	Home-based PA VMT	Home-based Work PA VMT	Home-based VMT per Capita	Home-based Work VMT per Employee	Total Population	Total Employment
Unincorporated El Dorado County (Average)	3,606,897	3,046,839	409,693	22.5	12.8	135,715	32,131
Unincorporated El Dorado County (Threshold)	-	-	-	19.1	10.8	-	-

VMT Summary by Jurisdiction - 2018 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
1.00	Unincorporated El Dorado County (Remainder Area)	0	4,166	2,626	327	46	75	16	91	46.0
2.00	Unincorporated El Dorado County (Remainder Area)	0	23,118	32,047	463	525	1,185	34	1,219	19.0
3.00	Unincorporated El Dorado County (Remainder Area)	0	2,949	3,745	42	34	88	0	88	33.6
4.00	Unincorporated El Dorado County (Remainder Area)	0	1,536	1,540	52	16	34	2	36	43.0
5.00	Unincorporated El Dorado County (Remainder Area)	0	2,866	4,046	27	33	73	0	73	39.5
6.00	Unincorporated El Dorado County (Remainder Area)	0	12,336	15,861	354	270	646	9	655	18.8
7.00	Unincorporated El Dorado County (Remainder Area)	0	25,856	33,452	993	516	1,119	71	1,190	21.7
8.00	Unincorporated El Dorado County (Remainder Area)	0	2,718	792	751	14	36	60	96	28.3
9.00	Unincorporated El Dorado County (Remainder Area)	0	28,499	33,395	1,708	482	1,240	117	1,357	21.0
10.00	Outside of County	0	0	0	0	0	0	0	0	-
11.00	Outside of County	0	0	0	0	0	0	0	0	-
12.00	Outside of County	0	39,353	30,977	1,872	663	1,741	96	1,837	21.4
13.00	Outside of County	0	31,126	35,939	676	775	1,995	0	1,995	15.6
14.00	Outside of County	0	64,157	72,184	1,543	1,502	4,068	32	4,100	15.6
15.00	Outside of County	0	497	523	10	10	23	0	23	22.1
16.00	Outside of County	0	56,270	8,955	7,530	149	378	434	812	69.3
17.00	Outside of County	0	0	0	0	0	0	0	0	-
18.00	Outside of County	0	1,564	620	67	41	116	0	116	13.5
19.00	Outside of County	0	0	0	0	0	0	0	0	-
20.00	Outside of County	0	219	18	118	1	1	5	6	36.5
21.00	Outside of County	0	5,220	50	2,538	1	2	112	114	45.8
22.00	Outside of County	0	2,239	269	579	2	6	23	29	77.2
23.00	Outside of County	0	58,930	23,741	6,314	101	273	244	517	114.1
24.00	Outside of County	0	48	30	1	1	1	0	1	47.5
25.00	Outside of County	0	0	0	0	0	0	0	0	-
26.00	Outside of County	0	0	0	0	0	0	0	0	-
27.00	Outside of County	0	1,320	266	500	2	6	22	28	47.1
28.00	Outside of County	0	12,524	14,738	377	123	332	6	338	37.0
29.00	Outside of County	0	7,845	9,174	242	72	192	5	197	39.8
30.00	Outside of County	0	6,050	0	3,192	0	0	133	133	45.5
31.00	Outside of County	0	5,557	4,119	1,039	44	94	45	139	39.9
32.00	Outside of County	0	24,953	6,831	622	676	1,526	0	1,526	16.3
33.00	Outside of County	0	0	0	0	0	0	0	0	-
34.00	Outside of County	0	8,755	9,498	584	75	191	16	207	42.3
35.00	Outside of County	0	0	0	0	0	0	0	0	-
36.00	Outside of County	0	0	0	0	0	0	0	0	-
37.00	Outside of County	0	5,042	0	2,670	0	0	178	178	28.3
38.00	Outside of County	0	0	0	0	0	0	0	0	-
39.00	Outside of County	0	24,310	22,457	3,316	666	1,569	227	1,796	13.5
40.00	Outside of County	0	112,464	25,842	18,883	916	2,079	1,839	3,918	28.7
41.00	Outside of County	0	30,906	26,574	3,958	544	1,271	203	1,474	21.0
42.00	Outside of County	0	0	0	0	0	0	0	0	-
43.00	Outside of County	0	53,527	63,304	1,203	828	2,045	0	2,045	26.2
44.00	Outside of County	0	79,459	76,876	3,256	1,069	2,614	95	2,709	29.3
45.00	Outside of County	0	101,352	24,241	14,670	906	2,057	1,357	3,414	29.7
46.00	Outside of County	0	0	0	0	0	0	0	0	-
47.00	Outside of County	0	100,800	0	42,751	0	0	2,398	2,398	42.0
48.00	Outside of County	0	71,735	71,936	3,413	1,203	3,068	121	3,189	22.5
49.00	Outside of County	0	152,679	0	78,101	0	0	4,642	4,642	32.9
50.00	Outside of County	0	120,870	85,622	19,287	1,025	2,430	826	3,256	37.1
51.00	Outside of County	0	127,937	69,592	18,217	1,768	4,253	1,237	5,490	23.3
52.00	Outside of County	0	45,479	25,262	4,454	297	667	240	907	50.1
53.00	Outside of County	0	113,884	87,730	8,465	1,335	3,452	377	3,829	29.7
54.00	Outside of County	0	93,497	36,350	38,701	476	1,153	1,827	2,980	31.4
55.00	Outside of County	0	82,632	38,237	12,452	675	1,583	800	2,383	34.7
56.00	Outside of County	0	34,972	40,102	993	820	1,933	4	1,937	18.1
57.00	Outside of County	0	162,092	0	113,336	0	0	7,375	7,375	22.0
58.00	Outside of County	0	43,751	24,397	6,802	465	1,160	388	1,548	28.3
59.00	Outside of County	0	426	110	173	2	4	9	13	32.7
60.00	Outside of County	0	205,449	17,434	103,017	238	478	4,236	4,714	43.6
61.00	Outside of County	0	277,015	193,125	22,414	2,205	5,227	797	6,024	46.0
62.00	Outside of County	0	55,666	318	26,745	4	8	1,150	1,158	48.1

VMT Summary by Jurisdiction - 2018 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
63.00	Outside of County	0	114,425	18,521	51,559	340	756	3,083	3,839	29.8
64.00	Outside of County	0	79,435	60,433	11,462	865	2,156	560	2,716	29.2
65.00	Outside of County	0	10,503	11,624	218	136	338	0	338	31.1
66.00	Outside of County	0	62,374	51,041	4,282	826	1,950	172	2,122	29.4
67.00	Outside of County	0	10,409	0	2,797	0	0	178	178	58.5
68.00	Outside of County	0	55,078	32,867	11,777	616	1,314	679	1,993	27.6
69.00	Outside of County	0	143,872	90,934	38,058	1,588	4,122	2,320	6,442	22.3
70.00	Outside of County	0	210,170	801	126,672	0	0	6,956	6,956	30.2
71.00	Outside of County	0	107,548	111,353	4,863	1,231	3,088	121	3,209	33.5
72.00	Outside of County	0	247,277	358	132,064	0	0	5,133	5,133	48.2
73.00	Outside of County	0	122,122	0	80,001	0	0	5,627	5,627	21.7
74.00	Outside of County	0	176,117	21,981	81,378	435	1,022	4,728	5,750	30.6
75.00	Outside of County	0	106,895	77,981	27,259	1,936	4,401	1,866	6,267	17.1
76.00	Outside of County	0	42,176	23,721	5,013	508	1,352	297	1,649	25.6
77.00	Outside of County	0	160,532	79,023	34,071	1,155	2,810	1,659	4,469	35.9
78.00	Outside of County	0	88,858	0	23,882	0	0	1,567	1,567	56.7
79.00	Outside of County	0	971	0	0	0	0	20	20	48.6
80.00	Outside of County	0	50,636	0	23,931	0	0	1,410	1,410	35.9
81.00	Outside of County	0	160,628	0	83,068	0	0	4,951	4,951	32.4
82.00	Outside of County	0	56,271	0	29,838	0	0	1,787	1,787	31.5
83.00	Outside of County	0	0	0	0	0	0	0	0	-
84.00	Outside of County	0	64,935	48,607	6,599	1,226	2,817	405	3,222	20.2
85.00	Outside of County	0	71,715	60,548	4,739	1,295	3,246	253	3,499	20.5
86.00	Outside of County	0	111,986	74,912	11,544	1,968	4,487	754	5,241	21.4
87.00	Outside of County	0	102,508	66,622	12,953	2,114	4,344	800	5,144	19.9
88.00	Outside of County	0	86,778	48,055	11,980	1,099	2,679	762	3,441	25.2
89.00	Outside of County	0	11,255	0	4,682	0	0	293	293	38.4
90.00	Outside of County	0	53,226	0	10,922	0	0	592	592	89.9
91.00	Outside of County	0	123,481	16,293	50,210	383	961	4,100	5,061	24.4
92.00	Outside of County	0	59,947	56,565	3,275	1,139	2,709	141	2,850	21.0
93.00	Outside of County	0	0	0	0	0	0	0	0	-
94.00	Outside of County	0	432	480	9	6	15	0	15	28.8
95.00	Outside of County	0	924	0	440	0	0	27	27	34.2
96.00	Outside of County	0	343	0	174	0	0	12	12	28.6
97.00	Outside of County	0	110	103	2	2	4	0	4	27.5
98.00	Outside of County	0	75,981	352	27,272	10	25	2,289	2,314	32.8
99.00	Outside of County	0	49,798	27,047	11,872	791	1,944	958	2,902	17.2
100.00	Outside of County	0	6,021	7,034	128	84	203	0	203	29.6
101.00	Outside of County	0	12,099	0	6,018	0	0	320	320	37.8
102.00	Outside of County	0	6,000	5,243	996	51	153	53	206	29.1
103.00	Outside of County	0	58,984	68,339	1,381	910	2,200	0	2,200	26.8
104.00	Outside of County	0	0	0	0	0	0	0	0	-
105.00	Outside of County	0	0	0	0	0	0	0	0	-
106.00	Outside of County	0	2,868	0	1,439	0	0	70	70	41.0
107.00	Outside of County	0	86,625	0	45,771	0	0	3,135	3,135	27.6
108.00	Outside of County	0	437	0	202	0	0	15	15	29.1
109.00	Outside of County	0	18,922	0	4,255	0	0	238	238	79.5
110.00	Outside of County	0	63,976	8,774	28,943	205	426	1,610	2,036	31.4
111.00	Outside of County	0	136,717	12,325	24,963	350	728	1,151	1,879	72.8
112.00	Outside of County	0	195,988	38,217	41,788	747	1,946	2,117	4,063	48.2
113.00	Outside of County	0	88,904	0	47,000	0	0	4,022	4,022	22.1
114.00	Outside of County	0	40,814	30,283	7,763	770	1,950	660	2,610	15.6
115.00	Outside of County	0	0	0	0	0	0	0	0	-
116.00	Outside of County	0	0	0	0	0	0	0	0	-
117.00	Outside of County	0	87,124	32,807	23,801	401	1,031	1,492	2,523	34.5
118.00	Outside of County	0	89,463	81,373	3,775	2,313	5,898	187	6,085	14.7
119.00	Outside of County	0	171,753	7,945	75,523	214	522	6,545	7,067	24.3
120.00	Outside of County	0	203,382	0	58,569	0	0	4,131	4,131	49.2
121.00	Outside of County	0	166,199	57,288	22,361	1,642	4,261	1,724	5,985	27.8
122.00	Outside of County	0	67,095	20,235	12,428	619	1,530	1,071	2,601	25.8
123.00	Outside of County	0	52,834	7,535	10,726	200	529	855	1,384	38.2
124.00	Outside of County	0	80,923	55,078	5,562	1,240	2,628	328	2,956	27.4

VMT Summary by Jurisdiction - 2018 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
125.00	Outside of County	0	59,993	10,940	9,293	389	801	781	1,582	37.9
126.00	Outside of County	0	15,688	4,356	1,784	136	279	129	408	38.4
127.00	Outside of County	0	38,513	34,433	2,025	800	1,693	117	1,810	21.3
128.00	Outside of County	0	85,653	40,306	11,052	999	2,062	767	2,829	30.3
129.00	Outside of County	0	42,715	46,640	819	994	2,246	0	2,246	19.0
130.00	Outside of County	0	31,447	10,020	4,065	369	740	416	1,156	27.2
131.00	Outside of County	0	75,374	20,584	13,616	607	1,234	1,278	2,512	30.0
132.00	Outside of County	0	33,903	20,607	3,968	407	894	260	1,154	29.4
133.00	Outside of County	0	132,673	63,999	14,735	2,087	5,211	1,475	6,686	19.8
134.00	Outside of County	0	70,311	32,120	18,482	1,075	2,460	1,492	3,952	17.8
135.00	Outside of County	0	43,514	0	23,772	0	0	2,114	2,114	20.6
136.00	Outside of County	0	31,862	28,679	1,647	669	1,669	82	1,751	18.2
137.00	Outside of County	0	138,587	104,455	9,379	2,349	6,735	673	7,408	18.7
138.00	El Dorado Diamond Springs	0	5,531	5,338	430	161	367	25	392	14.1
139.00	El Dorado Diamond Springs	0	3,994	1,768	670	62	135	55	190	21.0
140.00	El Dorado Diamond Springs	0	24,371	265	5,033	10	27	383	410	59.4
141.00	Unincorporated El Dorado County (Remainder Area)	0	2,082	1,974	80	21	49	2	51	41.0
142.00	Unincorporated El Dorado County (Remainder Area)	0	7,364	7,976	178	157	353	0	353	20.9
143.00	Unincorporated El Dorado County (Remainder Area)	0	3,601	3,742	133	93	209	4	213	16.9
144.00	Unincorporated El Dorado County (Remainder Area)	0	3,896	4,004	290	74	186	19	205	19.0
145.00	Unincorporated El Dorado County (Remainder Area)	0	802	837	22	30	69	0	69	11.7
146.00	El Dorado Diamond Springs	0	3,810	1,778	632	64	145	51	196	19.5
147.00	El Dorado Diamond Springs	0	4,298	4,544	135	159	359	0	359	12.0
148.00	Outside of County	0	189,218	257,141	6,738	2,250	5,293	137	5,430	34.8
149.00	Shingle Springs	0	6,891	1,697	1,466	37	98	112	210	32.8
150.00	Unincorporated El Dorado County (Remainder Area)	0	7,722	8,487	225	109	260	3	263	29.4
151.00	Unincorporated El Dorado County (Remainder Area)	0	1,453	2,003	20	23	67	0	67	21.6
152.00	Shingle Springs	0	9,916	6,134	1,454	122	315	99	414	24.0
153.00	Unincorporated El Dorado County (Remainder Area)	0	6,431	6,651	217	178	388	5	393	16.4
154.00	Unincorporated El Dorado County (Remainder Area)	0	3,340	3,259	235	84	196	16	212	15.7
155.00	Shingle Springs	0	2,686	3,144	57	62	161	0	161	16.6
156.00	Unincorporated El Dorado County (Remainder Area)	0	2,329	2,755	39	27	67	0	67	34.6
157.00	El Dorado Hills	0	11,314	14,582	188	274	807	0	807	14.0
158.00	Cameron Park	0	22,047	24,487	1,060	598	1,373	72	1,445	15.3
159.00	Cameron Park	0	12,635	16,235	239	340	878	1	879	14.4
160.00	Shingle Springs	0	7,853	9,562	164	194	501	0	501	15.7
161.00	El Dorado Hills	0	6,106	7,825	93	105	283	0	283	21.6
162.00	El Dorado Hills	0	71,569	99,177	978	1,503	4,414	0	4,414	16.2
163.00	El Dorado Hills	0	350	364	39	7	21	4	25	14.2
164.00	El Dorado Hills	0	27,784	0	14,365	0	0	1,232	1,232	22.6
165.00	El Dorado Hills	0	16,363	19,623	373	373	997	0	997	16.4
166.00	Outside of County	0	41,447	42,198	1,373	749	1,892	49	1,941	21.4
167.00	El Dorado Hills	0	50,123	52,254	2,138	1,297	2,904	55	2,959	16.9
168.00	El Dorado Hills	0	30,546	36,220	944	1,125	2,519	9	2,528	12.1
169.00	El Dorado Hills	0	102,894	154	21,197	0	0	1,688	1,688	61.0
170.00	El Dorado Hills	0	27,560	0	15,243	0	0	1,357	1,357	20.3
171.00	El Dorado Hills	0	14,234	12,753	758	441	790	20	810	17.6
172.00	El Dorado Hills	0	8,204	0	1,963	0	0	168	168	48.8
173.00	El Dorado Hills	0	29,687	0	6,376	0	0	547	547	54.3
174.00	Unincorporated El Dorado County (Remainder Area)	0	2,218	1,539	249	15	37	11	48	45.9
175.00	Unincorporated El Dorado County (Remainder Area)	0	955	876	97	11	26	5	31	30.6
176.00	Unincorporated El Dorado County (Remainder Area)	0	2,048	2,324	41	29	69	0	69	29.6
177.00	Unincorporated El Dorado County (Remainder Area)	0	827	702	119	10	25	7	32	25.9
178.00	Unincorporated El Dorado County (Remainder Area)	0	2,085	2,421	40	30	77	0	77	27.0
179.00	Unincorporated El Dorado County (Remainder Area)	0	10	17	0	1	3	0	3	3.7
180.00	El Dorado Hills	0	3,243	3,924	54	58	149	0	149	21.7
181.00	El Dorado Hills	0	1,418	8	645	1	3	58	61	23.4
182.00	Cameron Park	0	51,882	68,033	795	1,186	3,202	0	3,202	16.2
183.00	Unincorporated El Dorado County (Remainder Area)	0	6,525	7,645	127	152	355	0	355	18.4
184.00	Cameron Park	0	28,763	20,492	3,325	357	964	300	1,264	22.8
185.00	Cameron Park	0	5,401	6,636	94	149	342	0	342	15.8
186.00	Cameron Park	0	647	102	236	3	7	28	35	18.5

VMT Summary by Jurisdiction - 2018 Baseline Scenario

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187.00	Cameron Park	0	10,281	9,793	1,023	239	549	85	634	16.2
188.00	Cameron Park	0	7,327	7,048	803	188	432	69	501	14.6
189.00	Unincorporated El Dorado County (Remainder Area)	0	2,895	3,688	44	37	104	0	104	28.0
190.00	Unincorporated El Dorado County (Remainder Area)	0	11,290	14,830	175	237	663	0	663	17.0
191.00	El Dorado Hills	0	824	1,100	11	19	53	0	53	15.5
192.00	El Dorado Hills	0	1,093	1,444	15	25	70	0	70	15.7
193.00	El Dorado Hills	0	8,893	4,380	2,565	100	253	246	499	17.8
194.00	El Dorado Hills	0	18,209	23,760	280	439	1,285	0	1,285	14.2
195.00	El Dorado Hills	0	1,605	531	184	10	26	14	40	40.6
196.00	Outside of County	0	45,981	51,299	1,506	923	2,503	82	2,585	17.8
197.00	El Dorado Hills	0	3,954	4,957	65	86	219	0	219	18.0
198.00	El Dorado Hills	0	58,474	46,936	4,592	887	2,482	453	2,935	19.9
199.00	El Dorado Hills	0	11,088	3,692	1,539	62	173	120	293	37.8
200.00	El Dorado Hills	0	3,335	333	740	7	18	67	85	39.3
201.00	El Dorado Hills	0	13,472	8,479	2,757	150	439	301	740	18.2
202.00	El Dorado Hills	0	41,829	41,531	2,356	737	2,062	199	2,261	18.5
203.00	El Dorado Hills	0	52,615	66,781	1,839	1,043	3,061	139	3,200	16.4
204.00	El Dorado Hills	0	18,761	20,036	597	362	1,067	41	1,108	16.9
205.00	El Dorado Hills	0	628	0	288	0	0	30	30	20.9
206.00	El Dorado Hills	0	2,124	2,756	30	52	153	0	153	13.9
207.00	El Dorado Hills	0	15,051	19,923	231	296	869	0	869	17.3
208.00	Unincorporated El Dorado County (Remainder Area)	0	412	558	5	9	26	0	26	15.6
209.00	El Dorado Hills	0	2,999	3,557	172	55	161	14	175	17.1
210.00	El Dorado Hills	0	5,743	7,581	87	125	366	0	366	15.7
211.00	Unincorporated El Dorado County (Remainder Area)	0	167	231	2	4	11	0	11	15.0
212.00	El Dorado Hills	0	1,871	2,523	25	35	103	0	103	18.2
213.00	Unincorporated El Dorado County (Remainder Area)	0	6,812	8,992	101	116	323	0	323	21.1
214.00	Unincorporated El Dorado County (Remainder Area)	0	686	922	10	8	19	0	19	35.4
215.00	El Dorado Hills	0	6,138	8,031	95	113	316	0	316	19.4
216.00	Unincorporated El Dorado County (Remainder Area)	0	400	520	5	5	12	0	12	33.1
217.00	Unincorporated El Dorado County (Remainder Area)	0	740	957	10	11	31	0	31	24.0
218.00	Unincorporated El Dorado County (Remainder Area)	0	1,723	2,237	25	28	78	0	78	22.0
219.00	Unincorporated El Dorado County (Remainder Area)	0	4,456	2,399	1,004	28	78	77	155	28.8
220.00	Unincorporated El Dorado County (Remainder Area)	0	581	762	8	9	25	0	25	23.2
221.00	El Dorado Hills	0	43,247	59,070	587	876	2,359	0	2,359	18.3
222.00	Cameron Park	0	2,699	1,423	256	26	71	26	97	28.0
223.00	Cameron Park	0	4,072	5,524	52	103	279	0	279	14.6
224.00	Unincorporated El Dorado County (Remainder Area)	0	5,457	6,394	348	95	258	29	287	19.0
225.00	Unincorporated El Dorado County (Remainder Area)	0	11,249	7,664	978	92	270	79	349	32.2
226.00	Cameron Park	0	10,028	8,755	771	131	384	76	460	21.8
227.00	Cameron Park	0	182	177	13	5	12	2	14	12.9
228.00	Cameron Park	0	23,398	31,104	509	705	1,703	20	1,723	13.6
229.00	El Dorado Hills	0	405	556	4	9	24	0	24	16.7
230.00	El Dorado Hills	0	590	809	6	12	35	0	35	16.7
231.00	Unincorporated El Dorado County (Remainder Area)	0	1,019	332	239	5	15	28	43	23.9
232.00	Unincorporated El Dorado County (Remainder Area)	0	2,109	2,821	28	33	92	0	92	23.0
233.00	Cameron Park	0	6,653	3,846	768	92	211	101	312	21.3
234.00	Cameron Park	0	47,144	41,546	4,548	1,004	2,306	587	2,893	16.3
235.00	Cameron Park	0	33,832	44,754	479	861	2,214	0	2,214	15.3
236.00	Cameron Park	0	17,939	24,296	298	468	1,204	9	1,213	14.8
237.00	Cameron Park	0	2,846	3,551	47	75	172	0	172	16.5
238.00	Cameron Park	0	15,143	13,696	2,017	280	676	199	875	17.3
239.00	Cameron Park	0	1,950	1,618	135	32	87	16	103	19.0
240.00	Unincorporated El Dorado County (Remainder Area)	0	7,287	9,730	107	127	345	0	345	21.1
241.00	Cameron Park	0	6,848	9,117	105	164	445	2	447	15.3
242.00	Cameron Park	0	806	1,102	9	22	60	0	60	13.5
243.00	Cameron Park	0	2,409	2,931	120	52	141	13	154	15.6
244.00	Unincorporated El Dorado County (Remainder Area)	0	1,391	1,801	23	22	57	0	57	24.6
245.00	Unincorporated El Dorado County (Remainder Area)	0	842	1,066	11	10	29	0	29	29.1
246.00	Unincorporated El Dorado County (Remainder Area)	0	4,452	6,056	59	63	182	0	182	24.4
247.00	Unincorporated El Dorado County (Remainder Area)	0	14,550	16,665	351	296	646	0	646	22.5
248.00	Unincorporated El Dorado County (Remainder Area)	0	10,727	13,056	226	185	441	0	441	24.3

VMT Summary by Jurisdiction - 2018 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
249.00	Unincorporated El Dorado County (Remainder Area)	0	1,911	2,086	39	27	59	0	59	32.4
250.00	Unincorporated El Dorado County (Remainder Area)	0	3,223	3,854	63	53	123	0	123	26.2
251.00	Unincorporated El Dorado County (Remainder Area)	0	4,465	5,223	91	88	224	0	224	20.0
252.00	Unincorporated El Dorado County (Remainder Area)	0	20,232	24,935	422	434	1,130	0	1,130	17.9
253.00	Unincorporated El Dorado County (Remainder Area)	0	8,637	10,809	166	147	403	0	403	21.4
254.00	Unincorporated El Dorado County (Remainder Area)	0	6,155	7,315	128	116	295	0	295	20.9
255.00	Cameron Park	0	17,028	0	5,087	0	0	426	426	40.0
256.00	Cameron Park	0	46,408	1,915	13,815	47	121	1,042	1,163	39.9
257.00	Shingle Springs	0	30,259	6,774	11,179	153	389	960	1,349	22.4
258.00	Unincorporated El Dorado County (Remainder Area)	0	1,485	1,749	51	21	58	2	60	25.0
259.00	Unincorporated El Dorado County (Remainder Area)	0	1,819	2,262	31	30	78	0	78	23.3
260.00	Shingle Springs	0	5,677	58	1,817	2	4	146	150	37.7
261.00	Shingle Springs	0	15,334	4,173	3,626	92	252	282	534	28.7
262.00	Shingle Springs	0	12,901	4,871	3,014	121	308	238	546	23.6
263.00	Shingle Springs	0	6,135	4,995	534	108	296	35	331	18.5
264.00	Shingle Springs	0	4,761	2,290	629	50	137	45	182	26.2
265.00	Unincorporated El Dorado County (Remainder Area)	0	2,408	2,965	44	45	117	0	117	20.6
266.00	Unincorporated El Dorado County (Remainder Area)	0	2,362	2,170	117	42	92	4	96	24.7
267.00	Unincorporated El Dorado County (Remainder Area)	0	5,496	6,891	127	129	336	0	336	16.4
268.00	Unincorporated El Dorado County (Remainder Area)	0	3,278	3,761	133	69	180	6	186	17.7
269.00	Unincorporated El Dorado County (Remainder Area)	0	9,325	10,939	228	204	516	1	517	18.0
270.00	Unincorporated El Dorado County (Remainder Area)	0	2,473	3,221	42	44	113	0	113	21.8
271.00	Unincorporated El Dorado County (Remainder Area)	0	8,088	10,053	199	150	379	5	384	21.0
272.00	Unincorporated El Dorado County (Remainder Area)	0	6,800	7,760	363	131	347	23	370	18.4
273.00	Unincorporated El Dorado County (Remainder Area)	0	7,904	10,189	255	134	391	12	403	19.6
274.00	Unincorporated El Dorado County (Remainder Area)	0	15,445	13,859	1,331	233	618	99	717	21.6
275.00	Unincorporated El Dorado County (Remainder Area)	0	15,495	18,287	458	321	828	13	841	18.4
276.00	Cameron Park	0	9,014	10,844	268	224	541	12	553	16.3
277.00	Cameron Park	0	6,258	7,932	106	161	416	0	416	15.1
278.00	Unincorporated El Dorado County (Remainder Area)	0	5,210	6,797	84	91	247	0	247	21.1
279.00	Unincorporated El Dorado County (Remainder Area)	0	2,678	3,507	42	45	122	0	122	21.9
280.00	Unincorporated El Dorado County (Remainder Area)	0	1,778	2,200	33	37	98	0	98	18.1
281.00	Unincorporated El Dorado County (Remainder Area)	0	3,869	3,572	543	59	156	36	192	20.1
282.00	Unincorporated El Dorado County (Remainder Area)	0	1,747	2,152	33	39	103	0	103	16.9
283.00	Shingle Springs	0	16,088	3,776	2,073	0	0	161	161	99.9
284.00	Shingle Springs	0	1,621	1,091	305	25	65	25	90	18.1
285.00	Unincorporated El Dorado County (Remainder Area)	0	5,130	1,491	887	12	26	66	92	55.5
286.00	Unincorporated El Dorado County (Remainder Area)	0	1,776	2,318	29	36	95	0	95	18.6
287.00	Unincorporated El Dorado County (Remainder Area)	0	1,717	2,179	29	34	88	0	88	19.6
288.00	Unincorporated El Dorado County (Remainder Area)	0	2,632	3,324	46	51	135	0	135	19.5
289.00	Unincorporated El Dorado County (Remainder Area)	0	360	514	4	8	23	0	23	15.4
290.00	Unincorporated El Dorado County (Remainder Area)	0	2,416	3,228	37	44	129	0	129	18.8
291.00	Unincorporated El Dorado County (Remainder Area)	0	9,922	12,933	181	188	463	0	463	21.4
292.00	Unincorporated El Dorado County (Remainder Area)	0	4,576	6,311	64	72	210	0	210	21.8
293.00	Unincorporated El Dorado County (Remainder Area)	0	1,230	1,276	32	34	77	0	77	15.9
294.00	Unincorporated El Dorado County (Remainder Area)	0	4,021	4,645	94	97	247	0	247	16.3
295.00	Unincorporated El Dorado County (Remainder Area)	0	148,908	5,014	26,719	110	284	1,491	1,775	83.9
296.00	El Dorado Diamond Springs	0	9,633	6,665	855	117	305	56	361	26.7
297.00	Unincorporated El Dorado County (Remainder Area)	0	2,430	3,140	57	70	182	0	182	13.3
298.00	Unincorporated El Dorado County (Remainder Area)	0	3,313	3,810	75	79	206	0	206	16.1
299.00	Unincorporated El Dorado County (Remainder Area)	0	5,090	6,062	106	106	268	0	268	19.0
300.00	Unincorporated El Dorado County (Remainder Area)	0	1,197	1,390	26	28	71	0	71	16.9
301.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	1	2	0	2	0.1
302.00	Unincorporated El Dorado County (Remainder Area)	0	3,967	2,475	500	57	130	33	163	24.4
303.00	El Dorado Diamond Springs	0	3,470	3,661	91	106	231	0	231	15.0
304.00	El Dorado Diamond Springs	0	6,356	379	2,386	12	27	224	251	25.3
305.00	El Dorado Diamond Springs	0	7,603	0	3,158	1	2	283	285	26.7
306.00	El Dorado Diamond Springs	0	1,629	375	629	10	22	55	77	21.2
307.00	El Dorado Diamond Springs	0	617	494	38	16	36	2	38	16.2
308.00	El Dorado Diamond Springs	0	272	273	15	11	25	1	26	10.5
309.00	El Dorado Diamond Springs	0	533	434	52	14	32	4	36	14.8
310.00	El Dorado Diamond Springs	0	4,146	794	1,294	26	59	122	181	22.9

VMT Summary by Jurisdiction - 2018 Baseline Scenario

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311.00	El Dorado Diamond Springs	0	8,533	1,197	2,120	38	87	158	245	34.9
312.00	El Dorado Diamond Springs	0	870	891	49	31	70	3	73	11.9
313.00	El Dorado Diamond Springs	0	23,390	4,175	6,912	38	99	506	605	38.7
314.00	El Dorado Diamond Springs	0	2,981	3,093	154	81	206	8	214	13.9
315.00	Outside of County	0	0	0	0	0	0	0	0	-
316.00	El Dorado Diamond Springs	0	342	346	9	13	30	0	30	11.5
317.00	El Dorado Diamond Springs	0	206	210	5	8	18	0	18	11.3
318.00	Unincorporated El Dorado County (Remainder Area)	0	4,322	4,680	137	128	326	2	328	13.2
319.00	El Dorado Diamond Springs	0	1,220	1,220	91	38	99	6	105	11.6
320.00	Unincorporated El Dorado County (Remainder Area)	0	5,096	2,179	537	18	44	39	83	61.1
321.00	Unincorporated El Dorado County (Remainder Area)	0	5,291	6,703	102	104	256	0	256	20.6
322.00	Unincorporated El Dorado County (Remainder Area)	0	7,460	8,020	553	153	387	33	420	17.8
323.00	Unincorporated El Dorado County (Remainder Area)	0	2,846	3,454	85	51	129	4	133	21.4
324.00	Unincorporated El Dorado County (Remainder Area)	0	3,638	4,777	61	64	165	0	165	22.1
325.00	Unincorporated El Dorado County (Remainder Area)	0	706	878	14	16	39	0	39	17.9
326.00	Unincorporated El Dorado County (Remainder Area)	0	2,171	2,731	54	49	121	1	122	17.8
327.00	Placerville	0	1,704	2,003	39	40	101	0	101	16.9
328.00	Unincorporated El Dorado County (Remainder Area)	0	847	998	18	19	48	0	48	17.7
329.00	Placerville	0	4,862	5,451	124	139	317	0	317	15.3
330.00	Unincorporated El Dorado County (Remainder Area)	0	2,701	3,124	65	73	184	0	184	14.7
331.00	Unincorporated El Dorado County (Remainder Area)	0	5,824	7,134	116	110	274	0	274	21.3
332.00	Unincorporated El Dorado County (Remainder Area)	0	1,541	1,805	36	47	104	0	104	14.8
333.00	Unincorporated El Dorado County (Remainder Area)	0	4,529	5,675	86	91	226	0	226	20.1
334.00	Unincorporated El Dorado County (Remainder Area)	0	3,809	1,175	1,315	26	58	110	168	22.7
335.00	Unincorporated El Dorado County (Remainder Area)	0	3,013	3,285	124	77	165	5	170	17.7
336.00	Unincorporated El Dorado County (Remainder Area)	0	1,225	1,475	25	30	70	0	70	17.4
337.00	Unincorporated El Dorado County (Remainder Area)	0	9,197	7,630	869	121	302	62	364	25.3
338.00	Unincorporated El Dorado County (Remainder Area)	0	14,133	17,909	370	322	831	14	845	16.7
339.00	Unincorporated El Dorado County (Remainder Area)	0	8,581	12,365	118	188	410	0	410	20.9
340.00	Unincorporated El Dorado County (Remainder Area)	0	6,896	8,586	224	93	205	14	219	31.5
341.00	Unincorporated El Dorado County (Remainder Area)	0	1,489	1,918	86	31	71	8	79	18.9
342.00	Unincorporated El Dorado County (Remainder Area)	0	2,620	3,271	48	48	124	0	124	21.2
343.00	Unincorporated El Dorado County (Remainder Area)	0	3,485	4,097	63	53	116	0	116	30.1
344.00	Unincorporated El Dorado County (Remainder Area)	0	3,762	4,481	68	55	120	0	120	31.3
345.00	Unincorporated El Dorado County (Remainder Area)	0	1,796	1,949	35	29	63	0	63	28.4
346.00	Unincorporated El Dorado County (Remainder Area)	0	1,272	1,399	24	22	49	0	49	25.7
347.00	Unincorporated El Dorado County (Remainder Area)	0	2,911	3,675	48	42	108	0	108	26.9
348.00	Unincorporated El Dorado County (Remainder Area)	0	2,799	2,993	63	49	110	0	110	25.4
349.00	Unincorporated El Dorado County (Remainder Area)	0	6,297	8,014	252	83	191	18	209	30.1
350.00	Unincorporated El Dorado County (Remainder Area)	0	1,179	1,682	17	22	48	0	48	24.5
351.00	Unincorporated El Dorado County (Remainder Area)	0	1,305	1,880	16	23	50	0	50	26.0
352.00	Unincorporated El Dorado County (Remainder Area)	0	1,857	2,624	24	29	63	0	63	29.3
353.00	Unincorporated El Dorado County (Remainder Area)	0	9,027	13,265	99	167	365	1	366	24.7
354.00	Unincorporated El Dorado County (Remainder Area)	0	5,501	3,517	746	53	116	77	193	28.5
355.00	Placerville	1	14,292	6,555	2,957	241	550	244	794	18.0
356.00	Placerville	1	2,499	2,652	73	91	195	0	195	12.8
357.00	Unincorporated El Dorado County (Remainder Area)	0	4,889	3,827	367	89	209	21	230	21.3
358.00	Placerville	0	5,870	2,945	1,187	81	190	98	288	20.4
359.00	Unincorporated El Dorado County (Remainder Area)	0	4,285	5,085	93	105	254	0	254	16.9
360.00	Unincorporated El Dorado County (Remainder Area)	0	5,338	5,780	239	98	237	10	247	21.6
361.00	Placerville	1	17,728	10,267	4,156	458	938	392	1,330	13.3
362.00	Placerville	1	46,119	5,945	10,928	252	591	876	1,467	31.4
363.00	Unincorporated El Dorado County (Remainder Area)	0	327	343	9	13	31	0	31	10.6
364.00	Placerville	0	4,044	3,540	416	138	328	30	358	11.3
365.00	El Dorado Diamond Springs	0	10,889	8,653	1,046	322	722	71	793	13.7
366.00	El Dorado Diamond Springs	0	380	274	42	15	31	4	35	10.8
367.00	El Dorado Diamond Springs	0	4,054	0	1,960	0	0	197	197	20.6
368.00	El Dorado Diamond Springs	0	1,589	1,730	48	68	149	0	149	10.7
369.00	El Dorado Diamond Springs	0	5,670	5,750	283	228	507	13	520	10.9
370.00	El Dorado Diamond Springs	0	6,432	0	3,038	0	0	303	303	21.2
371.00	El Dorado Diamond Springs	0	740	795	18	21	47	0	47	15.9
372.00	El Dorado Diamond Springs	0	16,774	7,739	2,417	195	433	211	644	26.0

VMT Summary by Jurisdiction - 2018 Baseline Scenario

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373.00	El Dorado Diamond Springs	0	652	643	19	26	59	0	59	11.1
374.00	El Dorado Diamond Springs	0	414	329	29	13	28	2	30	13.6
375.00	El Dorado Diamond Springs	0	368	368	10	14	32	0	32	11.7
376.00	El Dorado Diamond Springs	0	973	935	57	34	77	3	80	12.2
377.00	El Dorado Diamond Springs	0	561	329	157	13	29	14	43	12.9
378.00	El Dorado Diamond Springs	0	667	652	19	27	59	0	59	11.3
379.00	El Dorado Diamond Springs	0	1,102	1,113	31	48	105	0	105	10.5
380.00	El Dorado Diamond Springs	0	256	245	7	12	26	0	26	9.7
381.00	El Dorado Diamond Springs	0	158	143	5	7	15	0	15	10.3
382.00	El Dorado Diamond Springs	0	261	239	8	11	24	0	24	10.8
383.00	Unincorporated El Dorado County (Remainder Area)	0	1,591	1,742	40	46	102	0	102	15.6
384.00	El Dorado Diamond Springs	0	3,654	3,970	95	120	267	0	267	13.7
385.00	El Dorado Diamond Springs	0	11,717	13,659	337	451	1,002	0	1,002	11.7
386.00	El Dorado Diamond Springs	0	2,657	2,922	67	90	200	0	200	13.3
387.00	El Dorado Diamond Springs	0	1,172	929	107	36	80	8	88	13.3
388.00	El Dorado Diamond Springs	0	6,359	0	3,067	0	0	303	303	21.0
389.00	El Dorado Diamond Springs	0	6,129	11	2,616	2	4	264	268	22.8
390.00	El Dorado Diamond Springs	0	4,307	3,894	359	182	379	23	402	10.7
391.00	El Dorado Diamond Springs	0	2,173	196	547	11	23	54	77	28.3
392.00	El Dorado Diamond Springs	0	671	600	23	28	58	0	58	11.5
393.00	El Dorado Diamond Springs	0	9,002	6,354	1,004	268	605	68	673	13.4
394.00	El Dorado Diamond Springs	0	186	202	5	8	22	0	22	8.5
395.00	Placerville	1	62,226	1,584	26,085	74	166	2,253	2,419	25.7
396.00	El Dorado Diamond Springs	0	28,140	0	5,846	0	0	439	439	64.1
397.00	El Dorado Diamond Springs	0	1,329	1,264	69	50	114	3	117	11.4
398.00	El Dorado Diamond Springs	0	413	322	38	14	32	3	35	11.9
399.00	El Dorado Diamond Springs	0	1,126	1,133	32	43	97	0	97	11.6
400.00	El Dorado Diamond Springs	0	313	262	11	16	33	0	33	9.4
401.00	Placerville	0	8,987	658	2,628	28	63	213	276	32.6
402.00	El Dorado Diamond Springs	0	3,541	1,448	1,078	51	133	106	239	14.8
403.00	El Dorado Diamond Springs	0	23,814	3,632	7,792	124	258	654	912	26.1
404.00	El Dorado Diamond Springs	0	1,343	409	459	19	42	49	91	14.8
405.00	El Dorado Diamond Springs	0	169	150	5	9	20	0	20	8.6
406.00	El Dorado Diamond Springs	0	18,956	553	3,787	24	53	286	339	56.0
407.00	El Dorado Diamond Springs	0	9,540	18	3,373	1	2	309	311	30.7
408.00	El Dorado Diamond Springs	0	4,167	22	1,742	1	2	182	184	22.6
409.00	Placerville	0	18,695	3,018	5,656	104	248	445	693	27.0
410.00	El Dorado Diamond Springs	0	24,455	14,637	3,607	426	1,031	277	1,308	18.7
411.00	Placerville	1	50,523	6,155	13,292	298	712	1,271	1,983	25.5
412.00	Unincorporated El Dorado County (Remainder Area)	0	2,967	3,203	79	86	206	0	206	14.4
413.00	Placerville	0	3,607	3,787	102	126	301	0	301	12.0
414.00	El Dorado Diamond Springs	0	2,618	129	1,180	7	15	120	135	19.5
415.00	Unincorporated El Dorado County (Remainder Area)	0	434	442	12	18	40	0	40	10.7
416.00	El Dorado Diamond Springs	0	148	145	4	9	19	0	19	7.9
417.00	Placerville	1	9,685	1,098	2,868	45	114	278	392	24.7
418.00	Placerville	1	3,170	0	673	0	0	64	64	49.5
419.00	Placerville	1	3,283	0	844	0	0	85	85	38.6
420.00	Placerville	1	1,760	957	498	42	100	52	152	11.5
421.00	Placerville	1	1,662	1,578	97	68	163	5	168	9.9
422.00	Placerville	1	52,703	6,323	24,673	278	652	1,907	2,559	20.6
423.00	Unincorporated El Dorado County (Remainder Area)	0	460	482	12	20	48	0	48	9.6
424.00	Placerville	0	10,237	4,839	2,517	171	391	228	619	16.6
425.00	Placerville	0	52,855	32,203	5,947	1,167	2,617	563	3,180	16.6
426.00	Placerville	0	859	990	19	33	82	0	82	10.5
427.00	Unincorporated El Dorado County (Remainder Area)	0	3,962	4,548	92	93	232	0	232	17.1
428.00	Unincorporated El Dorado County (Remainder Area)	0	643	741	15	22	55	0	55	11.7
429.00	Unincorporated El Dorado County (Remainder Area)	0	1,310	1,650	34	35	83	0	83	15.9
430.00	Unincorporated El Dorado County (Remainder Area)	0	2,529	2,476	178	58	137	10	147	17.2
431.00	Placerville	1	1,794	471	655	22	45	60	105	17.1
432.00	Unincorporated El Dorado County (Remainder Area)	0	15,284	10,519	2,696	309	729	229	958	16.0
433.00	Placerville	1	10,428	9,659	707	481	1,041	36	1,077	9.7
434.00	Placerville	1	673	587	23	33	71	0	71	9.5

VMT Summary by Jurisdiction - 2018 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
435.00	Placerville	1	1,186	645	243	36	77	27	104	11.4
436.00	Unincorporated El Dorado County (Remainder Area)	0	970	1,150	20	25	62	0	62	15.6
437.00	Unincorporated El Dorado County (Remainder Area)	0	5,377	5,676	248	117	287	12	299	18.0
438.00	Unincorporated El Dorado County (Remainder Area)	0	5,578	5,269	232	124	278	11	289	19.3
439.00	Unincorporated El Dorado County (Remainder Area)	0	5,421	6,310	172	156	350	3	353	15.4
440.00	Unincorporated El Dorado County (Remainder Area)	0	1,394	1,100	177	28	63	15	78	17.9
441.00	Placerville	1	362	377	9	12	29	0	29	12.6
442.00	Placerville	1	13,108	10,677	1,035	313	768	69	837	15.7
443.00	Unincorporated El Dorado County (Remainder Area)	0	1,458	1,567	36	38	85	0	85	17.1
444.00	Unincorporated El Dorado County (Remainder Area)	0	200	220	5	8	19	0	19	10.4
445.00	Placerville	0	1,044	902	151	23	56	11	67	15.5
446.00	Placerville	1	1,761	851	247	25	59	19	78	22.7
447.00	Unincorporated El Dorado County (Remainder Area)	0	3,244	3,964	67	76	189	0	189	17.1
448.00	Placerville	0	1,803	2,094	74	53	130	4	134	13.5
449.00	Unincorporated El Dorado County (Remainder Area)	0	540	573	14	14	30	0	30	18.0
450.00	Unincorporated El Dorado County (Remainder Area)	0	3,267	2,678	392	84	180	31	211	15.5
451.00	Unincorporated El Dorado County (Remainder Area)	0	980	1,034	25	27	58	0	58	16.9
452.00	Placerville	0	6,274	4,034	500	121	259	33	292	21.5
453.00	Placerville	1	2,919	3,086	120	145	310	1	311	9.4
454.00	Unincorporated El Dorado County (Remainder Area)	0	567	544	18	25	54	0	54	10.6
455.00	Unincorporated El Dorado County (Remainder Area)	0	2,712	3,062	67	73	172	0	172	15.8
456.00	Unincorporated El Dorado County (Remainder Area)	0	1,880	2,061	48	51	109	0	109	17.2
457.00	Unincorporated El Dorado County (Remainder Area)	0	2,808	3,060	129	62	137	5	142	19.8
458.00	Placerville	0	2,940	2,602	343	67	157	26	183	16.0
459.00	Placerville	0	309	353	7	11	26	0	26	12.0
460.00	Unincorporated El Dorado County (Remainder Area)	0	1,457	966	264	22	47	20	67	21.7
461.00	Unincorporated El Dorado County (Remainder Area)	0	1,567	222	616	6	14	59	73	21.4
462.00	Unincorporated El Dorado County (Remainder Area)	0	5,224	1,278	1,752	31	66	125	191	27.3
463.00	Unincorporated El Dorado County (Remainder Area)	0	4,473	7,256	39	85	194	0	194	23.0
464.00	Unincorporated El Dorado County (Remainder Area)	0	2,526	3,312	39	47	104	0	104	24.4
465.00	Unincorporated El Dorado County (Remainder Area)	0	3,956	5,701	114	58	134	16	150	26.4
466.00	Unincorporated El Dorado County (Remainder Area)	0	3,542	4,418	201	61	139	22	161	22.0
467.00	Unincorporated El Dorado County (Remainder Area)	0	2,484	3,848	23	39	89	0	89	27.9
468.00	Unincorporated El Dorado County (Remainder Area)	0	6,778	9,766	125	120	277	6	283	24.0
469.00	Unincorporated El Dorado County (Remainder Area)	0	4,092	5,682	136	59	131	15	146	28.1
470.00	Unincorporated El Dorado County (Remainder Area)	0	2,031	3,078	27	32	73	1	74	27.4
471.00	Unincorporated El Dorado County (Remainder Area)	0	1,477	2,039	54	23	53	6	59	25.2
472.00	Unincorporated El Dorado County (Remainder Area)	0	1,953	2,297	146	26	59	20	79	24.6
473.00	Unincorporated El Dorado County (Remainder Area)	0	602	576	30	10	23	2	25	24.1
474.00	Unincorporated El Dorado County (Remainder Area)	0	1,692	2,178	28	37	81	0	81	20.9
475.00	Unincorporated El Dorado County (Remainder Area)	0	1,797	2,384	27	38	83	0	83	21.7
476.00	Unincorporated El Dorado County (Remainder Area)	0	859	1,123	12	16	41	0	41	20.8
477.00	Unincorporated El Dorado County (Remainder Area)	0	2,038	2,558	124	30	69	15	84	24.2
478.00	Unincorporated El Dorado County (Remainder Area)	0	1,481	1,914	24	30	66	0	66	22.5
479.00	Unincorporated El Dorado County (Remainder Area)	0	4,068	3,155	440	51	118	37	155	26.3
480.00	Unincorporated El Dorado County (Remainder Area)	0	1,298	1,999	13	20	46	0	46	28.4
481.00	Unincorporated El Dorado County (Remainder Area)	0	1,335	2,030	15	20	44	0	44	30.4
482.00	Unincorporated El Dorado County (Remainder Area)	0	5,633	7,942	92	74	163	3	166	34.0
483.00	Unincorporated El Dorado County (Remainder Area)	0	4,435	5,257	173	115	249	9	258	17.2
484.00	Unincorporated El Dorado County (Remainder Area)	0	6,755	5,646	945	91	227	114	341	19.8
485.00	Unincorporated El Dorado County (Remainder Area)	0	1,058	1,522	11	15	37	0	37	28.3
486.00	Unincorporated El Dorado County (Remainder Area)	0	4,063	5,882	47	69	156	0	156	26.1
487.00	Unincorporated El Dorado County (Remainder Area)	0	11,817	11,343	739	221	519	36	555	21.3
488.00	Unincorporated El Dorado County (Remainder Area)	0	5,531	7,566	86	107	242	0	242	22.9
489.00	Unincorporated El Dorado County (Remainder Area)	0	6,881	7,088	660	133	300	58	358	19.2
490.00	Unincorporated El Dorado County (Remainder Area)	0	1,174	1,529	19	24	60	0	60	19.6
491.00	Unincorporated El Dorado County (Remainder Area)	0	7,374	9,114	177	160	399	3	402	18.3
492.00	Unincorporated El Dorado County (Remainder Area)	0	5,053	4,473	408	71	176	31	207	24.4
493.00	Unincorporated El Dorado County (Remainder Area)	0	5,090	4,560	369	72	178	26	204	24.9
494.00	Unincorporated El Dorado County (Remainder Area)	0	3,256	3,963	138	68	170	10	180	18.1
495.00	Unincorporated El Dorado County (Remainder Area)	0	652	851	11	16	40	0	40	16.4
496.00	Unincorporated El Dorado County (Remainder Area)	0	7,363	4,566	830	81	201	67	268	27.5

VMT Summary by Jurisdiction - 2018 Baseline Scenario

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497.00	Unincorporated El Dorado County (Remainder Area)	0	4,324	5,722	101	88	224	3	227	19.0
498.00	Unincorporated El Dorado County (Remainder Area)	0	3,446	4,471	104	70	158	6	164	21.0
499.00	Unincorporated El Dorado County (Remainder Area)	0	1,340	1,788	22	30	75	0	75	17.9
500.00	Unincorporated El Dorado County (Remainder Area)	0	4,091	1,341	603	11	26	51	77	53.3
501.00	Unincorporated El Dorado County (Remainder Area)	0	2,805	1,018	768	22	49	83	132	21.3
502.00	Unincorporated El Dorado County (Remainder Area)	0	7,007	7,684	351	117	272	18	290	24.2
503.00	Unincorporated El Dorado County (Remainder Area)	0	4,159	0	1,010	1	2	76	78	53.2
504.00	Unincorporated El Dorado County (Remainder Area)	0	6,094	6,503	344	141	313	19	332	18.4
505.00	Unincorporated El Dorado County (Remainder Area)	0	73	86	1	3	7	0	7	11.0
506.00	Unincorporated El Dorado County (Remainder Area)	0	1,026	1,245	22	28	62	0	62	16.5
507.00	Unincorporated El Dorado County (Remainder Area)	0	2,748	2,382	392	50	116	37	153	17.9
508.00	Unincorporated El Dorado County (Remainder Area)	0	6,688	3,507	1,838	85	184	186	370	18.1
509.00	Unincorporated El Dorado County (Remainder Area)	0	392	428	22	12	27	2	29	13.7
510.00	Unincorporated El Dorado County (Remainder Area)	0	3,230	3,509	157	92	199	10	209	15.5
511.00	Unincorporated El Dorado County (Remainder Area)	0	2,738	1,886	359	45	105	33	138	19.9
512.00	Unincorporated El Dorado County (Remainder Area)	0	2,833	1,982	367	37	86	27	113	25.1
513.00	Unincorporated El Dorado County (Remainder Area)	0	7,428	10,752	84	142	354	0	354	21.0
514.00	Unincorporated El Dorado County (Remainder Area)	0	31,897	46,989	311	622	1,551	0	1,551	20.6
515.00	Unincorporated El Dorado County (Remainder Area)	0	3,604	4,785	105	69	176	8	184	19.6
516.00	Unincorporated El Dorado County (Remainder Area)	0	8,117	11,779	87	142	362	0	362	22.4
517.00	Unincorporated El Dorado County (Remainder Area)	0	18,953	21,253	1,114	388	857	101	958	19.8
518.00	Unincorporated El Dorado County (Remainder Area)	0	11,917	15,759	307	289	671	17	688	17.3
519.00	Unincorporated El Dorado County (Remainder Area)	0	5,880	7,837	191	142	330	12	342	17.2
520.00	Unincorporated El Dorado County (Remainder Area)	0	11,943	16,149	268	266	617	12	629	19.0
521.00	Unincorporated El Dorado County (Remainder Area)	0	10,860	13,145	581	290	641	60	701	15.5
522.00	Unincorporated El Dorado County (Remainder Area)	0	5,096	7,230	64	85	221	0	221	23.1
523.00	Unincorporated El Dorado County (Remainder Area)	0	16,440	10,403	1,911	240	588	206	794	20.7
524.00	Unincorporated El Dorado County (Remainder Area)	0	14,687	12,653	1,114	205	490	103	593	24.8
525.00	Unincorporated El Dorado County (Remainder Area)	0	4,887	7,158	44	85	199	0	199	24.5
526.00	Unincorporated El Dorado County (Remainder Area)	0	245	336	3	5	12	0	12	20.1
527.00	Unincorporated El Dorado County (Remainder Area)	0	7,769	9,527	361	162	380	38	418	18.6
528.00	Unincorporated El Dorado County (Remainder Area)	0	59,936	84,546	793	1,001	2,429	72	2,501	24.0
529.00	Unincorporated El Dorado County (Remainder Area)	0	918	1,150	13	15	36	0	36	25.3
530.00	Unincorporated El Dorado County (Remainder Area)	0	12,922	17,323	192	191	462	0	462	28.0
531.00	Unincorporated El Dorado County (Remainder Area)	0	2,524	3,389	35	34	82	0	82	30.7
532.00	Unincorporated El Dorado County (Remainder Area)	0	3,996	5,157	59	61	147	0	147	27.1
533.00	Unincorporated El Dorado County (Remainder Area)	0	9,310	8,574	645	105	271	34	305	30.5
534.00	Unincorporated El Dorado County (Remainder Area)	0	3,782	4,952	52	53	128	0	128	29.5
535.00	Unincorporated El Dorado County (Remainder Area)	0	5,931	7,811	74	91	221	0	221	26.8
536.00	Unincorporated El Dorado County (Remainder Area)	0	5,088	6,583	64	82	200	0	200	25.5
537.00	Unincorporated El Dorado County (Remainder Area)	0	10,390	14,148	106	165	402	0	402	25.9
538.00	Unincorporated El Dorado County (Remainder Area)	0	3,965	3,049	304	44	107	22	129	30.8
539.00	Unincorporated El Dorado County (Remainder Area)	0	12,990	1,298	2,075	6	15	166	181	72.0
540.00	Unincorporated El Dorado County (Remainder Area)	0	2,856	0	572	0	0	53	53	53.9
541.00	Unincorporated El Dorado County (Remainder Area)	0	1,050	1,118	61	18	42	6	48	21.8
542.00	Unincorporated El Dorado County (Remainder Area)	0	3,610	3,094	413	52	123	37	160	22.6
543.00	Unincorporated El Dorado County (Remainder Area)	0	10,542	2,434	1,775	49	114	107	221	47.6
544.00	Unincorporated El Dorado County (Remainder Area)	0	679	496	104	9	21	8	29	23.4
545.00	Unincorporated El Dorado County (Remainder Area)	0	1,521	2,046	16	23	54	0	54	28.3
546.00	Unincorporated El Dorado County (Remainder Area)	0	4,811	6,428	54	61	143	0	143	33.8
547.00	Unincorporated El Dorado County (Remainder Area)	0	4,019	523	481	10	23	46	69	57.9
548.00	Unincorporated El Dorado County (Remainder Area)	0	17,475	23,311	467	386	910	22	932	18.7
549.00	Unincorporated El Dorado County (Remainder Area)	0	2,160	2,718	39	42	99	0	99	21.8
550.00	Unincorporated El Dorado County (Remainder Area)	0	265	347	4	7	18	0	18	14.7
551.00	Unincorporated El Dorado County (Remainder Area)	0	5,421	2,524	783	41	105	54	159	34.0
552.00	Unincorporated El Dorado County (Remainder Area)	0	2,436	423	500	8	19	32	51	48.0
553.00	Unincorporated El Dorado County (Remainder Area)	0	1,568	2,058	26	32	75	0	75	21.0
554.00	Unincorporated El Dorado County (Remainder Area)	0	4,047	5,248	105	83	194	4	198	20.4
555.00	Unincorporated El Dorado County (Remainder Area)	0	1,654	2,238	24	34	80	0	80	20.6
556.00	Unincorporated El Dorado County (Remainder Area)	0	5,091	6,971	66	82	192	0	192	26.6
557.00	Unincorporated El Dorado County (Remainder Area)	0	1,694	2,093	31	35	82	1	83	20.5
558.00	Unincorporated El Dorado County (Remainder Area)	0	2,716	2,988	163	36	84	19	103	26.3

VMT Summary by Jurisdiction - 2018 Baseline Scenario

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559.00	Unincorporated El Dorado County (Remainder Area)	0	1,381	1,831	17	25	59	0	59	23.6
560.00	Unincorporated El Dorado County (Remainder Area)	0	1,604	1,673	100	27	63	10	73	21.9
561.00	Unincorporated El Dorado County (Remainder Area)	0	1,182	1,578	18	22	52	0	52	22.7
562.00	Unincorporated El Dorado County (Remainder Area)	0	4,016	5,900	39	62	145	0	145	27.6
563.00	Unincorporated El Dorado County (Remainder Area)	0	2,211	3,362	17	32	71	0	71	31.3
564.00	Unincorporated El Dorado County (Remainder Area)	0	620	834	10	14	33	0	33	18.5
565.00	Unincorporated El Dorado County (Remainder Area)	0	2,632	3,669	38	56	129	0	129	20.4
566.00	Unincorporated El Dorado County (Remainder Area)	0	3,996	5,387	70	93	220	1	221	18.1
567.00	Unincorporated El Dorado County (Remainder Area)	0	671	816	25	18	42	2	44	15.4
568.00	Unincorporated El Dorado County (Remainder Area)	0	931	1,259	14	26	62	0	62	15.1
569.00	Unincorporated El Dorado County (Remainder Area)	0	3,705	2,852	298	61	144	31	175	21.1
570.00	Unincorporated El Dorado County (Remainder Area)	0	4,738	2,119	775	40	92	92	184	25.7
571.00	Unincorporated El Dorado County (Remainder Area)	0	1,371	1,843	22	33	76	0	76	18.0
572.00	Unincorporated El Dorado County (Remainder Area)	0	1,867	1,377	262	25	61	34	95	19.6
573.00	Unincorporated El Dorado County (Remainder Area)	0	6,504	7,840	121	89	197	2	199	32.7
574.00	Unincorporated El Dorado County (Remainder Area)	0	5,059	8,006	30	71	174	0	174	29.1
575.00	Unincorporated El Dorado County (Remainder Area)	0	2,777	4,117	16	29	71	0	71	39.1
576.00	Unincorporated El Dorado County (Remainder Area)	0	1,093	1,543	16	19	42	1	43	25.4
577.00	Unincorporated El Dorado County (Remainder Area)	0	753	1,117	7	13	29	0	29	26.2
578.00	Unincorporated El Dorado County (Remainder Area)	0	23,468	37,261	106	370	817	0	817	28.7
579.00	Unincorporated El Dorado County (Remainder Area)	0	3,788	5,279	100	38	96	12	108	34.9
580.00	Unincorporated El Dorado County (Remainder Area)	0	2,893	4,142	62	35	89	5	94	30.8
581.00	Unincorporated El Dorado County (Remainder Area)	0	4,278	5,106	291	43	95	32	127	33.8
582.00	Unincorporated El Dorado County (Remainder Area)	0	1,258	1,708	16	13	34	0	34	37.2
583.00	Unincorporated El Dorado County (Remainder Area)	0	27,736	43,328	212	352	774	10	784	35.4
584.00	Unincorporated El Dorado County (Remainder Area)	0	1,736	2,097	55	18	40	3	43	40.7
585.00	Unincorporated El Dorado County (Remainder Area)	0	9,569	14,366	78	124	273	0	273	35.1
586.00	Unincorporated El Dorado County (Remainder Area)	0	5,837	2,525	1,555	51	91	92	183	32.0
587.00	Unincorporated El Dorado County (Remainder Area)	0	2,277	3,414	17	39	99	0	99	22.9
588.00	Unincorporated El Dorado County (Remainder Area)	0	19,726	30,121	125	323	805	0	805	24.5
589.00	Unincorporated El Dorado County (Remainder Area)	0	393	627	2	3	12	0	12	32.7
590.00	Unincorporated El Dorado County (Remainder Area)	0	830	1,145	12	18	46	0	46	18.2
591.00	Unincorporated El Dorado County (Remainder Area)	0	86	122	1	3	8	0	8	11.3
592.00	Unincorporated El Dorado County (Remainder Area)	0	12,714	13,276	739	339	749	91	840	15.1
593.00	Unincorporated El Dorado County (Remainder Area)	0	6,940	9,089	265	151	382	28	410	16.9
594.00	Unincorporated El Dorado County (Remainder Area)	0	16,945	24,780	182	312	790	5	795	21.3
595.00	Unincorporated El Dorado County (Remainder Area)	0	1,939	1,825	265	25	56	31	87	22.2
596.00	Unincorporated El Dorado County (Remainder Area)	0	2,829	2,777	221	34	85	25	110	25.8
597.00	Unincorporated El Dorado County (Remainder Area)	0	11,029	4,036	1,914	106	234	278	512	21.5
598.00	Unincorporated El Dorado County (Remainder Area)	0	1,719	544	259	14	31	35	66	26.1
599.00	Unincorporated El Dorado County (Remainder Area)	0	712	969	11	17	38	0	38	18.9
600.00	Unincorporated El Dorado County (Remainder Area)	0	11,268	11,074	1,266	205	453	130	583	19.3
601.00	Unincorporated El Dorado County (Remainder Area)	0	1,338	1,903	4	10	22	0	22	60.9
602.00	Unincorporated El Dorado County (Remainder Area)	0	433	137	53	3	5	2	7	59.0
603.00	Unincorporated El Dorado County (Remainder Area)	0	906	729	84	11	20	2	22	42.0
604.00	Unincorporated El Dorado County (Remainder Area)	0	1,419	1,776	109	17	33	3	36	39.3
605.00	Unincorporated El Dorado County (Remainder Area)	0	1,653	1,766	86	18	38	2	40	41.3
606.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
607.00	Unincorporated El Dorado County (Remainder Area)	0	3,530	4,854	12	19	49	0	49	71.5
608.00	Unincorporated El Dorado County (Remainder Area)	0	6	0	0	1	2	0	2	2.9
609.00	Unincorporated El Dorado County (Remainder Area)	0	3,028	3,208	117	34	72	4	76	40.0
610.00	El Dorado Hills	0	38,894	185	20,450	0	0	1,745	1,745	22.3
611.00	El Dorado Hills	0	315	0	10	153	0	1	1	315.1
612.00	El Dorado Hills	0	79,244	0	44,405	0	0	3,121	3,121	25.4
613.00	Unincorporated El Dorado County (Remainder Area)	0	71	67	1	2	5	0	5	13.8
614.00	El Dorado Hills	0	5,951	7,036	115	150	383	0	383	15.6
615.00	El Dorado Hills	0	12,122	9,014	1,032	150	402	75	477	25.4
616.00	El Dorado Hills	0	1,374	1,639	25	37	94	0	94	14.7
617.00	El Dorado Hills	0	20,608	12,689	1,251	187	547	118	665	31.0
618.00	El Dorado Hills	0	3,136	0	1,248	0	0	146	146	21.5
619.00	El Dorado Hills	0	3,458	0	1,252	0	0	151	151	22.9
620.00	El Dorado Hills	0	17,790	3,464	1,776	0	0	188	188	94.6

VMT Summary by Jurisdiction - 2018 Baseline Scenario

TAZ	Community Region	In the City of Placerville (1=Yes, 0=N	Total OD VMT	Home-based PA VMT	Home-Based Work PA VMT	Households	Population	Employement	Service Population	Total OD VMT per Service Population
621.00	El Dorado Hills	0	14,299	18,797	223	327	957	0	957	14.9
622.00	El Dorado Hills	0	21,947	21,514	1,625	370	1,083	147	1,230	17.8
623.00	Unincorporated El Dorado County (Remainder Area)	0	393	0	173	0	0	16	16	24.5
624.00	El Dorado Hills	0	15,659	17,550	1,193	308	905	96	1,001	15.7
625.00	El Dorado Hills	0	861	0	418	0	0	40	40	21.5
626.00	Unincorporated El Dorado County (Remainder Area)	0	8,700	7,509	1,120	164	383	98	481	18.1
627.00	Unincorporated El Dorado County (Remainder Area)	0	54,214	0	11,337	0	0	897	897	60.4
628.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
629.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
630.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
631.00	Unincorporated El Dorado County (Remainder Area)	0	0	0	0	0	0	0	0	-
632.00	Unincorporated El Dorado County (Remainder Area)	0	1,446	1,742	25	37	94	0	94	15.4
633.00	Unincorporated El Dorado County (Remainder Area)	0	6,287	7,481	122	150	379	0	379	16.6
634.00	Unincorporated El Dorado County (Remainder Area)	0	6,451	7,748	122	150	379	0	379	17.0
635.00	Unincorporated El Dorado County (Remainder Area)	0	4,874	5,840	92	113	286	0	286	17.0
636.00	Unincorporated El Dorado County (Remainder Area)	0	4,366	6,094	81	120	322	0	322	13.6
637.00	Unincorporated El Dorado County (Remainder Area)	0	8,062	9,923	140	171	458	0	458	17.6
638.00	Unincorporated El Dorado County (Remainder Area)	0	1,037	1,266	16	23	62	0	62	16.8
639.00	Unincorporated El Dorado County (Remainder Area)	0	2,263	2,810	36	46	123	0	123	18.4
640.00	Unincorporated El Dorado County (Remainder Area)	0	7,666	9,534	125	176	472	0	472	16.2
641.00	Unincorporated El Dorado County (Remainder Area)	0	2,088	2,601	33	46	123	0	123	16.9
642.00	Unincorporated El Dorado County (Remainder Area)	0	28,454	33,516	1,269	637	1,708	93	1,801	15.8
643.00	Unincorporated El Dorado County (Remainder Area)	0	9,822	12,118	163	216	579	0	579	17.0
644.00	Unincorporated El Dorado County (Remainder Area)	0	2,922	3,676	47	76	194	0	194	15.1
645.00	Unincorporated El Dorado County (Remainder Area)	0	21,198	24,639	949	415	1,059	51	1,110	19.1
646.00	Unincorporated El Dorado County (Remainder Area)	0	8,819	11,040	154	192	490	0	490	18.0
647.00	Unincorporated El Dorado County (Remainder Area)	0	1,587	1,896	69	38	97	6	103	15.4
648.00	Unincorporated El Dorado County (Remainder Area)	0	1,814	2,169	46	38	97	2	99	18.3
649.00	Unincorporated El Dorado County (Remainder Area)	0	5,510	3,117	31	38	97	0	97	56.8
650.00	Outside of County	0	3,018,017	1,487,652	470,023	0	0	0	0	-
651.00	Outside of County	0	28,430	14,325	4,161	0	0	0	0	-
652.00	Outside of County	0	0	0	0	0	0	0	0	-
653.00	Outside of County	0	391,601	159,733	51,129	0	0	0	0	-
654.00	Outside of County	0	56,157	9,082	2,855	0	0	0	0	-
655.00	Outside of County	0	269,259	107,794	35,163	0	0	0	0	-
656.00	Outside of County	0	76,873	18,147	8,671	0	0	0	0	-
657.00	Outside of County	0	186,257	8,193	3,831	0	0	0	0	-
658.00	Outside of County	0	0	0	0	0	0	0	0	-
659.00	Outside of County	0	7,525	3,130	1,406	0	0	0	0	-
660.00	Outside of County	0	164,217	81,865	31,549	0	0	0	0	-
661.00	Outside of County	0	156,422	71,575	25,672	0	0	0	0	-
662.00	Outside of County	0	700,690	338,333	119,222	0	0	0	0	-
663.00	Outside of County	0	679,400	227,123	80,896	0	0	0	0	-
664.00	Outside of County	0	347,429	190,135	54,774	0	0	0	0	-
665.00	Outside of County	0	199,364	79,618	30,980	0	0	0	0	-
666.00	Outside of County	0	88,161	45,079	14,335	0	0	0	0	-
667.00	Outside of County	0	0	0	0	0	0	0	0	-
668.00	Outside of County	0	512,377	310,784	0	0	0	0	0	-
669.00	Outside of County	0	0	0	0	0	0	0	0	-
670.00	Outside of County	0	0	0	0	0	0	0	0	-
671.00	Outside of County	0	169,913	96,013	23,735	0	0	0	0	-
672.00	Outside of County	0	33,262	34,250	0	0	0	0	0	-
673.00	Outside of County	0	24,884	14,900	0	0	0	0	0	-
674.00	Outside of County	0	355,415	29,972	0	0	0	0	0	-

Appendix B

Generations at Green Valley (Project) Vehicle Miles Traveled (VMT) Details

Appendix B - Generations at Green Valley (Project) Vehicle Miles Traveled (VMT) Details

Jurisdiction			Population Details	
	Home-based PA VMT	Home-based VMT per Capita	Total Households	Total Population
Generations at Green Valley	17,810	19.6	380	908

Appendix B - Generations at Green Valley (Project) Vehicle Miles Traveled (VMT) Details

TAZ	Community Region			Population Details	
		Home-based PA VMT	Home-based VMT per Capita	Total Households	Total Population
1	Unincorporated El Dorado County	2,352	31.5	46	75
2	Unincorporated El Dorado County	30,923	26.1	525	1,185
3	Unincorporated El Dorado County	3,516	40.1	34	88
4	Unincorporated El Dorado County	1,420	42.1	16	34
5	Unincorporated El Dorado County	3,792	52.3	33	73
6	Unincorporated El Dorado County	15,350	23.8	270	646
7	Unincorporated El Dorado County	31,279	28.0	516	1,119
8	Unincorporated El Dorado County	743	20.6	14	36
9	Unincorporated El Dorado County	31,767	25.6	482	1,240
10	Outside of County	0	0.0	0	0
11	Outside of County	0	0.0	0	0
12	Outside of County	29,829	17.1	663	1,741
13	Outside of County	34,464	17.3	775	1,995
14	Outside of County	71,284	17.5	1,502	4,068
15	Outside of County	481	21.4	10	23
16	Outside of County	8,273	21.9	149	378
17	Outside of County	0	0.0	0	0
18	Outside of County	584	5.0	41	116
19	Outside of County	0	0.0	0	0
20	Outside of County	17	17.1	1	1
21	Outside of County	47	23.5	1	2
22	Outside of County	259	43.2	2	6
23	Outside of County	23,288	85.4	101	273
24	Outside of County	26	26.3	1	1
25	Outside of County	0	0.0	0	0
26	Outside of County	0	0.0	0	0
27	Outside of County	258	43.0	2	6
28	Outside of County	14,595	43.9	123	332
29	Outside of County	8,965	46.7	72	192
30	Outside of County	0	0.0	0	0
31	Outside of County	3,749	39.8	44	94
32	Outside of County	6,433	4.2	676	1,526
33	Outside of County	0	0.0	0	0
34	Outside of County	8,708	45.6	75	191
35	Outside of County	0	0.0	0	0
36	Outside of County	0	0.0	0	0
37	Outside of County	0	0.0	0	0
38	Outside of County	0	0.0	0	0
39	Outside of County	21,203	13.5	666	1,569
40	Outside of County	23,734	11.4	916	2,079
41	Outside of County	25,184	19.8	544	1,271
42	Outside of County	0	0.0	0	0
43	Outside of County	60,823	29.7	828	2,045
44	Outside of County	74,563	28.5	1,069	2,614
45	Outside of County	21,640	10.5	906	2,057
46	Outside of County	0	0.0	0	0
47	Outside of County	0	0.0	0	0
48	Outside of County	67,787	22.1	1,203	3,068
49	Outside of County	0	0.0	0	0
50	Outside of County	78,789	32.4	1,025	2,430
51	Outside of County	61,278	14.4	1,768	4,253
52	Outside of County	24,275	36.4	297	667
53	Outside of County	80,933	23.4	1,335	3,452
54	Outside of County	33,636	29.2	476	1,153
55	Outside of County	36,065	22.8	675	1,583
56	Outside of County	39,819	20.6	820	1,933
57	Outside of County	0	0.0	0	0
58	Outside of County	22,900	19.7	465	1,160
59	Outside of County	106	26.5	2	4
60	Outside of County	15,751	33.0	238	478
61	Outside of County	173,434	33.2	2,205	5,227
62	Outside of County	303	37.9	4	8
63	Outside of County	16,537	21.9	340	756
64	Outside of County	56,296	26.1	865	2,156
65	Outside of County	11,192	33.1	136	338
66	Outside of County	48,207	24.7	826	1,950
67	Outside of County	0	0.0	0	0
68	Outside of County	30,124	22.9	616	1,314
69	Outside of County	83,412	20.2	1,588	4,122
70	Outside of County	807	0.0	0	0
71	Outside of County	104,034	33.7	1,231	3,088
72	Outside of County	363	0.0	0	0
73	Outside of County	0	0.0	0	0
74	Outside of County	19,461	19.0	435	1,022
75	Outside of County	67,989	15.4	1,936	4,401

Appendix B - Generations at Green Valley (Project) Vehicle Miles Traveled (VMT) Details

TAZ	Community Region			Population Details	
		Home-based PA VMT	Home-based VMT per Capita	Total Households	Total Population
76	Outside of County	21,531	15.9	508	1,352
77	Outside of County	70,249	25.0	1,155	2,810
78	Outside of County	0	0.0	0	0
79	Outside of County	0	0.0	0	0
80	Outside of County	0	0.0	0	0
81	Outside of County	0	0.0	0	0
82	Outside of County	0	0.0	0	0
83	Outside of County	0	0.0	0	0
84	Outside of County	45,478	16.1	1,226	2,817
85	Outside of County	56,624	17.4	1,295	3,246
86	Outside of County	67,983	15.2	1,968	4,487
87	Outside of County	59,140	13.6	2,114	4,344
88	Outside of County	44,318	16.5	1,099	2,679
89	Outside of County	0	0.0	0	0
90	Outside of County	0	0.0	0	0
91	Outside of County	15,047	15.7	383	961
92	Outside of County	54,466	20.1	1,139	2,709
93	Outside of County	0	0.0	0	0
94	Outside of County	443	29.5	6	15
95	Outside of County	0	0.0	0	0
96	Outside of County	0	0.0	0	0
97	Outside of County	92	23.1	2	4
98	Outside of County	337	13.7	10	25
99	Outside of County	25,160	12.9	791	1,944
100	Outside of County	6,776	33.4	84	203
101	Outside of County	0	0.0	0	0
102	Outside of County	4,981	32.6	51	153
103	Outside of County	65,258	29.7	910	2,200
104	Outside of County	0	0.0	0	0
105	Outside of County	0	0.0	0	0
106	Outside of County	0	0.0	0	0
107	Outside of County	0	0.0	0	0
108	Outside of County	0	0.0	0	0
109	Outside of County	0	0.0	0	0
110	Outside of County	8,197	19.3	205	426
111	Outside of County	11,375	15.6	350	728
112	Outside of County	35,635	18.3	747	1,946
113	Outside of County	0	0.0	0	0
114	Outside of County	28,335	14.5	770	1,950
115	Outside of County	0	0.0	0	0
116	Outside of County	0	0.0	0	0
117	Outside of County	30,716	29.8	401	1,031
118	Outside of County	78,633	13.3	2,313	5,898
119	Outside of County	7,200	13.8	214	522
120	Outside of County	0	0.0	0	0
121	Outside of County	51,567	12.1	1,642	4,261
122	Outside of County	18,406	12.0	619	1,530
123	Outside of County	6,929	13.1	200	529
124	Outside of County	51,953	19.8	1,240	2,628
125	Outside of County	9,784	12.2	389	801
126	Outside of County	4,132	14.8	136	279
127	Outside of County	33,347	19.7	800	1,693
128	Outside of County	37,729	18.3	999	2,062
129	Outside of County	45,556	20.3	994	2,246
130	Outside of County	9,143	12.4	369	740
131	Outside of County	19,030	15.4	607	1,234
132	Outside of County	19,457	21.8	407	894
133	Outside of County	56,680	10.9	2,087	5,211
134	Outside of County	28,979	11.8	1,075	2,460
135	Outside of County	0	0.0	0	0
136	Outside of County	27,637	16.6	669	1,669
137	Outside of County	97,603	14.5	2,349	6,735
138	El Dorado Diamond Springs	5,034	13.7	161	367
139	El Dorado Diamond Springs	1,588	11.7	62	135
140	El Dorado Diamond Springs	237	8.7	10	27
141	Unincorporated El Dorado County	1,864	38.2	21	49
142	Unincorporated El Dorado County	7,496	21.2	157	353
143	Unincorporated El Dorado County	3,603	17.2	93	209
144	Unincorporated El Dorado County	3,781	20.3	74	186
145	Unincorporated El Dorado County	782	11.4	30	69
146	El Dorado Diamond Springs	1,603	11.1	64	145
147	El Dorado Diamond Springs	4,293	12.0	159	359
148	Outside of County	244,530	46.2	2,250	5,293
149	Shingle Springs	1,577	16.1	37	98
150	Unincorporated El Dorado County	8,159	31.4	109	260

Appendix B - Generations at Green Valley (Project) Vehicle Miles Traveled (VMT) Details

TAZ	Community Region			Population Details	
		Home-based PA VMT	Home-based VMT per Capita	Total Households	Total Population
151	Unincorporated El Dorado County	1,920	28.6	23	67
152	Shingle Springs	5,650	17.9	122	315
153	Unincorporated El Dorado County	6,416	16.5	178	388
154	Unincorporated El Dorado County	3,027	15.4	84	196
155	Shingle Springs	2,970	18.4	62	161
156	Unincorporated El Dorado County	2,575	38.3	27	67
157	El Dorado Hills	13,359	16.5	274	807
158	Cameron Park	23,186	16.9	598	1,373
159	Cameron Park	16,121	18.4	340	878
160	Shingle Springs	9,035	18.0	194	501
161	El Dorado Hills	7,479	26.5	105	283
162	El Dorado Hills	93,318	21.1	1,503	4,414
163	El Dorado Hills	330	16.0	7	21
164	El Dorado Hills	0	0.0	0	0
165	El Dorado Hills	18,479	18.5	373	997
166	Outside of County	43,376	22.9	749	1,892
167	El Dorado Hills	48,985	16.9	1,297	2,904
168	El Dorado Hills	34,920	13.9	1,125	2,519
169	El Dorado Hills	151	0.0	0	0
170	El Dorado Hills	0	0.0	0	0
171	El Dorado Hills	12,082	15.3	441	790
172	El Dorado Hills	0	0.0	0	0
173	El Dorado Hills	0	0.0	0	0
174	Unincorporated El Dorado County	1,437	38.4	15	37
175	Unincorporated El Dorado County	812	31.0	11	26
176	Unincorporated El Dorado County	2,164	31.3	29	69
177	Unincorporated El Dorado County	639	25.7	10	25
178	Unincorporated El Dorado County	2,256	29.2	30	77
179	Unincorporated El Dorado County	15	5.6	1	3
180	El Dorado Hills	3,642	24.4	58	149
181	El Dorado Hills	4	1.5	1	3
182	Cameron Park	64,291	20.1	1,186	3,202
183	Unincorporated El Dorado County	7,128	20.1	152	355
184	Cameron Park	18,666	19.4	357	964
185	Cameron Park	6,269	18.3	149	342
186	Cameron Park	90	13.1	3	7
187	Cameron Park	9,010	16.4	239	549
188	Cameron Park	6,462	15.0	188	432
189	Unincorporated El Dorado County	3,493	33.7	37	104
190	Unincorporated El Dorado County	14,108	21.3	237	663
191	El Dorado Hills	1,039	19.6	19	53
192	El Dorado Hills	1,371	19.7	25	70
193	El Dorado Hills	42,187	18.5	852	2,284
194	El Dorado Hills	21,945	17.1	439	1,285
195	El Dorado Hills	501	19.6	10	26
196	Outside of County	50,801	20.3	923	2,503
197	El Dorado Hills	4,756	21.7	86	219
198	El Dorado Hills	42,952	17.3	887	2,482
199	El Dorado Hills	3,457	19.9	62	173
200	El Dorado Hills	312	17.5	7	18
201	El Dorado Hills	7,740	17.6	150	439
202	El Dorado Hills	39,222	19.0	737	2,062
203	El Dorado Hills	63,732	20.8	1,043	3,061
204	El Dorado Hills	18,534	17.4	362	1,067
205	El Dorado Hills	0	0.0	0	0
206	El Dorado Hills	2,556	16.7	52	153
207	El Dorado Hills	19,088	22.0	296	869
208	Unincorporated El Dorado County	531	20.1	9	26
209	El Dorado Hills	3,373	20.9	55	161
210	El Dorado Hills	7,234	19.8	125	366
211	Unincorporated El Dorado County	216	19.4	4	11
212	El Dorado Hills	2,399	23.4	35	103
213	Unincorporated El Dorado County	8,543	26.5	116	323
214	Unincorporated El Dorado County	865	44.7	8	19
215	El Dorado Hills	7,622	24.1	113	316
216	Unincorporated El Dorado County	488	40.4	5	12
217	Unincorporated El Dorado County	904	29.4	11	31
218	Unincorporated El Dorado County	2,129	27.2	28	78
219	Unincorporated El Dorado County	2,265	29.1	28	78
220	Unincorporated El Dorado County	720	28.7	9	25
221	El Dorado Hills	56,168	23.8	876	2,359
222	Cameron Park	1,355	19.2	26	71
223	Cameron Park	5,332	19.1	103	279
224	Unincorporated El Dorado County	6,030	23.4	95	258
225	Unincorporated El Dorado County	7,231	26.8	92	270

Appendix B - Generations at Green Valley (Project) Vehicle Miles Traveled (VMT) Details

TAZ	Community Region			Population Details	
		Home-based PA VMT	Home-based VMT per Capita	Total Households	Total Population
226	Cameron Park	8,214	21.4	131	384
227	Cameron Park	162	13.4	5	12
228	Cameron Park	30,340	17.8	705	1,703
229	El Dorado Hills	511	21.1	9	24
230	El Dorado Hills	765	21.7	12	35
231	Unincorporated El Dorado County	303	20.7	5	15
232	Unincorporated El Dorado County	2,681	29.2	33	92
233	Cameron Park	3,442	16.3	92	211
234	Cameron Park	37,473	16.3	1,004	2,306
235	Cameron Park	46,107	18.9	947	2,436
236	Cameron Park	23,792	19.8	468	1,204
237	Cameron Park	3,362	19.5	75	172
238	Cameron Park	12,610	18.6	280	676
239	Cameron Park	1,487	17.1	32	87
240	Unincorporated El Dorado County	9,280	26.9	127	345
241	Cameron Park	9,000	20.2	164	445
242	Cameron Park	1,058	17.7	22	60
243	Cameron Park	2,825	20.0	52	141
244	Unincorporated El Dorado County	1,696	30.0	22	57
245	Unincorporated El Dorado County	1,009	34.8	10	29
246	Unincorporated El Dorado County	5,739	31.5	63	182
247	Unincorporated El Dorado County	15,539	24.1	296	646
248	Unincorporated El Dorado County	12,409	28.1	185	441
249	Unincorporated El Dorado County	1,914	32.5	27	59
250	Unincorporated El Dorado County	3,637	29.5	53	123
251	Unincorporated El Dorado County	4,859	21.7	88	224
252	Unincorporated El Dorado County	23,460	20.8	434	1,130
253	Unincorporated El Dorado County	10,246	25.4	147	403
254	Unincorporated El Dorado County	6,915	23.5	116	295
255	Cameron Park	0	0.0	0	0
256	Cameron Park	1,771	14.6	47	121
257	Shingle Springs	6,194	15.9	153	389
258	Unincorporated El Dorado County	1,679	29.2	21	58
259	Unincorporated El Dorado County	2,128	27.2	30	78
260	Shingle Springs	45	10.3	2	4
261	Shingle Springs	3,835	15.2	92	252
262	Shingle Springs	4,529	14.7	121	308
263	Shingle Springs	4,684	15.8	108	296
264	Shingle Springs	2,113	15.4	50	137
265	Unincorporated El Dorado County	2,780	23.7	45	117
266	Unincorporated El Dorado County	2,052	22.4	42	92
267	Unincorporated El Dorado County	6,531	19.4	129	336
268	Unincorporated El Dorado County	3,617	20.1	69	180
269	Unincorporated El Dorado County	10,854	21.0	204	516
270	Unincorporated El Dorado County	3,070	27.1	44	113
271	Unincorporated El Dorado County	9,805	25.9	150	379
272	Unincorporated El Dorado County	7,374	21.2	131	347
273	Unincorporated El Dorado County	9,895	25.3	134	391
274	Unincorporated El Dorado County	13,003	21.1	233	618
275	Unincorporated El Dorado County	17,672	21.3	321	828
276	Cameron Park	10,380	19.2	224	541
277	Cameron Park	7,548	18.2	161	416
278	Unincorporated El Dorado County	6,433	26.1	91	247
279	Unincorporated El Dorado County	3,349	27.4	45	122
280	Unincorporated El Dorado County	2,116	21.6	37	98
281	Unincorporated El Dorado County	3,306	21.1	59	156
282	Unincorporated El Dorado County	2,049	19.8	39	103
283	Shingle Springs	3,785	0.0	0	0
284	Shingle Springs	1,010	15.7	25	65
285	Unincorporated El Dorado County	1,452	55.0	12	26
286	Unincorporated El Dorado County	2,209	23.1	36	95
287	Unincorporated El Dorado County	2,074	23.7	34	88
288	Unincorporated El Dorado County	3,178	23.5	51	135
289	Unincorporated El Dorado County	488	20.9	8	23
290	Unincorporated El Dorado County	3,097	24.1	44	129
291	Unincorporated El Dorado County	12,249	26.4	188	463
292	Unincorporated El Dorado County	6,038	28.7	72	210
293	Unincorporated El Dorado County	1,189	15.4	34	77
294	Unincorporated El Dorado County	4,380	17.7	97	247
295	Unincorporated El Dorado County	4,758	16.8	110	284
296	El Dorado Diamond Springs	6,270	20.6	117	305
297	Unincorporated El Dorado County	2,973	16.3	70	182
298	Unincorporated El Dorado County	3,590	17.5	79	206
299	Unincorporated El Dorado County	5,738	21.4	106	268
300	Unincorporated El Dorado County	1,313	18.5	28	71

Appendix B - Generations at Green Valley (Project) Vehicle Miles Traveled (VMT) Details

TAZ	Community Region			Population Details	
		Home-based PA VMT	Home-based VMT per Capita	Total Households	Total Population
301	Unincorporated El Dorado County	0	0.0	1	2
302	Unincorporated El Dorado County	2,303	17.7	57	130
303	El Dorado Diamond Springs	3,445	14.9	106	231
304	El Dorado Diamond Springs	346	12.7	12	27
305	El Dorado Diamond Springs	0	0.0	1	2
306	El Dorado Diamond Springs	343	15.7	10	22
307	El Dorado Diamond Springs	458	12.7	16	36
308	El Dorado Diamond Springs	254	10.2	11	25
309	El Dorado Diamond Springs	397	12.4	14	32
310	El Dorado Diamond Springs	728	12.4	26	59
311	El Dorado Diamond Springs	1,107	12.8	38	87
312	El Dorado Diamond Springs	847	12.1	31	70
313	El Dorado Diamond Springs	4,138	41.9	38	99
314	El Dorado Diamond Springs	2,968	14.4	81	206
316	El Dorado Diamond Springs	319	10.8	13	30
317	El Dorado Diamond Springs	192	10.5	8	18
318	Unincorporated El Dorado County	4,603	14.1	128	326
319	El Dorado Diamond Springs	1,165	11.8	38	99
320	Unincorporated El Dorado County	2,110	47.5	18	44
321	Unincorporated El Dorado County	6,351	24.8	104	256
322	Unincorporated El Dorado County	7,614	19.7	153	387
323	Unincorporated El Dorado County	3,329	25.8	51	129
324	Unincorporated El Dorado County	4,559	27.7	64	165
325	Unincorporated El Dorado County	849	21.5	16	39
326	Unincorporated El Dorado County	2,681	22.2	49	121
327	Placerville	1,901	18.9	40	101
328	Unincorporated El Dorado County	942	19.7	19	48
329	Placerville	5,151	16.2	139	317
330	Unincorporated El Dorado County	2,956	16.1	73	184
331	Unincorporated El Dorado County	6,760	24.7	110	274
332	Unincorporated El Dorado County	1,704	16.3	47	104
333	Unincorporated El Dorado County	5,359	23.8	91	226
334	Unincorporated El Dorado County	1,097	19.0	26	58
335	Unincorporated El Dorado County	3,152	19.1	77	165
336	Unincorporated El Dorado County	1,385	19.7	30	70
337	Unincorporated El Dorado County	7,196	23.9	121	302
338	Unincorporated El Dorado County	17,446	21.0	322	831
339	Unincorporated El Dorado County	11,786	28.7	188	410
340	Unincorporated El Dorado County	8,071	39.4	93	205
341	Unincorporated El Dorado County	1,825	25.8	31	71
342	Unincorporated El Dorado County	3,099	25.0	48	124
343	Unincorporated El Dorado County	3,837	33.2	53	116
344	Unincorporated El Dorado County	4,221	35.2	55	120
345	Unincorporated El Dorado County	1,820	28.7	29	63
346	Unincorporated El Dorado County	1,321	26.7	22	49
347	Unincorporated El Dorado County	3,496	32.3	42	108
348	Unincorporated El Dorado County	2,770	25.1	49	110
349	Unincorporated El Dorado County	7,538	39.4	83	191
350	Unincorporated El Dorado County	1,577	32.8	22	48
351	Unincorporated El Dorado County	1,780	35.5	23	50
352	Unincorporated El Dorado County	2,482	39.2	29	63
353	Unincorporated El Dorado County	13,121	36.0	167	365
354	Unincorporated El Dorado County	3,351	29.0	53	116
355	Placerville	5,938	10.8	241	550
356	Placerville	2,475	12.7	91	195
357	Unincorporated El Dorado County	3,585	17.2	89	209
358	Placerville	2,713	14.3	81	190
359	Unincorporated El Dorado County	4,805	18.9	105	254
360	Unincorporated El Dorado County	5,515	23.3	98	237
361	Placerville	9,090	9.7	458	938
362	Placerville	5,282	8.9	252	591
363	Unincorporated El Dorado County	326	10.5	13	31
364	Placerville	3,317	10.1	138	328
365	El Dorado Diamond Springs	7,944	11.0	322	722
366	El Dorado Diamond Springs	243	7.8	15	31
367	El Dorado Diamond Springs	0	0.0	0	0
368	El Dorado Diamond Springs	1,628	10.9	68	149
369	El Dorado Diamond Springs	5,530	10.9	228	507
370	El Dorado Diamond Springs	0	0.0	0	0
371	El Dorado Diamond Springs	747	16.0	21	47
372	El Dorado Diamond Springs	7,260	16.8	195	433
373	El Dorado Diamond Springs	598	10.2	26	59
374	El Dorado Diamond Springs	302	10.6	13	28
375	El Dorado Diamond Springs	343	10.8	14	32
376	El Dorado Diamond Springs	889	11.6	34	77

Appendix B - Generations at Green Valley (Project) Vehicle Miles Traveled (VMT) Details

TAZ	Community Region			Population Details	
		Home-based PA VMT	Home-based VMT per Capita	Total Households	Total Population
377	El Dorado Diamond Springs	301	10.2	13	29
378	El Dorado Diamond Springs	608	10.3	27	59
379	El Dorado Diamond Springs	1,045	9.9	48	105
380	El Dorado Diamond Springs	223	8.5	12	26
381	El Dorado Diamond Springs	127	8.3	7	15
382	El Dorado Diamond Springs	216	9.0	11	24
383	Unincorporated El Dorado County	1,629	15.9	46	102
384	El Dorado Diamond Springs	3,747	14.1	120	267
385	El Dorado Diamond Springs	12,939	12.9	451	1,002
386	El Dorado Diamond Springs	2,761	13.8	90	200
387	El Dorado Diamond Springs	888	11.1	36	80
388	El Dorado Diamond Springs	0	0.0	0	0
389	El Dorado Diamond Springs	6	1.3	2	4
390	El Dorado Diamond Springs	3,601	9.5	182	379
391	El Dorado Diamond Springs	165	7.2	11	23
392	El Dorado Diamond Springs	553	9.5	28	58
393	El Dorado Diamond Springs	5,765	9.5	268	605
394	El Dorado Diamond Springs	186	8.5	8	22
395	Placerville	1,450	8.8	74	166
396	El Dorado Diamond Springs	0	0.0	0	0
397	El Dorado Diamond Springs	1,198	10.5	50	114
398	El Dorado Diamond Springs	296	9.4	14	32
399	El Dorado Diamond Springs	1,061	10.9	43	97
400	El Dorado Diamond Springs	235	7.0	16	33
401	Placerville	599	9.6	28	63
402	El Dorado Diamond Springs	1,347	10.2	51	133
403	El Dorado Diamond Springs	3,372	13.0	124	258
404	El Dorado Diamond Springs	365	8.8	19	42
405	El Dorado Diamond Springs	132	6.7	9	20
406	El Dorado Diamond Springs	488	9.3	24	53
407	El Dorado Diamond Springs	17	8.3	1	2
408	El Dorado Diamond Springs	16	7.6	1	2
409	Placerville	2,775	11.2	104	248
410	El Dorado Diamond Springs	13,367	13.0	426	1,031
411	Placerville	5,415	7.6	298	712
412	Unincorporated El Dorado County	3,024	14.7	86	206
413	Placerville	3,593	11.9	126	301
414	El Dorado Diamond Springs	111	7.6	7	15
415	Unincorporated El Dorado County	413	10.2	18	40
416	El Dorado Diamond Springs	136	7.2	9	19
417	Placerville	1,008	8.9	45	114
418	Placerville	0	0.0	0	0
419	Placerville	0	0.0	0	0
420	Placerville	874	8.7	42	100
421	Placerville	1,495	9.2	68	163
422	Placerville	5,723	8.8	278	652
423	Unincorporated El Dorado County	450	9.4	20	48
424	Placerville	4,393	11.2	171	391
425	Placerville	29,000	11.1	1,167	2,617
426	Placerville	953	11.6	33	82
427	Unincorporated El Dorado County	4,324	18.7	93	232
428	Unincorporated El Dorado County	712	13.0	22	55
429	Unincorporated El Dorado County	1,567	19.0	35	83
430	Unincorporated El Dorado County	2,336	17.1	58	137
431	Placerville	427	9.5	22	45
432	Unincorporated El Dorado County	9,600	13.2	309	729
433	Placerville	9,046	8.7	481	1,041
434	Placerville	543	7.7	33	71
435	Placerville	576	7.5	36	77
436	Unincorporated El Dorado County	1,084	17.4	25	62
437	Unincorporated El Dorado County	5,414	18.9	117	287
438	Unincorporated El Dorado County	5,029	18.1	124	278
439	Unincorporated El Dorado County	6,117	17.5	156	350
440	Unincorporated El Dorado County	1,005	16.0	28	63
441	Placerville	351	12.2	12	29
442	Placerville	10,026	13.1	313	768
443	Unincorporated El Dorado County	1,466	17.2	38	85
444	Unincorporated El Dorado County	201	10.5	8	19
445	Placerville	835	14.8	23	56
446	Placerville	778	13.3	25	59
447	Unincorporated El Dorado County	3,784	20.0	76	189
448	Placerville	2,018	15.5	53	130
449	Unincorporated El Dorado County	521	17.4	14	30
450	Unincorporated El Dorado County	2,479	13.8	84	180
451	Unincorporated El Dorado County	967	16.7	27	58

Appendix B - Generations at Green Valley (Project) Vehicle Miles Traveled (VMT) Details

TAZ	Community Region			Population Details	
		Home-based PA VMT	Home-based VMT per Capita	Total Households	Total Population
452	Placerville	3,820	14.7	121	259
453	Placerville	3,032	9.8	145	310
454	Unincorporated El Dorado County	503	9.4	25	54
455	Unincorporated El Dorado County	2,910	16.9	73	172
456	Unincorporated El Dorado County	1,983	18.2	51	109
457	Unincorporated El Dorado County	2,895	21.1	62	137
458	Placerville	2,498	15.9	67	157
459	Placerville	330	12.8	11	26
460	Unincorporated El Dorado County	886	18.8	22	47
461	Unincorporated El Dorado County	197	14.0	6	14
462	Unincorporated El Dorado County	1,177	17.7	31	66
463	Unincorporated El Dorado County	6,973	35.9	85	194
464	Unincorporated El Dorado County	3,154	30.4	47	104
465	Unincorporated El Dorado County	5,464	40.9	58	134
466	Unincorporated El Dorado County	4,136	29.7	61	139
467	Unincorporated El Dorado County	3,690	41.4	39	89
468	Unincorporated El Dorado County	9,458	34.2	120	277
469	Unincorporated El Dorado County	5,442	41.6	59	131
470	Unincorporated El Dorado County	3,012	41.2	32	73
471	Unincorporated El Dorado County	1,949	37.1	23	53
472	Unincorporated El Dorado County	2,179	36.7	26	59
473	Unincorporated El Dorado County	530	23.0	10	23
474	Unincorporated El Dorado County	2,066	25.6	37	81
475	Unincorporated El Dorado County	2,266	27.3	38	83
476	Unincorporated El Dorado County	1,074	26.0	16	41
477	Unincorporated El Dorado County	2,427	35.1	30	69
478	Unincorporated El Dorado County	1,796	27.2	30	66
479	Unincorporated El Dorado County	2,946	25.1	51	118
480	Unincorporated El Dorado County	1,908	41.8	20	46
481	Unincorporated El Dorado County	1,930	43.9	20	44
482	Unincorporated El Dorado County	7,734	47.5	74	163
483	Unincorporated El Dorado County	4,999	20.1	115	249
484	Unincorporated El Dorado County	5,317	23.4	91	227
485	Unincorporated El Dorado County	1,448	38.7	15	37
486	Unincorporated El Dorado County	5,621	36.1	69	156
487	Unincorporated El Dorado County	10,694	20.6	221	519
488	Unincorporated El Dorado County	7,097	29.4	107	242
489	Unincorporated El Dorado County	6,612	22.0	133	300
490	Unincorporated El Dorado County	1,454	24.3	24	60
491	Unincorporated El Dorado County	8,913	22.3	160	399
492	Unincorporated El Dorado County	4,175	23.7	71	176
493	Unincorporated El Dorado County	4,344	24.3	72	178
494	Unincorporated El Dorado County	3,803	22.4	68	170
495	Unincorporated El Dorado County	808	20.2	16	40
496	Unincorporated El Dorado County	4,293	21.4	81	201
497	Unincorporated El Dorado County	5,602	25.0	88	224
498	Unincorporated El Dorado County	4,324	27.4	70	158
499	Unincorporated El Dorado County	1,697	22.7	30	75
500	Unincorporated El Dorado County	1,302	50.4	11	26
501	Unincorporated El Dorado County	946	19.4	22	49
502	Unincorporated El Dorado County	7,270	26.7	117	272
503	Unincorporated El Dorado County	0	0.0	1	2
504	Unincorporated El Dorado County	6,172	19.7	141	313
505	Unincorporated El Dorado County	75	11.3	3	7
506	Unincorporated El Dorado County	1,174	18.9	28	62
507	Unincorporated El Dorado County	2,221	19.1	50	116
508	Unincorporated El Dorado County	3,265	17.8	85	184
509	Unincorporated El Dorado County	395	14.8	12	27
510	Unincorporated El Dorado County	3,285	16.5	92	199
511	Unincorporated El Dorado County	1,735	16.6	45	105
512	Unincorporated El Dorado County	1,832	21.3	37	86
513	Unincorporated El Dorado County	10,304	29.1	142	354
514	Unincorporated El Dorado County	44,977	29.0	622	1,551
515	Unincorporated El Dorado County	4,634	26.3	69	176
516	Unincorporated El Dorado County	11,302	31.2	142	362
517	Unincorporated El Dorado County	19,761	23.0	388	857
518	Unincorporated El Dorado County	15,226	22.7	289	671
519	Unincorporated El Dorado County	7,500	22.8	142	330
520	Unincorporated El Dorado County	15,625	25.3	266	617
521	Unincorporated El Dorado County	12,390	19.3	290	641
522	Unincorporated El Dorado County	6,857	31.0	85	221
523	Unincorporated El Dorado County	9,562	16.2	240	588
524	Unincorporated El Dorado County	11,787	24.0	205	490
525	Unincorporated El Dorado County	6,832	34.3	85	199
526	Unincorporated El Dorado County	306	25.1	5	12

Appendix B - Generations at Green Valley (Project) Vehicle Miles Traveled (VMT) Details

TAZ	Community Region			Population Details	
		Home-based PA VMT	Home-based VMT per Capita	Total Households	Total Population
527	Unincorporated El Dorado County	9,055	23.8	162	380
528	Unincorporated El Dorado County	81,524	33.6	1,001	2,429
529	Unincorporated El Dorado County	1,072	29.6	15	36
530	Unincorporated El Dorado County	16,370	35.5	191	462
531	Unincorporated El Dorado County	3,220	39.2	34	82
532	Unincorporated El Dorado County	4,906	33.3	61	147
533	Unincorporated El Dorado County	8,053	29.7	105	271
534	Unincorporated El Dorado County	4,689	36.6	53	128
535	Unincorporated El Dorado County	7,373	33.3	91	221
536	Unincorporated El Dorado County	6,163	30.9	82	200
537	Unincorporated El Dorado County	13,382	33.3	165	402
538	Unincorporated El Dorado County	2,809	26.3	44	107
539	Unincorporated El Dorado County	1,269	87.5	6	15
540	Unincorporated El Dorado County	0	0.0	0	0
541	Unincorporated El Dorado County	1,067	25.3	18	42
542	Unincorporated El Dorado County	2,873	23.3	52	123
543	Unincorporated El Dorado County	2,251	19.7	49	114
544	Unincorporated El Dorado County	440	20.9	9	21
545	Unincorporated El Dorado County	1,920	35.7	23	54
546	Unincorporated El Dorado County	6,050	42.4	61	143
547	Unincorporated El Dorado County	482	20.6	10	23
548	Unincorporated El Dorado County	22,485	24.7	386	910
549	Unincorporated El Dorado County	2,547	25.7	42	99
550	Unincorporated El Dorado County	325	18.1	7	18
551	Unincorporated El Dorado County	2,355	22.3	41	105
552	Unincorporated El Dorado County	385	20.6	8	19
553	Unincorporated El Dorado County	1,954	26.1	32	75
554	Unincorporated El Dorado County	5,048	26.0	83	194
555	Unincorporated El Dorado County	2,115	26.3	34	80
556	Unincorporated El Dorado County	6,584	34.4	82	192
557	Unincorporated El Dorado County	2,033	24.9	35	82
558	Unincorporated El Dorado County	2,804	33.2	36	84
559	Unincorporated El Dorado County	1,736	29.6	25	59
560	Unincorporated El Dorado County	1,552	24.6	27	63
561	Unincorporated El Dorado County	1,494	28.7	22	52
562	Unincorporated El Dorado County	5,634	38.7	62	145
563	Unincorporated El Dorado County	3,171	44.8	32	71
564	Unincorporated El Dorado County	782	23.4	14	33
565	Unincorporated El Dorado County	3,478	26.9	56	129
566	Unincorporated El Dorado County	5,287	24.0	93	220
567	Unincorporated El Dorado County	774	18.6	18	42
568	Unincorporated El Dorado County	1,183	19.2	26	62
569	Unincorporated El Dorado County	2,642	18.3	61	144
570	Unincorporated El Dorado County	1,985	21.5	40	92
571	Unincorporated El Dorado County	1,749	23.0	33	76
572	Unincorporated El Dorado County	1,274	20.8	25	61
573	Unincorporated El Dorado County	7,621	38.8	89	197
574	Unincorporated El Dorado County	7,600	43.7	71	174
575	Unincorporated El Dorado County	3,897	54.8	29	71
576	Unincorporated El Dorado County	1,475	35.1	19	42
577	Unincorporated El Dorado County	1,050	36.6	13	29
578	Unincorporated El Dorado County	35,121	43.0	370	817
579	Unincorporated El Dorado County	4,997	51.8	38	96
580	Unincorporated El Dorado County	3,957	44.6	35	89
581	Unincorporated El Dorado County	4,796	50.7	43	95
582	Unincorporated El Dorado County	1,592	47.1	13	34
583	Unincorporated El Dorado County	41,741	53.9	352	774
584	Unincorporated El Dorado County	1,955	49.3	18	40
585	Unincorporated El Dorado County	13,754	50.4	124	273
586	Unincorporated El Dorado County	2,273	25.1	51	91
587	Unincorporated El Dorado County	3,275	32.9	39	99
588	Unincorporated El Dorado County	28,905	35.9	323	805
589	Unincorporated El Dorado County	601	50.1	3	12
590	Unincorporated El Dorado County	1,084	23.8	18	46
591	Unincorporated El Dorado County	110	14.5	3	8
592	Unincorporated El Dorado County	12,352	16.5	339	749
593	Unincorporated El Dorado County	8,708	22.8	151	382
594	Unincorporated El Dorado County	24,345	30.8	312	790
595	Unincorporated El Dorado County	1,712	30.3	25	56
596	Unincorporated El Dorado County	2,614	30.8	34	85
597	Unincorporated El Dorado County	3,699	15.8	106	234
598	Unincorporated El Dorado County	492	15.9	14	31
599	Unincorporated El Dorado County	918	24.4	17	38
600	Unincorporated El Dorado County	10,296	22.7	205	453
601	Unincorporated El Dorado County	1,712	77.9	10	22

Appendix B - Generations at Green Valley (Project) Vehicle Miles Traveled (VMT) Details

TAZ	Community Region			Population Details	
		Home-based PA VMT	Home-based VMT per Capita	Total Households	Total Population
602	Unincorporated El Dorado County	107	20.1	3	5
603	Unincorporated El Dorado County	641	32.8	11	20
604	Unincorporated El Dorado County	1,644	49.6	17	33
605	Unincorporated El Dorado County	1,666	43.9	18	38
606	Unincorporated El Dorado County	0	0.0	0	0
607	Unincorporated El Dorado County	4,570	92.5	19	49
608	Unincorporated El Dorado County	0	0.0	1	2
609	Unincorporated El Dorado County	3,007	41.9	34	72
610	El Dorado Hills	181	0.0	0	0
611	El Dorado Hills	0	0.0	0	0
612	El Dorado Hills	0	0.0	0	0
613	Unincorporated El Dorado County	59	11.5	2	5
614	El Dorado Hills	41,978	20.6	797	2,033
615	El Dorado Hills	32,915	18.0	683	1,831
616	El Dorado Hills	31,287	15.7	787	1,991
617	El Dorado Hills	11,647	21.3	187	547
618	El Dorado Hills	0	0.0	0	0
619	El Dorado Hills	0	0.0	0	0
620	El Dorado Hills	3,550	0.0	0	0
621	El Dorado Hills	17,807	18.6	327	957
622	El Dorado Hills	19,594	18.1	370	1,083
623	Unincorporated El Dorado County	0	0.0	0	0
624	El Dorado Hills	16,249	18.0	308	905
625	El Dorado Hills	0	0.0	0	0
626	Unincorporated El Dorado County	7,475	19.5	164	383
627	Unincorporated El Dorado County	0	0.0	0	0
628	Unincorporated El Dorado County	0	0.0	0	0
629	Unincorporated El Dorado County	0	0.0	0	0
630	El Dorado Hills	17,810	19.6	380	908
631	Unincorporated El Dorado County	0	0.0	0	0
632	Unincorporated El Dorado County	0	0.0	0	0
633	Unincorporated El Dorado County	0	0.0	0	0
634	Unincorporated El Dorado County	0	0.0	0	0
635	Unincorporated El Dorado County	0	0.0	0	0
636	Unincorporated El Dorado County	0	0.0	0	0
637	Unincorporated El Dorado County	0	0.0	0	0
638	Unincorporated El Dorado County	0	0.0	0	0
639	Unincorporated El Dorado County	0	0.0	0	0
640	Unincorporated El Dorado County	0	0.0	0	0
641	Unincorporated El Dorado County	0	0.0	0	0
642	Unincorporated El Dorado County	0	0.0	0	0
643	Unincorporated El Dorado County	0	0.0	0	0
644	Unincorporated El Dorado County	0	0.0	0	0
645	Unincorporated El Dorado County	0	0.0	0	0
646	Unincorporated El Dorado County	0	0.0	0	0
647	Unincorporated El Dorado County	0	0.0	0	0
648	Unincorporated El Dorado County	0	0.0	0	0
649	Unincorporated El Dorado County	0	0.0	0	0
650	Outside of County	1,501,705	0.0	0	0
651	Outside of County	14,383	0.0	0	0
652	Outside of County	0	0.0	0	0
653	Outside of County	161,071	0.0	0	0
654	Outside of County	9,201	0.0	0	0
655	Outside of County	109,023	0.0	0	0
656	Outside of County	18,449	0.0	0	0
657	Outside of County	8,295	0.0	0	0
658	Outside of County	0	0.0	0	0
659	Outside of County	3,161	0.0	0	0
660	Outside of County	82,999	0.0	0	0
661	Outside of County	72,288	0.0	0	0
662	Outside of County	342,488	0.0	0	0
663	Outside of County	229,625	0.0	0	0
664	Outside of County	192,111	0.0	0	0
665	Outside of County	80,777	0.0	0	0
666	Outside of County	45,726	0.0	0	0
667	Outside of County	0	0.0	0	0
668	Outside of County	310,849	0.0	0	0
669	Outside of County	0	0.0	0	0
670	Outside of County	0	0.0	0	0
671	Outside of County	96,229	0.0	0	0
672	Outside of County	34,199	0.0	0	0
673	Outside of County	14,892	0.0	0	0
674	Outside of County	29,916	0.0	0	0

Appendix C

Generations at Green Valley (Project) Vehicle Miles Traveled (VMT) Details for Cumulative (2040) Conditions

Jurisdiction			Population Details	
	Home-based PA VMT	Home-based VMT per Capita	Total Households	Total Population
Generations at Green Valley	17,873	19.7	380	908

Appendix J

WUI Fire Protection Plan

WUI FIRE PROTECTION PLAN

Generations at Green Valley WUI Fire Protection Plan
EDC Project # GPA 22-0001, Z22-0001, TM22-0001, DA24-001
June 6, 2024

Prepared By:

Ron Phillips, Phillips Consulting Services
Georgetown, CA 95634
530-217-7432

PREPARED FOR THE COUNTY OF EL DORADO

TABLE OF CONTENTS

PLAN APPROVAL SHEET

The Generations at Green Valley WUI Fire Protection Plan (Fire Safe Plan or FSP) has been designed to evaluate the level of potential fire hazard affecting or resulting from the proposed project, and the methods and measures proposed to minimize that hazard. The approximately 280-acre project is located in the unincorporated portion of El Dorado County in the community of El Dorado Hills. The Project proposes to construct up to 379 residential lots (214 age restricted), an approximately 5-acre clubhouse site, nine open space lots, multiple private roads, and 4-acre park site.

The plan has been developed to conform with California Code of Regulations Title 14 §§ 1270-1276 (Fire Safe Regulations), California Code of Regulations Title 24, Part 9 – § 4903 (Plans) and El Dorado County Fire Protection Standard W-002 (Wildland Urban Interface Fire Protection Plans).

The Generations at Green Valley WUI Fire Safe Plan replaces the following previously prepared fire safe plan for this Project:

- Dixon Ranch WUI Fire Safe Plan, prepared by William F. Draper, RPF, dated July 22, 2013.

The Generations at Green Valley WUI Fire Protection Plan (Fire Safe Plan) has been reviewed and approved by the following fire agencies located in El Dorado County:

DATE PUBLISHED: June 6, 2024

PREPARED BY:	APPROVED BY:	APPROVED BY:
DocuSigned by: Ronald Phillips, Jr. DFF4B5E2CDDA4C4...	DocuSigned by: Chrishana Fields 096D536DF6F8429...	DocuSigned by: Jeff Hoag EF9F8B40873747E...
Ronald A. Phillips	Chrishana Fields, Fire Marshal	Jeff Hoag, Battalion Chief
Phillips Consulting	El Dorado Hills Fire Department	CAL FIRE – AEU

FORWARD

The following **Generations at Green Valley WUI Fire Protection Plan** (FSP) has been prepared for the Generations at Green Valley Project (Project) in El Dorado Hills, California. The FSP for the Project meets the requirements described in Chapter 49 of the California Fire Code and various other State and County statues and regulations. The FSP addresses the following topics:

- Introduction (Chapter 1)
- Existing Conditions (Chapter 2)
- Regulatory Requirements (Chapter 3)
- Fire Protection Planning (Chapter 4)
- Emergency Preparedness and Evacuation Planning (Chapter 5)
- Fuel Reduction Management and Defensible Space Concepts (Chapter 6)
- Emergency Preparedness and Evacuation Plan Mitigation Strategies (Chapter 7)
- Plan Appendixes (Chapter 8)

The goals of this FSP are as follows:

- Reduce the exposure of vulnerable buildings to high intensity flames.
- Reduce the quantity of embers accumulating at a building based on factors related to the building characteristics and adjacent fuel treatments.
- Reduce the likelihood of urban conflagration due to treatment of fuels in proximity to buildings.
- Enhance the level of preparedness by both residents and visitors for a safe evacuation during a wildfire or similar hazardous situation.

The FSP specifically applies to the Generations at Green Valley Project. The FSP provides a framework for protection of residents and visitors from natural hazards, the prevention of fire, and preparation for responding to an emergency evacuation of the Project should the need arise. The FSP is intended to be utilized during the development, construction, and occupancy phases of the Project.

For the purpose of interpreting and applying the provisions found within each chapter the terms shall and should are found throughout. The use of the term “shall” refer to requirements of the Plan as mandated through State statue or regulation. The use of the term “should” refer to recommendations cited in the document by the authors.

END OF FORWARD

CHAPTER 1: INTRODUCTION

1.1 Chapter Overview

The purpose of this plan is to generate and memorialize the fire safety requirements of the Fire Authority Having Jurisdiction (FAHJ), namely the California Department of Forestry and Fire Protection (CAL FIRE) and the El Dorado Hills Fire Department (EDHFD), during all phases of the development process. Recommendations for effectively mitigating identified impacts are based on site-specific characteristics and incorporate input from the project applicant and CAL FIRE / EDHFD. This FSP incorporates applicable fire safety regulations and requirements and documents a selection of these regulations that are most pertinent to the Project's unique residential development and location.

This FSP has been prepared for the proposed Project in unincorporated El Dorado County, California. The purpose of the FSP is to assess the potential impacts resulting from wildland fire hazards and identify the measures necessary to adequately mitigate those impacts. As part of the assessment, this plan has considered the fire risk presented by the site including: property location and topography, geology (soils and slopes), combustible vegetation (fuel types), climatic conditions, fire history and the proposed land use and configuration.

This FSP addresses water supply, access, structural ignitability and ignition resistive building features, fire protection systems and equipment, impacts to existing emergency services, defensible space, and vegetation management. This plan identifies fuel modification/management zones and recommends the types and methods of treatment that will protect this project and its essential infrastructure. In addition, this FSP recommends enhanced fire protection measures that the Generations at Green Valley Homeowner's Association (HOA), and individual property owners will take to reduce the probability of structural ignition during the occupancy phase of the Project.

The FSP should be updated no less than once every 5 years or as changes to state and local regulations occur to ensure that the plan can be effectively utilized by all stakeholders.

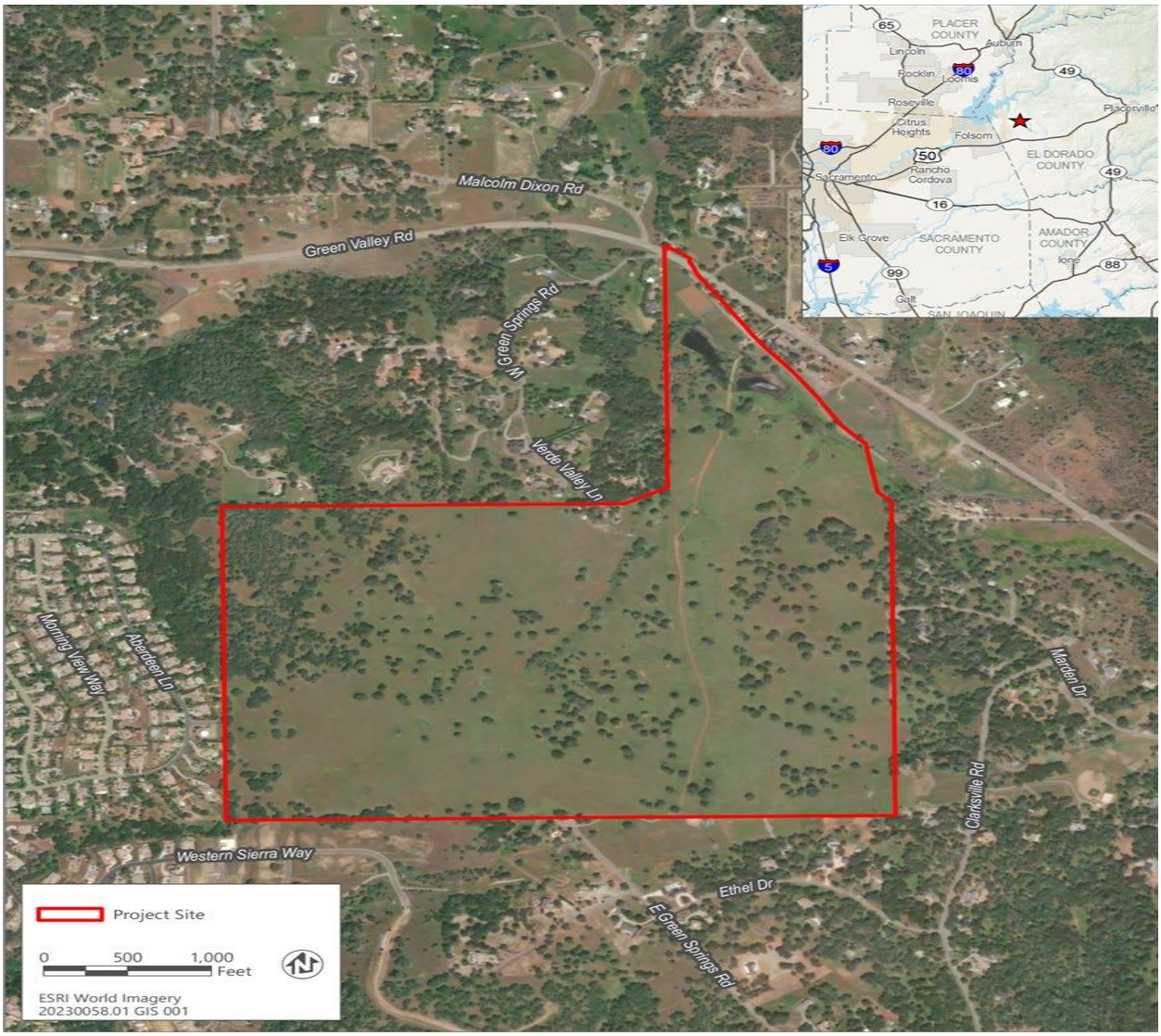
1.2 Terms and Definitions Related to this Plan

Term	Definition
Defensible Space	Is the design and maintenance of natural and/or landscaped areas in an area where mitigation actions are undertaken to reduce building loss from a wildfire. It is also intended to provide access to firefighters for fire suppression actions and to provide a safe zone for them to work. Defensible space is based on four general concepts: 1. Elimination of combustible vegetation and other materials within 5' of the building. 2. Fuel removal or reduction within 100' of buildings in all directions 3. Thinning, pruning and removal of continuous and dense uninterrupted layers of vegetation 4. Removal of ladder fuels within 6' from the ground to prevent fire spread through tree canopies.
Emergency Access / Egress (EAE)	Refers to a road or other connection designed to connect directly to a through road and used to comply with 14CCR §1273.08 (Maximum Length of New Dead-End Roads) and EDHCWD Fire Code Section D107.2. The road shall serve as a secondary means of emergency access and civilian evacuation for the Project.
Emergency Vehicle Access (EVA)	Refers to a road or other connection designed to connect directly to a through road to provide additional access points to the Project for emergency vehicles.

Term	Definition
Evacuation Order	Refers to a situation involving an Immediate threat to life. This is a lawful order to leave now. The area is lawfully closed to public access.
Evacuation Warning	Refers to a potential threat to life and/or property. Those who require additional time to evacuate, and those with pets and livestock should leave immediately.
Fuel Reduction	Refers to the decrease of wildfire fuels such as trees, shrubbery, grasses, and other natural materials to reduce risks to human life and damage to personal property. Fuel reduction can result in less extreme fire behavior and intensity through decreased fire spread rates and reduced flame lengths.
Wildfire	Any uncontrolled fire spreading through vegetative fuels that threatens to destroy life, property or resources as defined in Public Resources Code Sections 4103 and 4104.
Wildland Urban Interface (WUI)	A geographical area identified by the state as a “Fire Hazard Severity Zone” in accordance with Public Resources Code Sections 4201through 4204 and Government Code Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires.

1.3 Project Summary

Location: Unincorporated area of El Dorado County in the El Dorado Hills Community Region. The Project is located south of Green Valley Road, northeast of the West Green Springs Road neighborhood, west of the Green Springs Ranch, and north of Highland View. The Project site is located on five current parcels, El Dorado County Assessor Parcel Numbers (APN) 126-020-001, 126-020-002, 126-020-003, 126-020-004 and 126-150-023. The Map Coordinate for the Project is 38.704040N, 121.045090W. The Project applicant is Green Valley Road Benefits, LLC. See Figure 1 for the proposed Area Map for the Project.



. Figure 1: Generations at Green Valley Area Map[1] (Figure courtesy of Ascent)

[1] Figure courtesy of Ascent Environmental Inc.

Project Description: The Project proposes a Tentative Subdivision Map (TM22-0001) to construct up to 379 new residential lots (214 age restricted), an approximately 5-acre clubhouse site, nine open space lots, multiple private roads, and a 4-acre park site. The Project will be approximately 280 acres in total area. The new resident population[2] for the Project is approximately 854 persons at build-out, assuming single-family residential dwelling units. All new residential parcels will have a land use designation of either High Density Residential (HDR) or Low Density Residential (LDR).

See Figure 2 for the proposed land use designation for the Project

Figure 2: Proposed Land Use Designations[3]

[2] Based on 1.8 residents per dwelling unit within the Age-Restricted portions, and 2.84 residents per dwelling unit for the remaining areas of the Project.

[3] Figure produced by CTA Engineering and Surveying (2022)

The Project can be accessed from two road connections, A-Drive and C-Drive, off of Green Valley Road. An Emergency Access/Egress (EAE) connection is proposed to connect to Lima Way in the Highland View neighborhood. Two new Emergency Vehicle Access (EVA) roads are also proposed to connect to existing roads in the Green Springs Ranch[4] neighborhood. All roads within the Project are proposed to be access controlled private roads owned and maintained by a Home Owners Association (HOA).

Electrical power supply is provided to the Project by Pacific Gas & Electric (PGE). Unless the Project is developed using only electric, each parcel will have natural gas supplied by PG&E for heat and other fuel needs. Municipal water supply for fire protection and domestic water consumption will be provided by the El Dorado Irrigation District (EID).

END OF CHAPTER

[4] The East Green Springs Ranch EVA would only connect to the Green Springs Ranch community if the Green Springs Ranch Association chooses to complete this extension in the future and at their discretion.

CHAPTER 2: EXISTING CONDITIONS

2.1 Chapter Overview

The Project is located in the unincorporated community region of El Dorado Hills, California. El Dorado Hills is located in the western region of El Dorado County. According to 2021 population statistics[5] for the area approximately 633 existing residents live in the general area of the Project. The Project is located within El Dorado County Supervisory District 1.

The Project is approximately 280 ± acres in size. The Project is currently zoned by the County of El Dorado for low density residential (LDR) use. The Project lands are currently unimproved.

See Figure 3 for a photo of the Project site from the Green Valley Road area.

Figure 3: Existing Condition of the Project Area

[5] See Census Block Data for Areas 060170307093007, 060170307091008, 060170307093009, 060170307093010060170307093011, 060170307093013, 060170307093018, 060170307093011; 2020.

The Project is bordered by the following adjoining properties:

- **South Side** – The Highland View neighborhood is located south of the Project.
- **North Side** – The Hickok Ranch, Arroya Vista and Deer Valley neighborhoods are located north of the Project.
- **East Side** – The Green Springs Ranch neighborhood is located east of the Project.
- **West Side** – The West Green Springs neighborhood is located northwest of the Project.

2.2 Vegetation

The Project site is currently unimproved and contains natural vegetation cover. The Project site is located within areas classified as "Grassland" or "Oak Woodland" habitat. See Table 1[6] for the common types of vegetation found on the parcel.

Table 1: Summary of Vegetation Found on the Property

Scientific Name	Common Name
Quercus douglasii	Blue Oak
Quercus Lobata	Valley Oak
Quercus wislizenii	Interior Live Oak
Bromus diandrus, hordeasceus	Bromes
Centaurea solstitialis	Yellow Star Thistle
Hordeum marinum	Mediterranean Barley
Geranium dissectum	Split-Leaf Geranium
Rubas armeniacus	American Blackberry
Avena Fatua and Avena barbata	Oats, Grass Family
Eucalyptus globulas	Blue Gum Eucalyptus
Cynosurus echniatus	Dogtail Grass
Ceanothus integerrimus var.	Deer Brush
Ceanothus cuneatus var. cuneatus	Buck Brush
Pinus sabiniana	Grey Pine

[6] For further details see Biological Resources Assessment for the Project prepared by Madrone Ecological Consulting; (April, 2024).

2.3 Climate

Fire weather in El Dorado County is typically dominated by three general weather phenomena; the Delta push influence, north wind events, and east foehn winds caused by high pressure development in the Great Basin[7]. All three weather conditions cause potential increases in fire intensity and size. The Delta influence is the most common and occurs frequently throughout the summer.

Characteristically, high pressure systems will dominate Northern California in the summer months bringing extremely hot and dry conditions over much of the region. As these systems develop, they tend to originate near the Delta and Sacramento areas bringing the marine influence to the area. This is generally considered a beneficial condition for fire behavior; slightly cooler afternoon temperatures and increases in relative humidity. However, the downside is the strong winds that typically accompany these patterns which can override any benefit that may come from cool, moist marine air.

This type of wind generally subsides after sundown causing fire behavior to drop off dramatically. The other critical wind patterns that are difficult to predict for El Dorado County are the northerly and easterly winds. They are relatively rare, and often are forecasted only the day before. Northerly or easterly winds are typically warmer and drier than most other wind patterns due to air compression. These conditions provide the perfect environment for increased fire intensity and large fire growth.

Fire growth is typically wind driven, however as these winds subside, fire immediately returns to fuel/topography driven in opposing directions to the wind driven direction. This type of wind event is commonly referred to as a Santa Ana wind in Southern California, and a Foehn wind in the Sierra/Cascade Region.

Predominant local weather patterns in the Project area[8] are characterized by warm, dry summers and cool, wet winters. Dry conditions traditionally begin around the beginning of May and last into late October. An average summer day is 95°- 105° Fahrenheit, winds from the southwest at 0-10 miles per hour, and relative humidity levels in the 15-25 percent range. Summer lightning

[7] See Strategic Fire Plan for Amador El Dorado Unit; 2023; 2023 Strategic Fire Plan Amador El Dorado Unit (ca.gov); P.5.
[8] Ben Bolt Remote Automated Weather Station Site; National Weather Service. Ben Bolt California (dri.edu).

storms are infrequent in the area. On average, the strongest wind speeds in the El Dorado Hills area occur in March through May, but winds can frequently exceed 20 mph throughout the local fire season period.

2.4 Topography

The topography in the general area of the Project is classified as being a "foothill" terrain type which transitions from the Central Valley area of California to the Sierra Nevada Mountain range. The existing condition shown on the Tentative Parcel Map indicates that the average slope for the site is approximately 8 - 20% with a maximum slope of approximately 60% in certain open space areas. Elevations within the property range from a low of 900 feet along the northern boundary to a high of 1200 feet found near the southerly boundary. Most of the parcels within the Project have north or east facing aspects.

See Figure 4 for the existing topographic condition of the Project area.

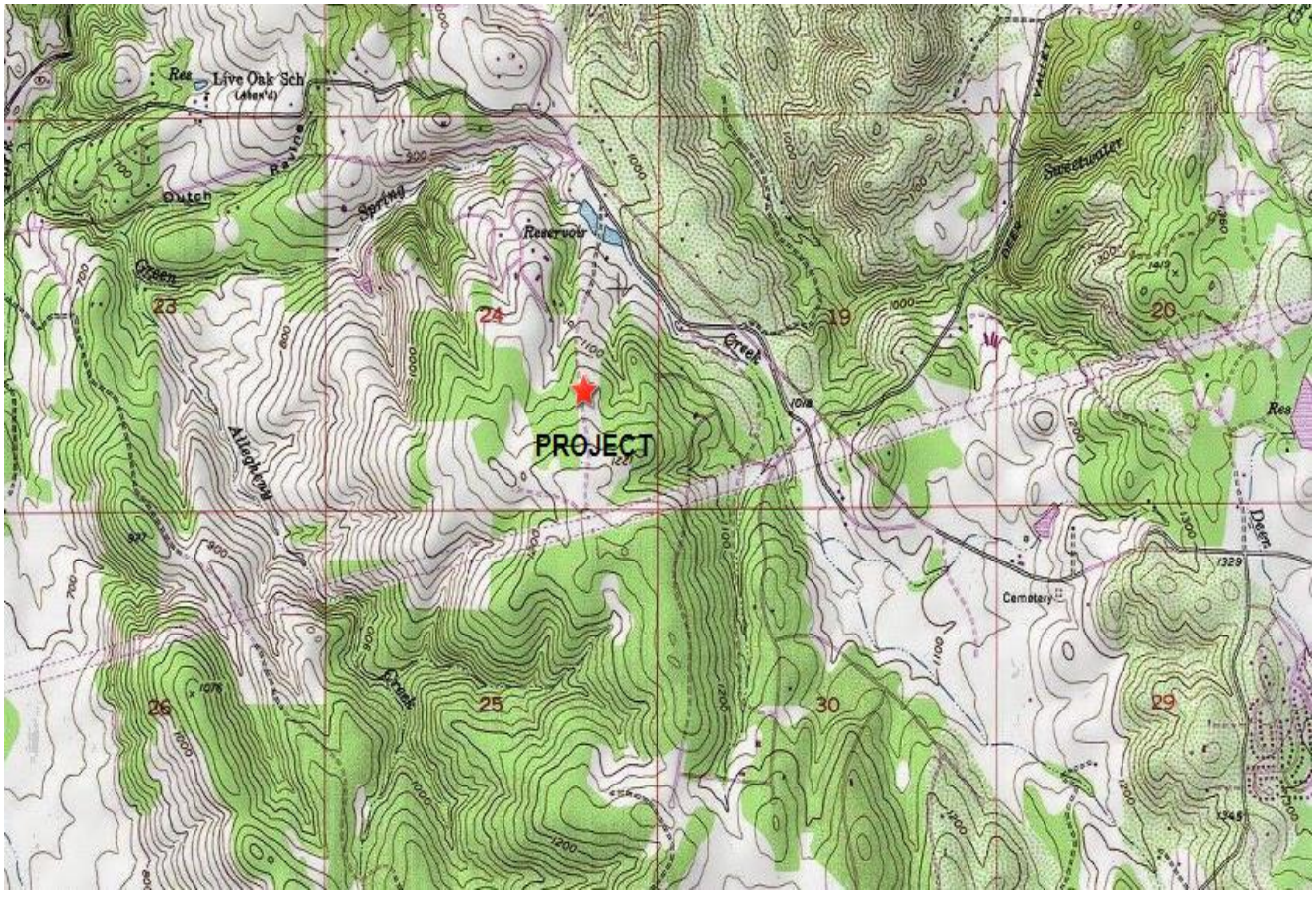


Figure 4: Generations at Green Valley Project Topographic Map

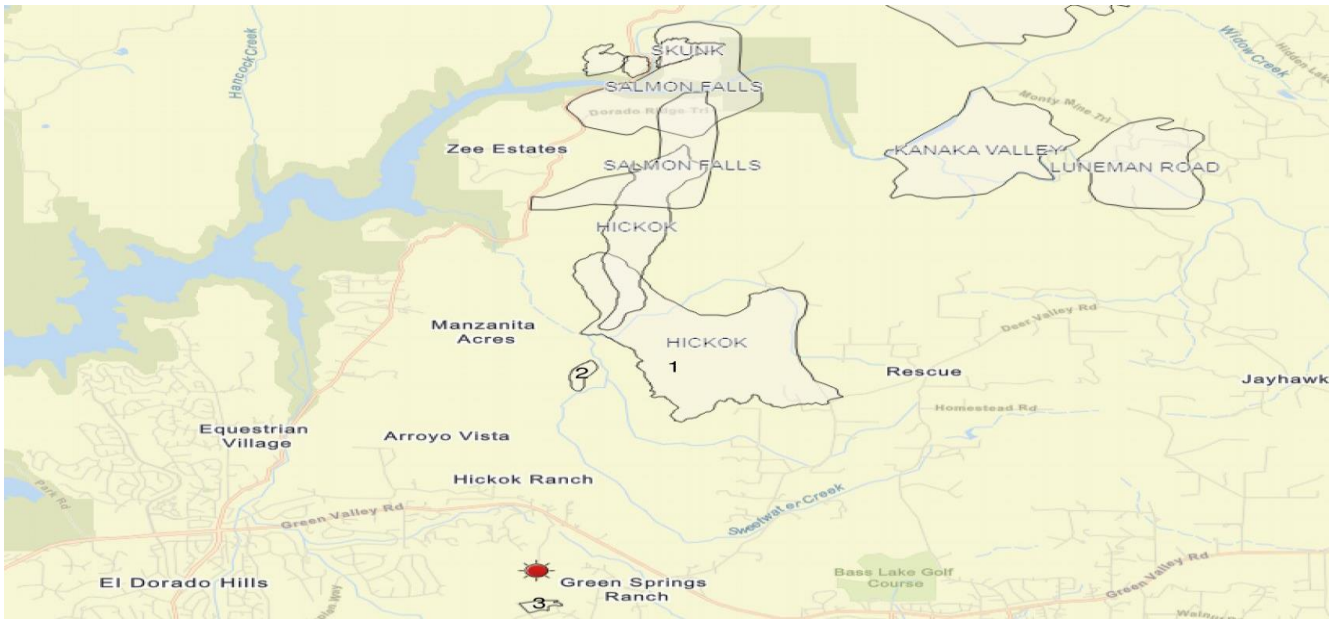
2.5 Existing and Planned Land Use Pattern

The current land use of the Project is unimproved. An existing Sacramento Municipal Utility District (SMUD) 230 kV transmission powerline, and a Pacific Gas & Electric 230kV transmission powerline, cross the Project near the southern boundary within an established easement. The Project proposes a Tentative Subdivision Map (TM22-0001) to construct up to 379 new residential lots (214 age restricted), an approximately 5-acre clubhouse site, nine open space lots, multiple private roads, and a 4-acre park site. The Project will be approximately 280 acres in total area.

2.6 Fire History

According to CAL FIRE statistics the majority of wildland fires that have occurred in the western El Dorado County area was ignited from one of the following sources: debris burning (34%), Undetermined (14%), Equipment (13%), Vehicle (9%) and Other (9%) causes.[9] Debris and Open Burning was the Number 1 cause of vegetation fires in the El Dorado Hills and surrounding communities in the area in 2022.

Figure 5 describes the significant wildland fire history in the vicinity of the Project area.



LEGEND

1. Hickok Fire, August 30, 2002, Size - 776 acres, Cause - Arson
2. Hickok Fire, June 26, 1997, Size - 294 acres, Cause - Miscellaneous
3. Ethel Fire, July 6, 2001, Size - 10 acres, Cause - Equipment Use

Figure 5: Large Wildfire History in the Project Area (1910-2022)

[9] *Strategic Fire Plan Amador ○ El Dorado ○ Sacramento ○ Alpine Unit,* (2023); P.57.

Several large wildfires (>300 acres) have been reported within 5 miles of the Project area between 1910 – 2022. The Project site has not been directly impacted within this reporting period. Lack of historical fire does not, by default, translate to low fire hazard. The absence of fire activity in the interface community contributed to significant fuels build up. The fuels built up together with the severe lack of precipitation and strong winds can all contribute to severe fire behavior that can cause the loss of life and structure destruction.

2.7 Fire Hazard Severity Zone Designation

The term Fire Hazard refers to the dangerous accumulation of flammable fuels in open space areas and other wildland urban interface areas (WUI). It is typically described at the landscape (area) level, usually referring to the density of live or dead vegetation that may be ignited by the various fire risks or causes that can increase a fires intensity or rate of spread. Fire hazard is based on the vegetation types likely to be present over the next 50 years that contribute to fire severity and ember production, the topography of the area and the average fire weather conditions present in the area.

Fire Hazard ratings are provided by CAL FIRE as part of their *Fire Hazard Zone Severity Mapping* program. One of the major hazards in the western El Dorado County region is the threat of a disastrous wildfire endangering both people and property. The Project is also located within a designated[10] Wildland Urban Interface (WUI) community identified by the Federal Government as being at risk from a large wildfire due to fire behavior potential and values at risk.

The area is vulnerable to the threat of wildfire throughout the year subject to a variety of conditions including, but not limited to:

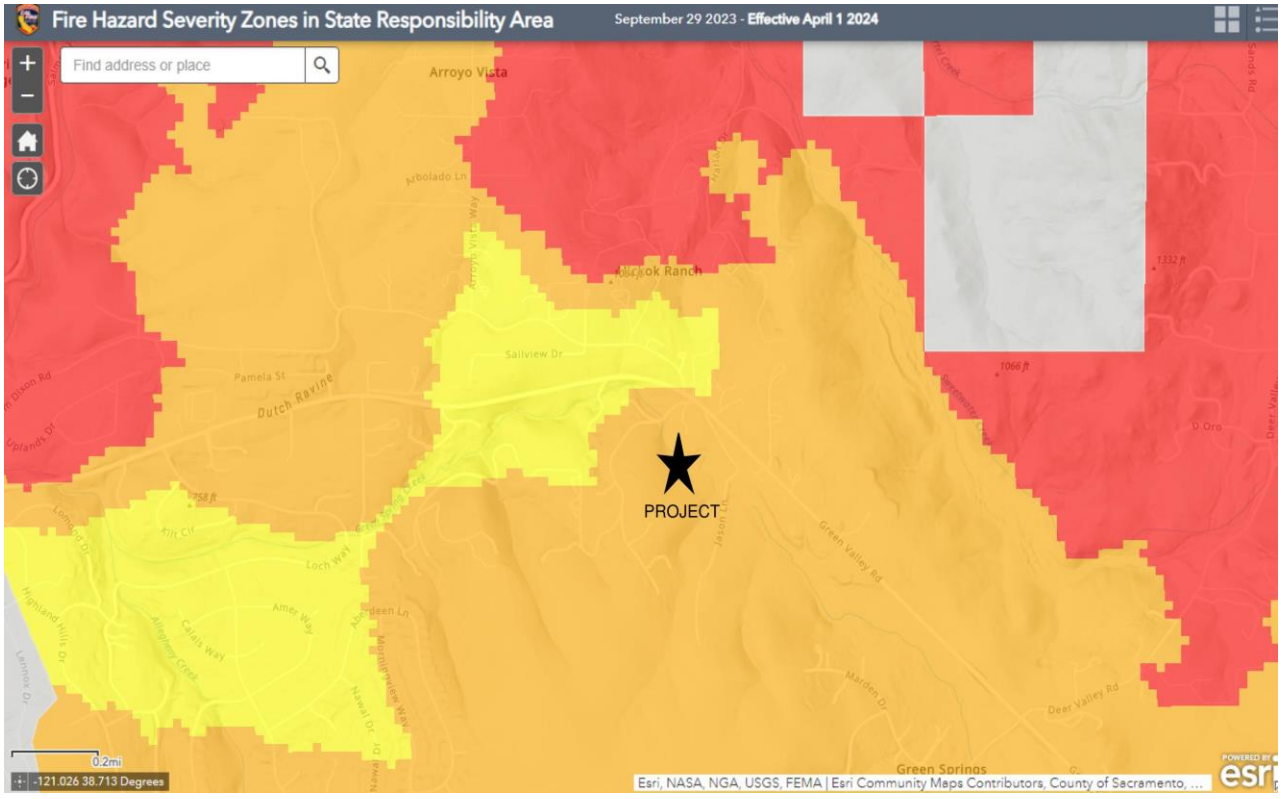
- Daily weather conditions such as air temperature, humidity, wind speed and direction.
- Climatic conditions such as drought, extended seasonal periods of hot, dry weather typically found in the summer and fall months, or seasonal rains typically found in the winter and spring months.
- Fuel moisture and growth cycle periods, especially in fine fuels such as the herbs and shrubs that are prevalent in the area.

[10] Federal Register *Urban Wildland Interface Communities within the Vicinity of Federal Lands that are at High Risk from Wildfires; (January, 2001);* Federal Register :: Urban Wildland Interface Communities Within the Vicinity of Federal Lands That Are at High Risk From Wildfire

- Human caused ignition factors such as arson, escaped debris burns and unsafe equipment operation.

The Project area is located within a State Responsibility Area (SRA) for fire management. The current CAL FIRE Hazard Severity Zone[11] Map for El Dorado County identifies the Project as being inside a **High Fire Hazard Severity Zone.** Lands approximately ½ mile northwest of Project are identified as being within a Moderate Fire Hazard Severity Zone. Land approximately ½ mile north of the Project, in the Hickok and Deer Valley communities, are identified as being in a Very-High Fire Hazard Severity Zone. The unimproved lands north and east of the site, extending into the Pine Hill Preserve area and Salmon Falls area, and the open space areas within the Project, pose the most likely worst-case wildfire risk to the future community.

See Figure 6 for the Fire Hazard Map information for the Project and surrounding community.



LEGEND

Yellow State Responsibility Area (SRA) Moderate Fire Hazard Severity Zone

Orange State Responsibility Area (SRA) High Fire Hazard Severity Zone

Red State Responsibility Area (SRA) Very-High Fire Hazard Severity Zone

Figure 6: Fire Hazard Severity Zone Map for the Generations at Green Valley (2024)

[11] CAL FIRE; Fire Hazard Severity Zone Map for El Dorado County (April, 2024); Fire Hazard Severity Zones in State Responsibility Area - El Dorado County (azureedge.net).

2.8 Fire and Emergency Response

Fire, rescue, and pre-hospital emergency medical services for the El Dorado Hills community is provided by the El Dorado Hills Fire Department (EDHFD)[12]. EDHFD is a career staffed fire department which operates five staffed fire stations and serves an area of approximately 78 square miles. EDHFD utilizes no less than twenty-one firefighters and paramedics to staff these fire stations on a 24-hours-per-day, seven-days-per-week operational schedule.

The closest staffed EDHFD fire station to the Project is Station 84 on Francisco Drive. This station is approximately 2.62 miles west of the Project. Station 84 is staffed with a crew of 3 firefighters on a year-round basis.

CAL FIRE operates one fire station in the El Dorado Hills region to meets its wildfire suppression and prevention mission. This fire station is located at CAL FIRE Station 70 in the Pilot Hill area and is approximately 13.5 miles from the Project. CAL FIRE staffs two state funded fire engines with a crew of 3-4 firefighters on a seasonal basis from this location.

The closest paramedic ambulance to the Project is located at El Dorado Hills Station 85, and has an average emergency response time of less than eight minutes to the Project.

The Project is located within an Insurance Service Office (ISO) Class 3 rating area. EDHFD emergency response travel times for the first arriving unit to the Project are, on-average, less than 8 minutes[13]. These response times are consistent with El Dorado County General Plan Policy 5.1.2.2[14] which calls for an average response time to emergency calls of less than eight minutes in community region areas.

See Table 3 for additional information on local fire station locations and distance to the Project.

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[12] See El Dorado Hills Website; HOME - El Dorado Hills Fire Department (edhfire.com); accessed February 29, 2024.

[13] Response times are based on an average 90 second turnout time by firefighters from their station plus travel time using the closest roads available to the project. The response time standard the county uses to evaluate the adequacy of the project meeting General Plan Policy 6.2.3.1 are based on the closest station (Station 84) only, and not the average response times of all resources responding to an incident.

[14] See *El Dorado County General Plan*, 2004; Public Services and Utilities Element Section, P.91.

Table 3: Fire Station Data for Project			
Fire Station Identification	**Address**	**Travel Distance to Project**	**Staffed Year Round**
EDHFD Station 84	4680 Golden Foothills Pkwy. El Dorado Hills	2.62 Miles	Yes
EDHFD Station 85	1050 Wilson Boulevard El Dorado Hills	5.37 Miles	Yes
EDHFD Station 86	3670 Bass Lake Road El Dorado Hills	5.38 Miles	Yes
CAL FIRE Station 70	4731 Pedro Hill Road Pilot Hill	13.50 Miles	No[15]
CAM Station 88	2961 Alhambra Drive Cameron Park	3.68 Miles	Yes

During a major emergency incident such as a building fire, wildland fire, hazardous materials spill, or similar event it is likely that EDHFD and CAL FIRE will dispatch multiple fire station crews to assist in controlling the incident. It is probable that five or more fire suppression units would be dispatched from multiple fire stations located in the western El Dorado County region.

Figure 7 shows the regional locations of the five closest fire stations to both the Project and El Dorado Hills community.

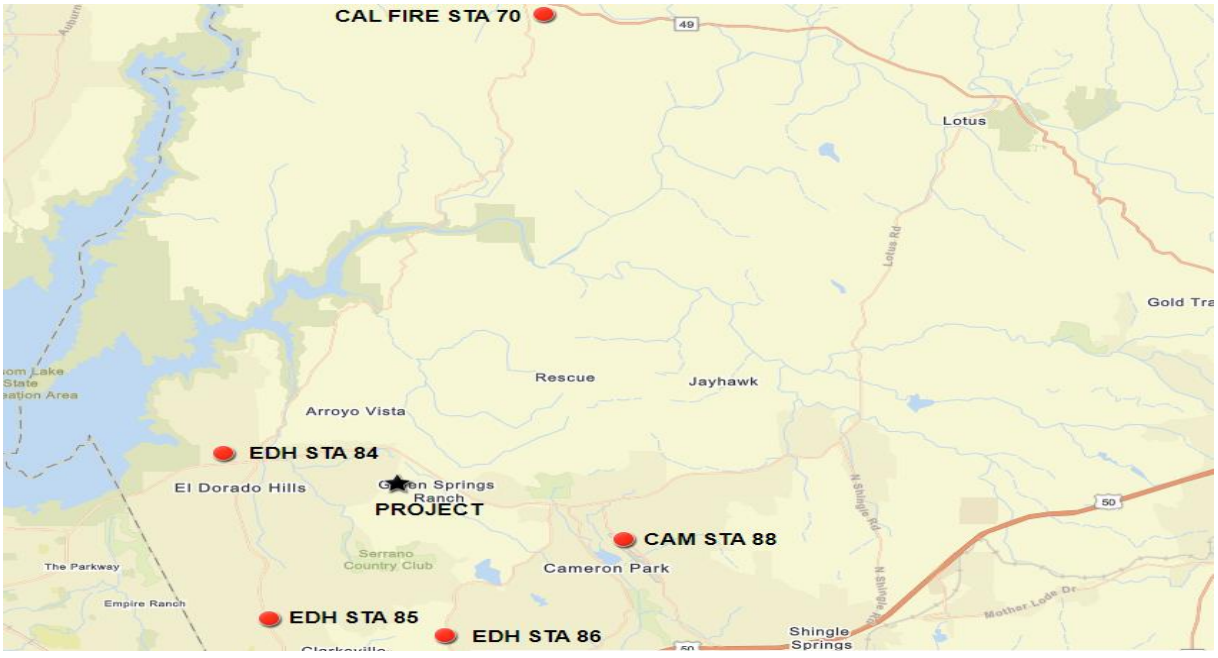

Figure 7: Staffed Fire Stations Near Project

[15] CAL FIRE Station 70 is a seasonal wildland fire station operated by CAL FIRE typically between April-October.

A joint EDHFD, CAL FIRE, and local fire agency emergency response to the Project will occur along the Green Valley Road corridor. Three fire stations (84, 85, and 70) are located west or north of the Project; while two fire stations (88, 86) are located east or south of the Project. The closest paramedic ambulance to the Project is located at El Dorado Hills Station 85, and has an average emergency response time of less than eight minutes to the Project.

2.9 Emergency Ingress and Egress

The existing travel route to the Project site is currently by Green Valley Road which is a collector road that serves the El Dorado Hills, Cameron Park, Rescue and Shingle Springs on the northern end of those communities. Green Valley Road is a two-lane road in the vicinity of the Project site. It connects to Sacramento County on the west side of the Project, and to North Shingle Springs Road on the east side of the Project.

See Figure 8 for a map for the Project and surrounding areas.

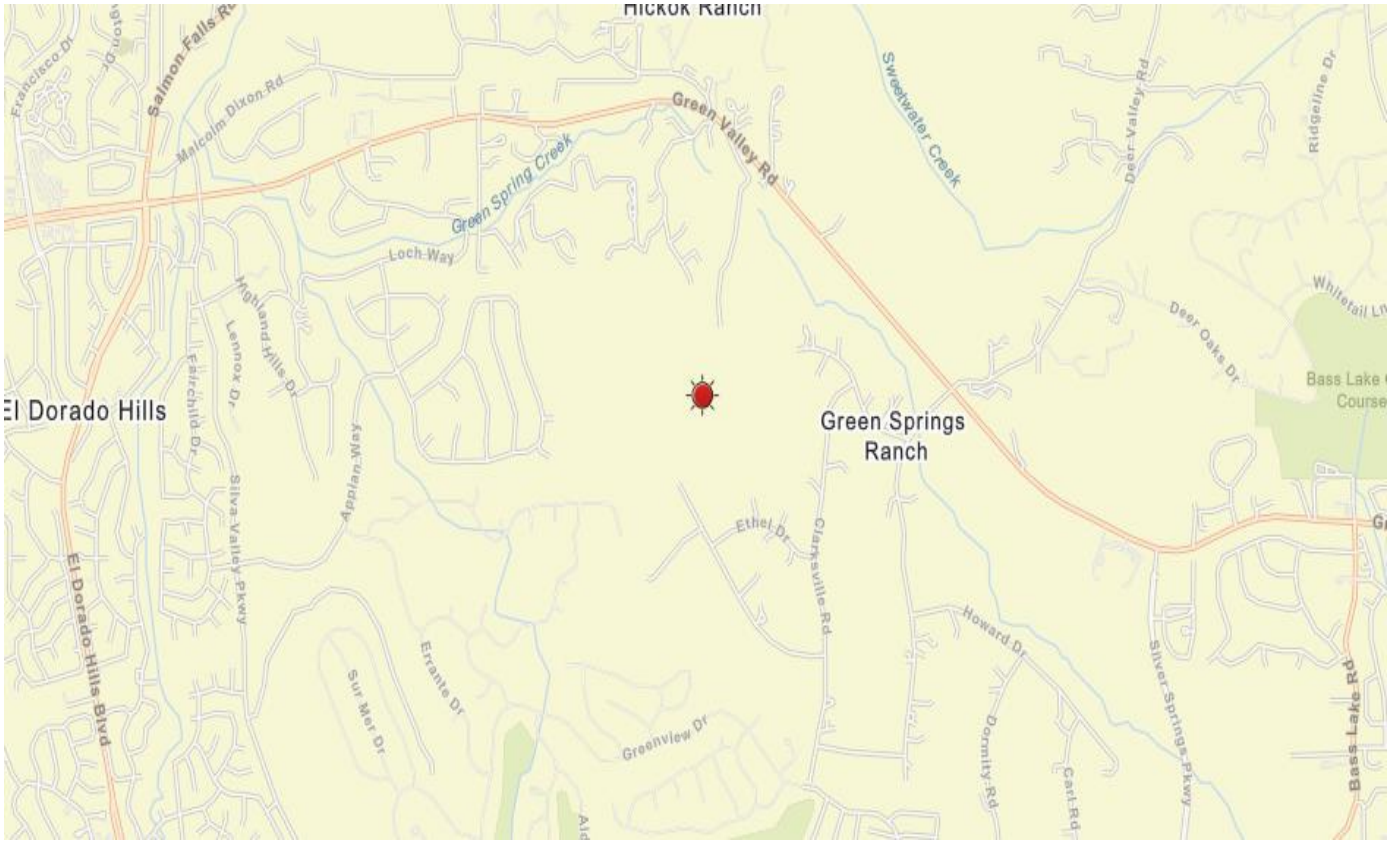

Figure 8: Generations at Green Valley Area Map

END OF CHAPTER

Chapter 3: REGULATORY SETTING

3.1 Chapter Overview

Development of the proposed Project will be subject to federal and state laws, County ordinances and regulations. The key provisions that would address hazards and emergencies within the FSP are summarized below, and, in some cases, reproduced in the appendices.

The County of El Dorado, through its General Plan[16], has identified natural hazards that include severe weather, seismic and geological events, landslides, flooding, and wildfires, as the highest vulnerability to County residents. A review of the information[17] provided in the General Plan shows the Project as being at greatest risk to the threat of a wildfire. The focus of the FSP will be to address efforts to reduce the wildfire threat within the Project and surrounding areas.

3.2 El Dorado County General Plan

The El Dorado County General Plan[18] contains two sections that provide public safety policy guidance related to the Project. Chapter 5 (Public Services and Utilities Element) and Chapter 6 (Health and Safety Element). Chapter 5 was last amended in December, 2015. Chapter 6 was last updated by the County in August, 2019.

The following Public Services and Utilities Element polices of the County are applicable to the proposed Project:

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.

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

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[16] See *El Dorado County General Plan Public - Health, Safety and Noise Element*; (2019)
[17] ibid
[18] See El Dorado County General Plan (2004); Adopted General Plan (edcgov.us); accessed August 31, 2023.

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.

Policy 5.1.2.4. Service standards for public services and emergency services in Rural Centers and Rural Regions are different than in Community Regions based on lower intensity and density of land use.

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 5.7.2.1. 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.

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.

In addition, the Health and Safety Element of the General Plan includes the following policies regarding fire protection within El Dorado County:

Policy 6.2.1.1. Implement Fire Safe ordinance to attain and maintain defensible space through conditioning of tentative maps and in new development at the final map and/or building permit stage.

Policy 6.2.1.2. Coordinate with the local Fire Safe Councils, California Department of Forestry and Fire Protection, and federal and state agencies having land use jurisdiction in El Dorado County in the development of a Countywide fuels management strategy.

Policy 6.2.2.1. Fire Hazard Severity Zone Maps shall be consulted in the review of all projects so that standards and mitigation measure's 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 wildland-urban interface (WUI) communities within the vicinity of Federal lands that are a high risk for wildfire, as listed in the Federal Register Executive Order 13728 of May 18, 2016, unless such development can be adequately protected from wildland fire hazard, as demonstrated in a WUI Fire Safe Plan prepared by a qualified professional as approved by the El Dorado County Fire Prevention Officers Association. The WUI Fire Safe Plan shall be approved by the local Fire Protection District having jurisdiction and/or California Department of Forestry and Fire Protection. (Resolution 124- 2019, August 6, 2019)

Policy 6.2.3.1. As a requirement for approving new development, the County must find, based on information provided by the applicant and the responsible fire protection district that, concurrent with development, adequate emergency water flow, fire access, and firefighting personnel and equipment will be available in accordance with applicable State and local fire district standards. Public Health, Safety, and Noise Element El Dorado County General Plan Page 114 (Amended August 2019) July 2004

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.

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.

3.3 Tentative Map and Parcel Map Requirements in the SRA

California Government Code § 66474.02 requires that a legislative body of a County make specific findings before approving a tentative map, or a parcel map for which a tentative map was not required, for an area located in the State Responsibility Area (SRA) or Local Responsibility Area (LRA) VHFHSZ. The findings must show that that the subdivision is consistent with regulations adopted by the State Board pursuant to Sections 4290 and 4291 of the Public Resources Code (PRC) or consistent with local ordinances certified by the State Board as meeting or exceeding the State regulations.

The County must also submit a copy of the findings to the State Board. Certain tentative maps or parcel maps for purposes of open space and conservation are exempt, as specified in the statute. The findings described above must be made in order to approve a tentative or parcel map. Even if the lead agency adopts a statement of overriding considerations for a proposed project, or if the lead agency determines a project to be exempt to CEQA, the substantive requirements in the Government Code regarding fire protection must be satisfied. Information on how to submit these subdivision maps to the State Board can be found in the California Code of Regulations (CCR), Title 14, §§ 1266.00, 1266.01, and 1266.02.

3.4 Fire Safe Regulations

California Public Resource Code (PRC) Section 4290. The State Board of Forestry has the authority to adopt regulations for minimum fire safety standards applicable to SRA lands under the authority of the department, and to VHFHSZs. The Fire Safe regulations are codified in CCR, Title 14 (Natural Resources), Division 1.5 (Department of Forestry), Chapter 7 (Fire Protection) under Subchapter 2 (SRA Fire Safe Regulations), §§ 1270-1276. These regulations generally address the following:

- Standards for signs identifying streets, roads, and buildings.

- Minimum private water supply reserves for emergency fire use.
- Fuel modification standards for fuel breaks and greenbelts.
- Road and driveway standards for emergency fire equipment access and public evacuation.

They do not supersede local regulations that equal or exceed minimum regulations adopted by the State (PRC § 4290(c).

California Building Standards Code

The State of California has adopted a minimum model code for use within all 58 counties of the State. These provisions can be found within California Code of Regulations Title 24 – Parts 1 through 12. The code is updated on a triennial basis with the last update occurring on January 1, 2023.

The California Building Standards Code is a compilation of three types of building standards from three different origins:

- Building standards that have been adopted by state agencies without change from building standards contained in national model codes;
- Building standards that have been adopted and adapted from national model codes to address California's ever-changing conditions; and
- Building standards, authorized by the California legislature, that constitute amendments not covered by national model codes, that have been created and adopted to address particular California concerns.

All occupancies in California are subject to national model codes adopted into Title 24, and occupancies are further subject to amendments adopted by state agencies and ordinances implemented by local jurisdictions' governing bodies.

3.5 Defensible Space Regulations

California PRC Section 4291 / Government Code (GC) Section 51182. These State statue and regulatory provisions define and describe mandatory fire protection measures and responsibilities for maintaining defensible space that apply to all property within the SRA in

California. Per GC § 51182, defensible space regulations also apply to all property in the VHFHSZ within the Local Responsibility Area (LRA).

The defensible space requirements include, but are not limited to, the following:

- 100 feet minimum of vegetation management ("defensible space") around homes
- Removal of dead/dying vegetation
- Vegetation removal around chimneys/stovepipes

Depending on the area, defensible space requirements may include certain exemptions and exceptions from code. Moreover, jurisdictions may require extension of the minimum distance beyond property lines or as needed for insurance. The State Board provides direction for complying with the defensible space regulations in CCR Title 14, §§ 1299.01- 1299.05 which incorporates by reference additional information outlined in the State Board's General Guidelines for Creating Defensible Space. Due to the recent passage of AB 3074 (2020), defensible space compliance will soon require more intense fuel reduction activities and the creation of an ember-resistant zone within 5 feet of a structure. The State Board will provide additional guidance and must amend the regulations to reflect these changes on or before January 1, 2023.

El Dorado County Code Chapter 8.09

The County of El Dorado has more restrictive requirements, in some cases, than State statutes and regulations pertaining to Defensible Space around homes and buildings. El Dorado County Codes and Ordinances Chapter 8.09 pertains to all requirements and administrative actions associated with Vegetation Management and Defensible Space. The purpose of this chapter is to provide for the removal of hazardous vegetation and combustible materials situated in the unincorporated areas of the County so as to reduce the potential for fire and to promote the safety and welfare of the community. The chapter applies to all improved parcels and designated unimproved parcels within the County, and establishes annual on-going maintenance of those parcels to prevent vegetation from growing back and posing a fire hazard to the community.

3.6 Other Plans and Regulations

El Dorado County Local Hazard Mitigation Plan.

The County of El Dorado last updated its Local Hazard Mitigation Plan (LHMP) in April, 2019[19]. The purpose of the LHMP is to guide hazard mitigation planning to better protect the people and property of the County from the effect of hazard events. Based on a comprehensive risk assessment the LHMP identified that it is vulnerable to several hazards. The threat of wildfire was among those hazards identified as posing the highest risk to the communities and population within the County.

The wildfire risk assessment provisions within the LHMP are described within Section 3.2.15. Wildfires are identified within the LHMP[20] as highly likely to occur within all areas of the County. Prolong dry seasons, warmer temperatures created by climate change, drought and tree mortality are all significant factors in the increased risk of wildfire occurring in the County.

California Governor's Office of Planning and Research - Fire Hazard Planning Technical Advisory

This planning guide is one in a series of technical advisories provided by the Governor's Office of Planning and Research (OPR) as a service to professional planners, land use officials, and California Environmental Quality Act (CEQA) practitioners. OPR issues technical guidance on issues that broadly affect land use planning, including the application of CEQA. The advisory was published in August, 2022.

The goal of this technical advisory is to provide a robust planning framework for addressing fire hazards, reducing risk, and increasing resilience across California's diverse communities and landscapes. To accomplish this goal, it is essential that local agencies (i.e., cities and counties) develop and incorporate effective policies and implementation programs in their general plans and integrate their general plans with other relevant hazard and risk reduction policies, plans, and programs. This advisory provides guidance on those policies and programs, and is also

[19] See El Dorado County Local Hazard Mitigation Plan; ElDoradoCounty_LHMP.pdf (edcgov.us); accessed August 31, 2023.
[20] ibid

intended to assist city and County planners in discussions with professionals from fire hazard prevention and mitigation, disaster preparedness, and emergency response and recovery agencies as they work together to develop effective fire hazard policies for the general plan.

El Dorado Hills County Water District Ordinance 2022-01 (Fire Code)

The El Dorado County Water District (EDHCWD) has adopted the 2022 California Fire Code (CFC) with several local amendments which are more restrictive than those described in the CFC. EDHCWD updates its local fire code ordinance in conjunction with the triennial update to the California Building Standards Code. Specific local amendments contained within the ordinance that may impact the Project include the following:

- Fire apparatus access road design criteria as described in Section 503.2.1
- Dead end roads and driveways as described in Section 503.2.5
- Fire lane marking requirements described in Section 503.3.1
- Security gate design criteria as described in Section 503.6
- Address identification criteria as described in Section 505.1
- LP-Gas storage tank limits as described in Section 6104.2
- Residential fire sprinkler system installation requirements found in Chapter 80.
- Fire-Flow requirements for buildings as described in Appendix B
- Fire Apparatus access road design criteria described in Appendix D.

El Dorado Hills County Water District Ordinance 2023-01 (Unimproved Parcel Maintenance)

EDHCWD has adopted local regulations related to Hazardous Vegetation Management on Unimproved Parcels located throughout the district. Specific provisions contained within the ordinance that may impact the Project include the following:

- Hazardous vegetation maintenance on unimproved parcels that are one (1.0) acre in size or smaller
- Hazardous vegetation maintenance on unimproved parcels over one-acre (1.01) in size or larger

- Unimproved parcels known to contain, or that the property owner believes, may contain habitat for rare, threatened, or endangered plant or animal species
- Duty of property owner to abate fire hazards on their property
- Acceptable methods of clearance of hazardous vegetation and combustible materials
- Reoccurring fire hazards
- Penalties for violating the ordinance

In addition, the El Dorado County Fire Chiefs Association has created several Fire Protection Standards, as permitted by the California Fire Code, to clarify certain provisions of the Code and their application locally. See Chapter 8 – Appendix F of this FSP for a list of these local standards.

END OF CHAPTER

CHAPTER 4: FIRE PROTECTION PLANNING

4.1 Chapter Overview

The purpose of this Chapter is to describe the recommended fire prevention and emergency planning best practices for the Generations at Green Valley Project. This Chapter is consistent with nationally recognized and accepted practices for safeguarding life and property from the hazards of fire and other dangerous conditions associated with a wildfire and/or urban conflagration. This Chapter is based on a Project-specific wildfire hazard and risk assessment as described in California Fire Code Section 4903 and includes analysis on the following subjects:

- Emergency Vehicle Access Requirements
- Road and Address Signage Requirements
- Emergency Water Supply Requirements
- Applicable Building Codes and Standards for Wildfire Safety
- Fire Protection System Requirements

4.2 Wildfire Hazard and Risk Assessment Factors

The threat of wildfire exposure to people, critical infrastructure, buildings, and communities is based upon a comprehensive vulnerability assessment of an area. This vulnerability assessment is usually completed through the evaluation of both *fire hazard* and *fire risk* factors. The term "hazard" describes the density of live or dead vegetation that may be ignited by the various fire risks or causes that can increase a fire's intensity or rate of spread such as topography or weather conditions. The term "risk" describes the potential damage a fire can due to buildings, critical assets/infrastructure, and other values at risk in individual open space areas and other wildland urban interface areas.

Landowners, managers, and fire officials need to consider the potential fire hazard and risk factors that may make their community vulnerable to a wildfire when making land management and development decisions in fire-prone areas[21]. This assessment also aids fire agencies in the preparation of pre-incident plans and resource deployment actions such as fire equipment

[21] Wildfire Hazard and Risk Assessment, United Nations Office for Disaster Risk Reduction, 2017

staffing levels and resource placement during critical fire periods. This assessment should consider the factors described in Table 4 when assessing the wildfire exposure potential for an area:

Table 4: Hazard and Risk Assessment Factors

Hazard Assessment Factors	Risk Assessment Factors
• Landscape level vegetation (fuel) types • Landscape level topography • Weather conditions present during seasonal and critical fire weather periods • Prior fire history in the area • Ember / firebrand spread potential • Other criteria as determined by CAL FIRE	• Subdivision design points • Site vegetation (fuel) types • Site topography • Defensible Space measures • Building construction materials used • Roofing materials used • Local fire protection capabilities • Fire protection water sources • Utilities • Critical assets / infrastructure at risk

4.3 Wildfire Vulnerability Assessment for the Project

The fire risk factor scoring for the Project is described in Table 3. The overall risk rating can be described as Low (0-39), Moderate (40-59), High (60-74) and Very-High (75+). When analyzing individual fire risk factor ratings within the Project area the following terms are used:

- **LOW RISK** – Fire risk factors present typically do not support rapid fire spread.
- **MODERATE RISK** – Fire risk factors present may support moderate fire spread, but burning ember distribution is limited to less than ½ mile.
- **HIGH RISK** – Fire risk factors present may support rapid fire spread and ember distribution beyond ½ mile.
- **VERY-HIGH RISK** – Fire risk factors present may support extreme fire spread and intensity.

NOTE: No **Very High-Risk** factors are currently identified within the Project area.

See Table 5 and the subsequent description below for additional analysis on the fire risk rating for the Project.

Table 5: Fire Risk Rating[22] for the Generations at Green Valley Project

No.	Risk Factor	Low	Moderate	High	Very-High	Total
		0-3	4-6	7-8	9-10	
1	Subdivision Design Points	3				3
2	Vegetation Fuel Type		6			6
3	Defensible Space		6			6
4	Site Topography		6			6
5	Building Construction Materials		6			6
6	Roofing Materials	3				3
7	Fire Protection – Water Source	3				3
8	Fire Protection – Fire Department Capability	3				3
9	Utilities	3				3
10	Critical Assets / Infrastructure at Risk	0				0
	Total	15	24	0	0	39

Overall Wildfire Risk Rating: **Low** (39)

The fire risk factors associated with the *Subdivision Design Points* are considered "**Low**" based on the current site plan design. The Project is accessed via two access controlled road connections (A-Drive, C-Drive) to Green Valley Road on the north side of the Project. Green Valley Road is a public road maintained by the County of El Dorado. The Project is accessed by an Emergency Access/Egress (EAE) connection to Lima Way on the south side of the Project. This EAE will be designed and operated as a second access road connection for both emergency responders, and civilians during an evacuation, in accordance with EDHCWD Fire Code Section D107.2. Two additional EVAs for emergency vehicle use only are provided within the Project. All roads within the Project will be designed in accordance with EDHFD and CAL FIRE emergency vehicle access requirements.

[22] Based on the 2023 ICC Wildland Urban Interface Code. Additional risk factors such as defensible space, fire department capacity and critical assets/infrastructure at risk are also evaluated as part of this risk assessment based on local fire agency requirements. The rating scale has been simplified to describe a range of between 0-10 for ease in describing the overall risk score.

The fire risk factors associated with the *Vegetation Fuel Types* are considered "**Moderate**" based on the current site plan design. The primary vegetation types found in the Project area today pose the threat of rapid fire spread during long dry periods of the year. The Project will contain approximately 57.6 acres of open space lands. The wildfire mitigation measures described in Chapter 6 will reduce the fire risk to nearby buildings when implemented by the HOA.

The fire risk factors associated with *Defensible Space* are considered "**Moderate**" for the Project. Preparedness actions such as ensuring that adequate defensible space meeting the requirements found in State and Local regulations, along with on-going wildfire fuel reduction practices established with this FSP on undeveloped sections of the Project, will limit the risk of a wildfire damaging buildings within this Project and surrounding communities.

The fire risk factors associated with *Site Topography* are considered "**Moderate**" for the Project. All parcels established within this Project have average slopes of less than 20%. Open space lots adjacent to the residential lots may have slopes up to 60%. The Project is located on north and east aspects. These factors, along with the vegetation fuel described previously, will lead to rapid fire spread conditions during heightened fire danger periods.

The fire risk factors associated with *Building Construction Materials* are considered "**Moderate**" for the Project. The risk of building-to-building ignition during a wildfire is present due to the close proximity of the buildings (<30 feet) proposed within the Project. All new buildings constructed within the Project will utilize materials and construction methods (e.g. Class A roof cover, vent screening, ignition-resistant construction, etc.) for exterior wildfire exposure as described in in California Building Code Chapter 7A and this FSP.

The fire risk factors associated with *Roofing Materials* are considered "**Low**" for the Project. All new buildings built within the Project will be provided with a Class A Roof as required by El Dorado County Code Section 110.16.110. The design of each roof assembly shall comply with California Building Code Section 705A and this FSP.

The fire risk factors associated with *Fire Protection – Water Source* are considered "**Low**" for the Project. The Project will be provided with a municipal water supply system meeting the fire protection requirements for all buildings within the Project.

The fire risk factors associated with *Fire Protection – Fire Department Capability* are considered "**Low**" for the Project. The Project site is currently served by EDHFD and CAL FIRE. Emergency response times to the Project site are consistent with the average response time standards for community region areas established by the County of El Dorado.

The fire risk factors associated with *Utilities* are considered "**Low**" for the Project. All electrical power distribution lines serving the Project will be buried underground reducing the wildfire risk in the subdivision. Unless the Project is developed using only electric, each parcel will have natural gas supplied by PG&E for heat and other fuel needs.

The fire risk factor associated with *Critical Assets / Infrastructure at Risk* sites in the Project should be considered "**Low**" for the Project. The Project as proposed contains one value and assets identified within Chapter 8 – Appendix A.

It is important to remember that the risk factor ratings described do not imply that a community is at greater or lower risk due to its overall rating. Fires can, and do, cause significant damage to property and buildings even when they occur in areas that may receive an overall low or moderate rating. Failure to maintain adequate defensible space, critical fire weather conditions and/or lack of available fire suppression resources due to other emergency incidents may cause a fire to increase its intensity and fire spread beyond the capabilities of firefighters on scene.

4.4 Emergency Vehicle Access Requirements

Emergency vehicle access is an important element of the FSP for the Project area. Emergency vehicle access can be described as the means (e.g., roads, bike paths, trails, etc.) by which firefighters can enter an area to quickly mitigate a wildfire incident before it spreads to adjacent properties and critical assets / infrastructure at risk. Joint efforts to develop and maintain ingress/egress for local evacuation and fire suppression response are required to ensure that both public and firefighter safety is provided.

See Figure 9 for additional information on the gated access, EVA and EAE locations within the Project, and Section 5.2 for a further description on the multiple evacuation route options.

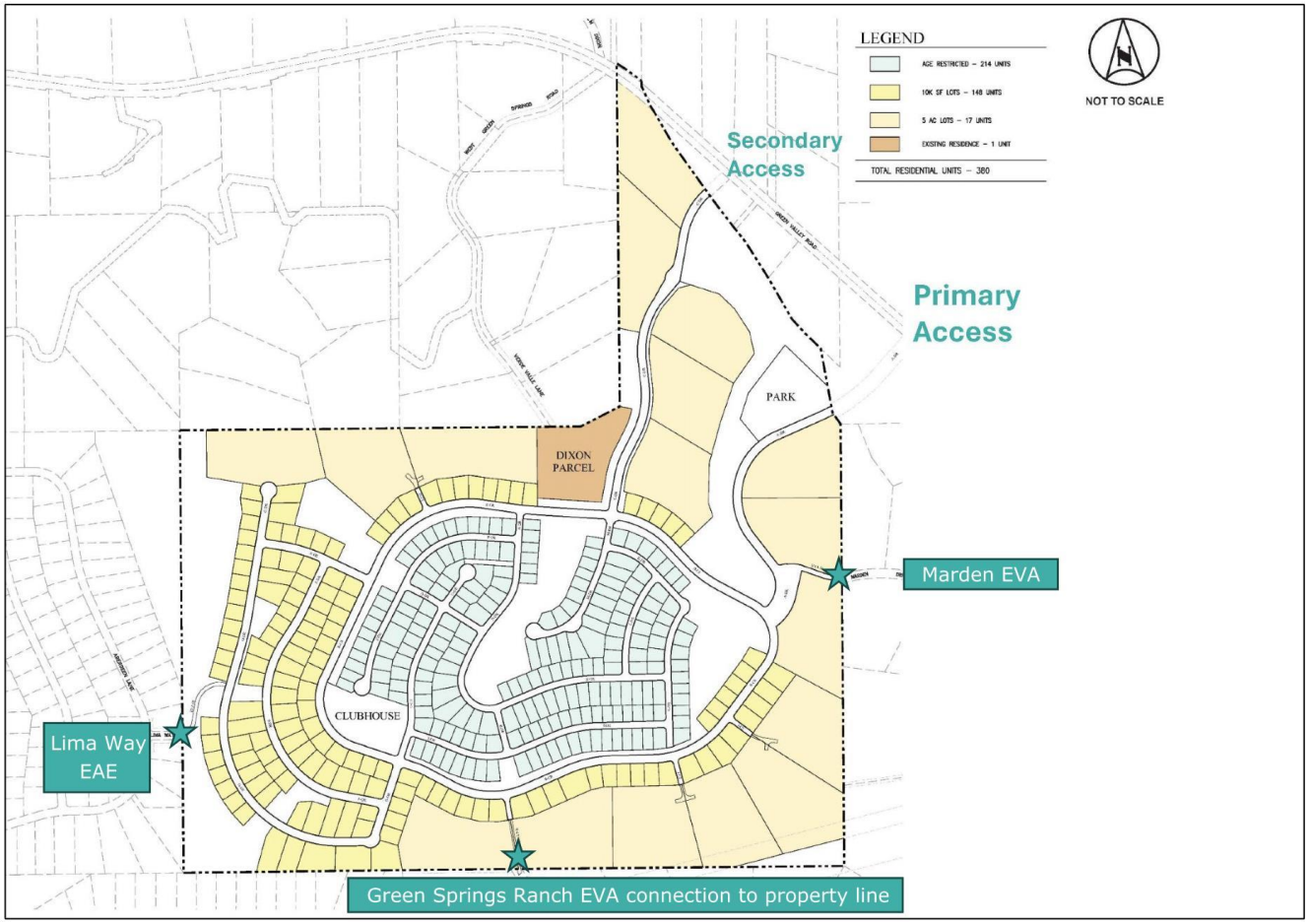

Figure 9: Generations at Green Valley Project Entrances (Figure Courtesy of DKS Associates)

The main entry/exit point and emergency response routes to the Project will be A-Drive, identified in Figure 9 as being the east entrance off of Green Valley Road. This intersection will be controlled via a new traffic signal that will be installed with the Project. Emergency vehicle access is also available from Green Valley Road via C-Drive, identified as the west entrance off of Green Valley Road. Civilian vehicle turning movements from this connection are limited to right-in/right-out only[23].

The EAE connection to Lima Way will be designed and operated as a second emergency vehicle access road connection and will allow for civilians use during an evacuation in accordance with EDHCWD Fire Code Section D107.2 (Access Remoteness). This EAE will connect the Project to the Highland View community. An automatic gated entry is proposed for this location. The gated entry shall comply with the applicable automatic gate design criteria

[23] The final design of this traffic calming measure shall allow for emergency vehicle movement from all directions as required by EDHFD.

described in El Dorado County Code Section 130.30.090 (D) and EDHFD Standard No. B-002 (Automatic Gates on Fire Apparatus Roads).

The Marden Road, and East Green Springs Road connections are EVA use only road connections located on the east side of the Project. Both EVAs connect to the Green Springs Ranch community. The East Green Springs EVA would only connect to the Green Springs Ranch community if the Green Springs Ranch Association chooses to complete the extension in the future and at their discretion.

All roads serving the project shall meet the emergency vehicle access requirements described in Chapter 8 – Appendix D, F, and G along with the provisions described in California Code of Regulations Title 24 – Part 9 (California Fire Code).

No speed bumps, speed humps, speed control dips, etc. shall be permitted on emergency vehicle access roadways. All other traffic calming devices shall be prohibited unless approved by EDHFD as required by CFC 503.4.1.

Each lot will be accessed by a private driveway connection. Driveways shall be constructed to meet the following minimum standards:

- Driveways serving as the primary means for emergency vehicle access shall be provided to within 150-feet of all portions of the building.

- Driveways shall provide not less than 12-feet of unobstructed road width, not including shoulders, throughout the entire length of the road. An unobstructed horizontal clearance from vegetation of not less than 10-feet along both sides of the driveway, and a vertical unobstructed clearance of 15-feet, shall be provided along the length of the driveway.

- Driveways exceeding 150-feet in length, but less than 800-feet, shall provide a turnout near the midpoint of the driveway. Where the driveway exceeds 800-feet turnouts shall be provided no more than 400-feet apart.

- Turnouts shall be a minimum 12-feet in width and 30-feet in length with minimum 25-foot tapered ends.

- Driveways shall be designed and maintained to support the imposed live load of not less than 40,000 pounds gross vehicle weight for emergency vehicle access. A report, prepared by a geotechnical or civil engineer, verifying the ability of the road to bear the required minimum weight shall be submitted with any plan indicating the construction of fire apparatus access roads. Verification of constructed roadway shall be provided by a geotechnical or civil engineer prior to the final inspection of the project.

- Turns in fire apparatus access roads shall have a minimum 40-foot inner and 56-foot outer turning radius.

- Approach and departure angles in fire apparatus access roads shall not exceed 5% over a distance of 5-feet.

- A turnaround shall be provided on driveways over 150-feet in length and shall be within 50-feet of the building.

See Chapter 8 – Appendix D for further analysis on how the project complies with the fire safe provisions required by California Code of Regulations (CCR) Title 14 – Sections 1270-1275.

4.5 Road and Address Signage Requirements

Newly constructed or approved roads shall be identified by a name or number through a consistent system that provides for sequenced or patterned numbering and/or non-duplicative naming as approved by the County of El Dorado. Road signs shall be visible and legible from both directions of vehicle travel for a distance of at least one hundred (100) feet. Road signs shall meet the following criteria:

- Road signs shall be placed at the intersection of roads.
- Road sign assemblies shall be constructed of non-combustible materials.
- The road sign background shall be of a reflective material and of a contrasting color to the address numbers or letters.
- Road numbers or letters shall be of a reflective material, of a contrasting color to the sign background, and with a height of not less than 4-inches and with a width of ½-inch stroke.
- Spacing between road numbers or letters shall be between ½-inch and 1-inch.

- Road signs shall be installed a minimum of 7-feet above the traveled way.

A sign identifying traffic access or flow limitations, including but not limited to, weight or vertical clearance limitations, dead-end roads, one-way roads, or single lane conditions shall be placed:

- At the intersection preceding the traffic access limitation, and
- No more than one hundred (100) feet before such traffic access limitation.

All buildings within the Project shall be issued an address by the County of El Dorado which conforms with the overall address system. Utility and miscellaneous buildings are not required to have a separate address. The address installation, location and visibility on the building shall meet the requirements found in CCR Title 24, Part 9 (Fire Code), Section 505 and EDHFD Standard No. B-001 (Addressing of Buildings). Building address signs shall meet the following additional criteria as required by EDHFD:

- Address numbers on each residential building shall be either internally or externally illuminated.

When the building address is located more than 150-feet from the road serving the Project the address sign shall be placed at the driveway entrance onto the parcel. The address sign shall meet the following additional criteria:

- Signs shall be mounted between 4-feet and 7-feet above grade.
- Posted no further than 5-feet from either the driveway or roadway travelled way, and on the same side of the road as the serviced driveway.
- Oriented perpendicular to the direction of travel on the roadway and legible from both directions of travel on the driveway.
- Address numbers shall be reflective and contrasting in color to the sign background, and with a number height of not less than 4-inches and with a stroke width of 1/2-inch.

4.6 Fire Protection Water Supply Requirements

Section 1275.02 (Water Supply) of California Code of Regulations Title 14 (Fire Safe Regulations), and Section 507 (Fire Protection Water Supplies) of California Code of Regulations

Title 24 – Part 9 (California Fire Code), both require an approved water supply that is capable of supplying the required fire flow for fire protection for all new buildings hereafter constructed. As the number of buildings and their square footages is not known at this date the following general information on required fire flows is the only data currently available for analysis. The required fire flows for determining the water supply needs for the project are described in Table 6.

Table 6: Fire-Flow Requirements[24] for the Project

Fire-Flow Calculation Area (square feet)	Automatic Sprinkler System Type	Minimum Fire-Flow (gallons per minute)[25]	Flow Duration (hours)
0-3,600	CFC 903.3.1.3[26]	1,000	1
3,601 and greater	CFC 903.3.1.3	½ Value in CFC Table B105.1 (2)	2

The Project is located in an area of El Dorado Hills that has adequate water supply capabilities for fire protection available to it. The municipal water service provider for the El Dorado Hills area is the El Dorado Irrigation District (EID). The Project will be served by a large municipal water tank storage system operated by EID that is just south of the Project site in Highland View.

The Project will install a municipal water supply system using fire hydrants supplied by EID for fire protection purposes. This water supply system will be capable of meeting and/or exceeding the Project minimum fire-flow requirements of no less than 1,000 GPM @ 20 pounds per square inch gauge (PSIG) for a 1-hour duration as identified in the California Fire Code (CFC). Fire hydrants meeting EID, EDHFD and CAL FIRE requirements will be spaced on average every 500-feet along both public and private roads serving the Project in accordance with the CFC

4.7 Building Siting and Setbacks

All parcels within the Project must provide a minimum 30-foot setback for all buildings from all property lines and/or the center of a road, as required by CCR Title 14 - § 1276.01 (a). The purpose of this setback requirement is to reduce the intensity of a wildfire through structure-

[24] "Fire Flow" is the flow rate of a water supply, measured at 20 pounds per square inch (psi) residual pressure, that is available for firefighting.

[25] CFC Appendix Section B103.2 authorizes the fire code official to increase the fire-flow requirements when conditions indicate an unusual susceptibility to group fires or conflagrations.

[26] See NFPA Standard 13D (*Standard for the Installation of Sprinkler Systems in One and Two-Family Dwellings and Manufactured Homes)* as amended by the State of California in Title 24 – Part 9, Chapter 80.

to-structure ignition sources. A reduction of this minimum setback is permitted by this regulation in some cases[27].

The following specific alternative material and construction methods, exceeding the minimum criteria described in CBC Chapter 7A, shall be implemented within the Project to meet the "Practical Effect" principles described in CCR Title 14 - §1276.01 when buildings are located within 30-feet of property lines to reduce the potential for building-to-building fire spread may include, but are not limited to[28], the following provisions:

- Block any spaces between roof decking and the Class A roof covering to prevent embers from catching and igniting the building; and

- Eaves shall be enclosed on the underside with non-combustible material, ignition-resistant material, or minimum two (2) inch lumber; and

- Exterior walls shall be constructed with non-combustible building materials such as stucco, fiber cement, stone, or brick, and comply with California Code of Regulations Title 24, Part 2, Chapter 7A, Section 707A; and

- Use WUI ember and flame-resistant vents, conforming with the requirements described in ASTM E2886, to protect exterior wall openings when the wall is located within 30-feet of another building or faces the Wildland Fuel Reduction Zone areas. Dryer vents shall be metal and equipped with a louver or flap; and

- Exterior windows, skylights, glazed doors, and glazed openings within exterior doors shall be multi-paned with at least two (2) tempered panes, minimum twenty (20) minute fire rated, or fire-resistant glass block units. Shutters installed over windows shall be non-combustible; and

- Areas under first floor bay windows shall be enclosed with non-combustible walls; and

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[27] CCR Title 14 - § 1276.01(b) does allow for a reduction in the minimum setback based upon findings that support the practical reason for the reduction and alternative methods are implemented to reduce building-to-building ignition.

[28] The Project will comply with all applicable state and local code and regulatory requirements to achieve "Practical Effect" at the time of issuance of the building permit.

- Exterior doors of buildings shall be non-combustible, or have a non-combustible exterior storm door, and comply with California Code of Regulations Title 24, Part 2, Chapter 7A, Section 708A ; and

- A minimum non-combustible area of 6 vertical inches, measured from the ground up (at grade) and from any attached horizontal surface like a deck, shall be provided on the exterior of all buildings. Non-combustible materials can include brick, stone, fiber-cement siding, or concrete; and

- Fencing materials located within 5-feet of a building shall be constructed of non-combustible materials. Areas located between 0-feet and 5-feet from all buildings shall remain non-combustible. Back-to-back, combustible fencing shall be separated by a minimum of five (5) feet; and

- Landscape materials and other vegetation located within 0'-100' of dwellings shall comply with the fire-resistant standards of EDHFD and CAL FIRE; and

- Accessory and miscellaneous structures, as defined in the California Building Code, located within the reduced fire setback zone shall comply with this plan and California Code of Regulations Title 24, Part 2, Chapter 7A, Section 710A; and

- Decks, including posts, joists, railing, stairs, and walking surfaces, shall be non-combustible and comply with California Code of Regulations Title 24, Part 2, Chapter 7A, Section 709A; and

- Projections shall be non-combustible, ignition resistant, or one (1) hour fire-rated in accordance with IWUIC, Section 503.2, and/or NFPA 1144, Section 5.2; and

- Gutters and downspouts shall be of non-combustible material. Gutters shall be provided with a non-combustible leaf guard.

See EDHFD Standard No. 7 (Residential Setback for Structure Defensible Space) for additional information.

Fencing materials adjacent to non-irrigated open space areas shall be constructed of non-combustible materials.

CCR Title 14 - §1276.02 requires local jurisdictions to identify "Strategic Ridgelines", for all land use projects to reduce the fire risk and improve fire protection in the community. All new parcels being created by this Project are not located in a potential ridgeline area. EDHFD has confirmed that no strategic ridgelines are proposed at this time within the Project boundaries.[29]

4.8 Applicable Building Codes and Standards for Wildfire Safety

New buildings constructed within the Project will comply with the current requirements of the California Building Code (CBC). All residential dwellings in the Project shall be provided with an approved automatic fire sprinkler system, as required by State law and County of El Dorado Planning & Building Department requirements. Accessory buildings, detached garages, outdoor living space buildings, and other miscellaneous buildings located on the property shall be constructed in accordance with the current CBC requirements to reduce the risk of a fire spreading to the primary buildings on-site. See Chapter 8 – Appendix E for additional details regarding local building department requirements. For general building construction standards for new residential dwellings refer to the current California Building Standards Code located at: Codes (ca.gov).

Single-family dwellings, storage buildings and accessory buildings constructed within the Project shall be constructed and maintained in accordance with the current design standards found in *California Building Code (CBC) Chapter 7A* (**Materials and Construction Methods for Exterior Wildfire Exposure**). Examples of where construction methods and other development activities shall meet the ignition resistant requirements found in this Chapter include, but are not limited to, the following:

- Class A roof assembly with a Class A roof covering, fire resistant valley flashing, and an approved means to prevent the accumulation of leaves and debris in roof gutters.
- Ventilation openings into enclosed attics, enclosed eave soffit spaces, enclosed rafter spaces and underfloor ventilation openings.

[29] Phone communication with EDHFD Fire Prevention Specialist Marshall Cox, September 27, 2023.

- Exterior wall materials, decks, porches, balconies, stairs, and other projections.
- Roof eaves and exterior porch ceilings.
- Exterior windows, doors, glazing and skylights.
- Accessory buildings and miscellaneous buildings located within 50' of another building.

Construction activities shall comply with California Fire Code (CCR T24 - Part 9), Chapter 33 (Fire Safety During Construction and Demolition) as required by EDHFD and CAL FIRE. The relevant provisions found in this Chapter of the fire code include:

- Section 3303 - Development of a Site Safety Plan
- Section 3304 - Temporary Heating Equipment
- Section 3305 - Precautions Against Fire
- Section 3306 - Flammable and Combustible Liquids
- Section 3307 - Flammable Gases
- Section 3308 - Explosive Materials
- Section 3309 - Portable Generators
- Section 3310 - Fire Reporting
- Section 3311 - Required Access for Emergency Vehicles
- Section 3313 - Water Supply for Fire Protection
- Section 3316 - Portable Fire Extinguishers
- Section 3317 - Motorized Construction Equipment

4.9 Fire Protection System Requirements

All buildings within the Project are required to comply with the applicable fire protection system requirements described in CFC Chapter 9. An approved automatic fire sprinkler system is required by these regulations within all new single-family buildings within the Project. The design of these fire sprinkler systems shall conform with CFC 903.3.1.2 (NFPA 13D Sprinkler Systems). The installation of these systems within buildings shall conform with the design and installation standards of EDHFD.

Smoke and Carbon Monoxide alarm devices shall be provided in all occupied living areas of each building as described in CFC Sections 907.2.11 and 915.

END OF CHAPTER

CHAPTER 5: EMERGENCY PREPAREDNESS AND PRE-EVACUATION PLANNING

5.1 Chapter Overview

The purpose of this chapter is to describe the community evacuation planning analysis for the Project and surrounding neighborhoods in the event of an evacuation warning or order being issued by local officials of a local wildfire or similar event. See Chapter 8 - Appendix C for additional details.

This Chapter is based on a Project-specific hazard and risk assessment as described in Chapter 4, and includes analysis on the following subjects:

- Community Evacuation Types and Decision Making
- Community Evacuation Routes
- Pre-Identified Community Wildfire Safety Zones
- Emergency Evacuation Shelters
- Emergency Evacuation Education Materials
- Emergency Notification

5.2 Community Evacuation Types and Decision Making

The California Office of Emergency Services (CALOES) defines the term evacuation to mean "the organized, phased, and supervised withdrawal, dispersal, or removal of civilians from dangerous or potentially dangerous areas and their reception and care in safe areas." The decision to initiate a local evacuation during a wildfire emergency rests with the public safety agencies (law enforcement and fire) based on a comprehensive threat assessment made in the field. The implementation and enforcement of evacuation orders rests with law enforcement.

Evacuation types typically focus on one or more of the following methods:

- Evacuation Warnings Issued by Public Safety Officials
- Evacuation Orders Issued by Public Safety Officials

- Pre-Identified Wildfire Safety Zones when evacuating the community is not practical
- Temporary Refuge Area / Shelter in Place decisions made by residents/visitors

The principal goal of a wildfire evacuation is to protect the public from the threat of a wildfire without injury or death.[30] To achieve this goal the objectives of a manageable and successful evacuation by the public include the following:

- Immediate identification of a wildfire threat and constant awareness of the fire behavior that may impact your location;
- Receiving emergency alerts and communications from public safety officials and responding to their directions in an appropriate fashion;
- Recognizing the need to depart from the area in a judicious and prepared departure;
- Safely and competently evacuating to an area outside a hazardous area;

5.3 Generations at Green Valley Pre-Evacuation Planning

The County of El Dorado does not currently make its community evacuation plans for the El Dorado Hills area available to the public for review. However, multiple evacuation options are available from the project site and, in the event of emergency, the evacuation route will be determined by the Public Safety Officials at the emergency scene based on numerous considerations, including the location of the fire. As part of the environmental review, the County of El Dorado County Sheriff's Department, Office of Emergency Services (County OES) will also review the Project, and the Fire Safe Plan, and evaluate any potential impacts to the existing emergency evacuation routes.

The Project has completed a *Wildfire Evacuation Study* that has been prepared by DKS Associates on April 8, 2024. See Appendix L for additional details regarding that analysis. Government Code Section 65302.15 requires cities and counties to identify evacuation routes and locations "*under a range of emergency scenarios*." The capacity, safety, and viability of evacuation routes associated with the project must be analyzed against the range of emergency scenarios to ensure that it does not impair the implementation of an adopted emergency response plan or evacuation plan.

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[30] See *Literature Review of the State-of-the-Science in Wildfire Evacuation* (2022); Marin Wildfire Prevention Authority.

The Project site is not subject to substantial hazards other than wildfire. Compliance with federal, state, county and local regulations will ensure that risks associated with seismic events, flooding, geological conditions, and hazardous materials are minimized. The evacuation study analysis that has been performed for the Project does not evaluate compounding disasters (e.g. simultaneous wildfire and hazardous materials incidents) or cascading effects (e.g. phone communication disruption during a wildfire).

The FSP information below does not ensure that wildfires or evacuation routes will unfold precisely as depicted nor does it identify the evacuation routes to be taken by the public during an evacuation order. Evacuation orders and evacuation route designation are the purview and responsibility of the El Dorado County Sheriff's Department. A wildfire scenario that results in changes to the factors described below may result in different outcomes.

The wildfire scenario and associated planning and modeling created for the Project are designed to require significant activation of evacuation routes, resources, and locations. The analysis makes no assumptions regarding the use of temporary areas of refuge or shelter-in-place strategies to protect residents and visitors within the project. The wildfire scenario parameters are based on three conditions associated with the project that can be pre-planned for during the evacuation planning efforts: [1] fire hazard severity zone; [2] prior large fire history in the area; and [3] hazardous vegetation types present in the area within and surrounding the project.

To stress the evacuation analysis the following worst case wildfire scenario factors are proposed as part of the FSP:

- The wildfire originates north of the project area in the general vicinity of Hickok Road.
- The ignition occurs on a Saturday in October between 2:00 pm and 4:00 pm.
- The weather conditions present at the time include Dry Bulb Temperatures between 70-90° F; Relative Humidity between 10-14%; Midflame Wind Speeds of 30 M.P.H. from the North; Live Fuel Moisture of 50%.
- The predominant fuel type found in the area is Fuel Model 4 (Chaparral).
- Average topographical slopes in the area are between 0 (Flat) to 20 (Mild) percent.

Using the Behave Plus[31] 6.0 computer program, and the factors described above, the scenario anticipates rapid fire spread south towards Green Valley Road and the project between 30-60 minutes after ignition. Maximum rate of fire spread south towards the project will be between 0 and 386 chains[32] per hour (Ch/h).

See Figure 10 for the proposed wildfire scenario for the evacuation analysis.

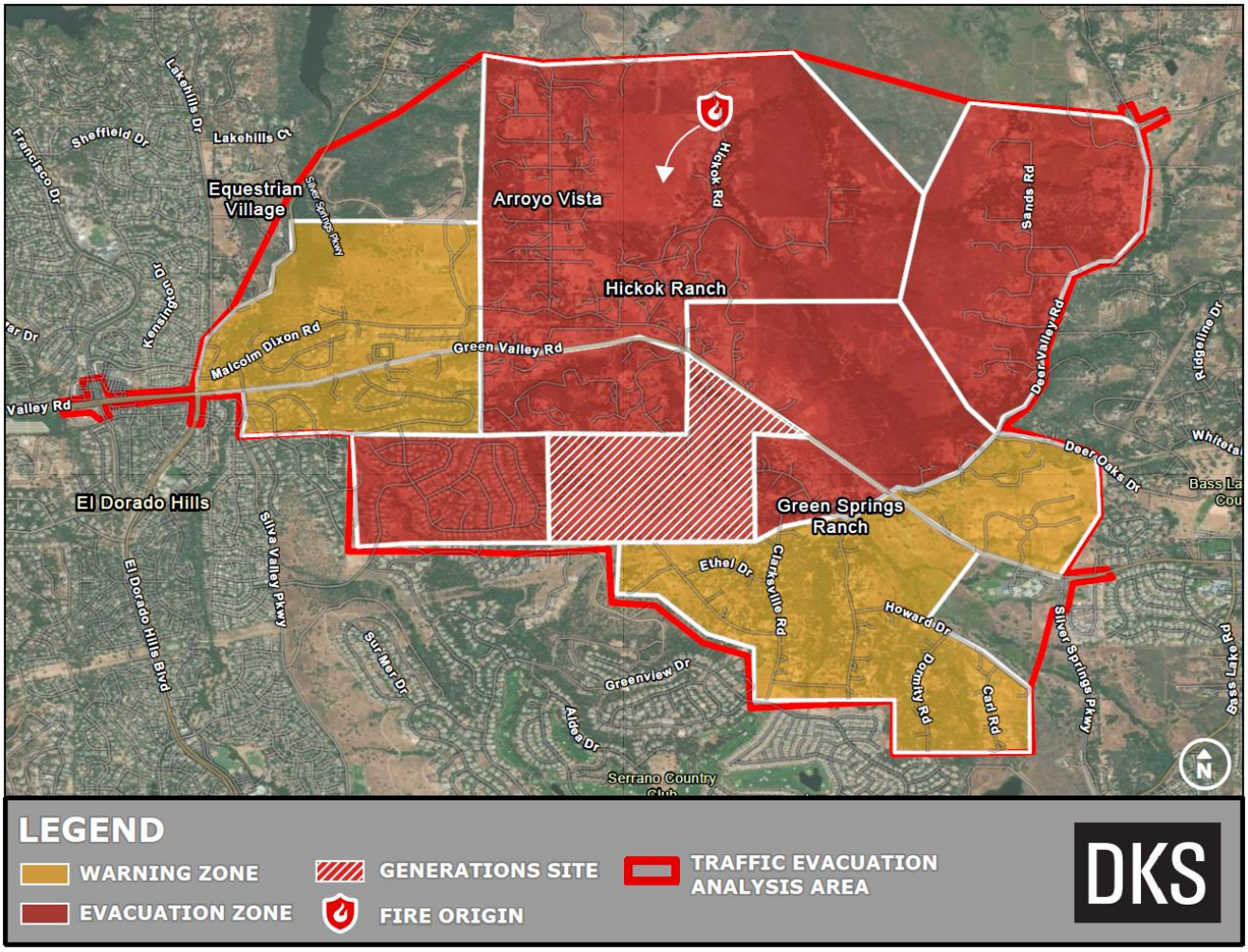


Figure 10: Proposed Wildfire Evacuation Scenario (Courtesy of DKS Associates)

The fire behavior modeling performed for this scenario assumes in the first hour that [1] no active fire suppression efforts[33] occur and [2] no large barriers (e.g., roads, greenbelts, water features) slow the spread of the wildfire south and east. Weather conditions present do not moderate

[31] Behave Plus is a Windows-based fire modeling system for estimating fire behavior and fire characteristics.
[32] The rate of spread is measured in chains. One chain equals 66 feet in length.
[33] It is anticipated that the immediate priorities for first responders would be to focus on civilian evacuations and structure defense efforts.

during the projected time period. The total acreage destroyed by the wildfire during the first 60 minutes using the modeling is estimated to be up to 2,500 acres. This wildfire scenario envisions dangerous rates of fire spread as the fire approaches the project area. In addition, significant ember cast conditions may lead to numerous small fires burning in and around homes and private property simultaneously in the fire area.

See Figure 11 for an area map with the available evacuation routes for the Project.

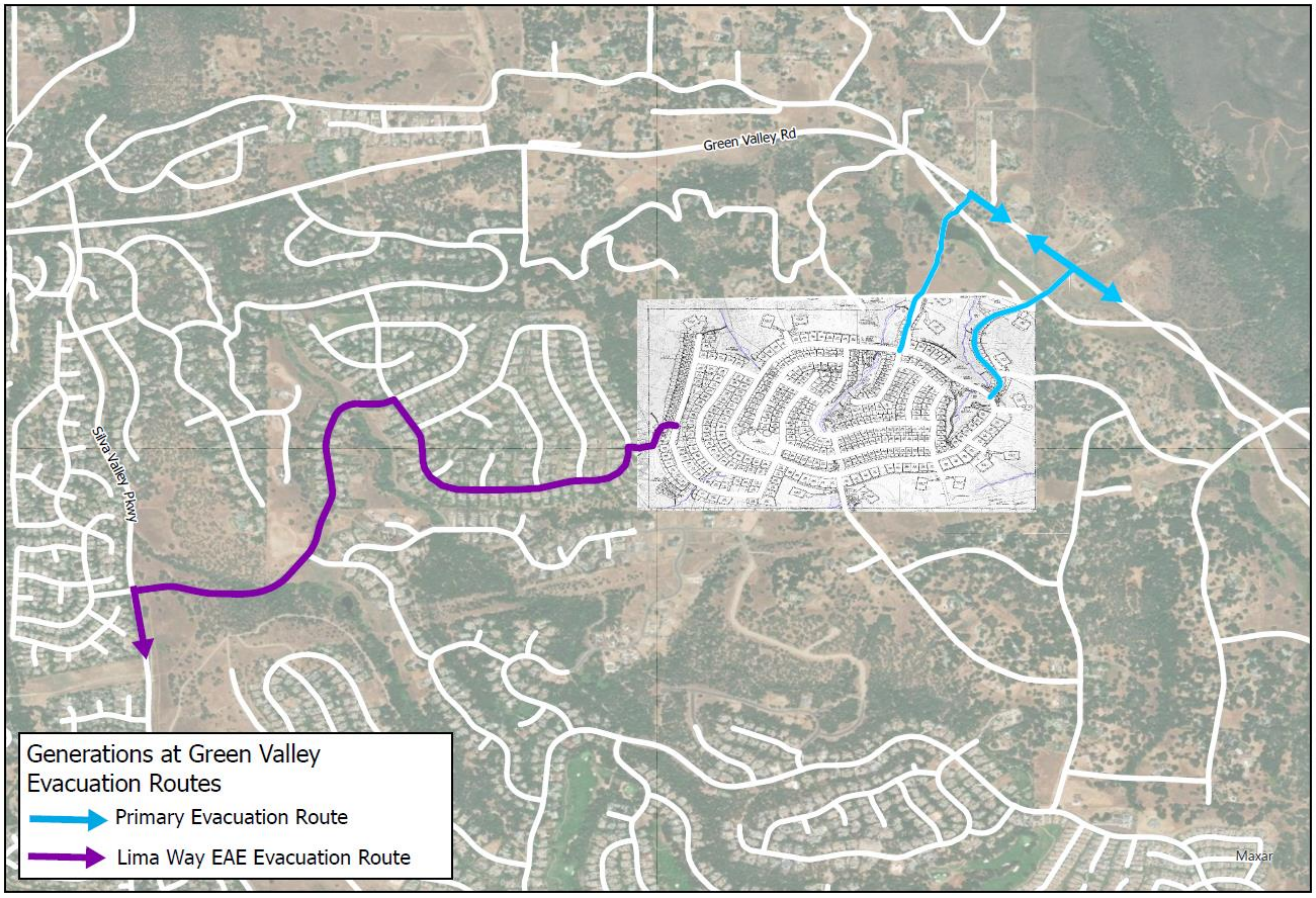


Figure 11: Area Map for Project Showing Evacuation Routes (Courtesy of DKS Associates)

The location of the Project next to a known community transportation route (Green Valley Road) will permit the Project population and the existing community population to efficiently evacuate the area while maintaining emergency vehicle access. In addition, the resident and visitor population (854 persons +/-) will not adversely impact the existing evacuation routes used during an emergency by the El Dorado Hills community due to the wildfire hazard mitigation work within the Project boundaries, available road network, and emergency alert system capabilities accessible to the Project residents.

All of the access points and adjoining public and private roads within the Project can be utilized for emergency vehicle access and civilian evacuation during an emergency as determined by the Public Safety Officials at the scene. All areas within the Project have access to two or more evacuation routes as required by the EDHCWD Fire Code. The most likely mode of transport by the residents of the Project are private vehicle ownership and private transportation services that will permit the majority of residents to move out of danger once they are directed to evacuate by Public Safety Officials.

The project will increase the number of residents to the area, but will provide emergency vehicle access and multiple exits from the project to access multiple evacuation routes. Aside from capacity increasing improvements to maintain level of service standards consistent with the County's General Plan, the Project will not adversely impact any of the existing community evacuation routes, or create a situation that establishes limited evacuation route access.

Future residents and visitors should remain vigilant to the threat of a wildfire in the area at all times. Residents should utilize the resources described in Sections 5.4 and 5.5, and be prepared to evacuate their families and animals when ordered to evacuate by a law enforcement or fire official. To increase preparedness for a potential wildfire evacuation the HOA should consider limiting on-street parking during red-flag fire weather conditions in residential areas with limited roadway capacity, and leaving all gated entrances in the open position to improve evacuation capacity.

5.4 Emergency Evacuation Education Measures

CAL FIRE has an effective community education program to assist residents and visitors prepare for a wildfire[34]. The program is titled *Ready-Set-Go* and is designed to assist persons in preparing for and leaving a residence threatened by a local wildfire. This information should be made available to new and existing residents and homeowners through information packets and community websites whenever practical. See Chapter 8 – Appendix J for additional information about this program.

[34] CAL FIRE, *Ready Set Go;* http://www.readyforwildfire.org/ .

5.5 Emergency Notification

Community notification is an important aspect of evacuation planning. Evacuations are often initiated by emergency officials who issue notifications and instructions to the affected populations using various tools such as opt-in mass alert systems, reverse-911, the Integrated Public Alert & Warning System (IPAWS), social media, and the internet. Sirens and door-to-door notifications may also be utilized. If time allows, evacuations may be conducted in phases, starting by notifying and evacuating areas of the community that may be affected first.

In El Dorado County all public safety agencies have partnered to implement the *RAVE* alert notification system.[35] The alert system is managed by the El Dorado County Sheriff's Office and allows for public safety agencies to quickly send an emergency alert to citizens in all geographic areas of the County. This system enables the El Dorado County Sheriff's Office of Emergency Services (County OES) to provide residents with critical information quickly in a variety of situations, such as severe weather, unexpected road closures, missing persons, and evacuations of buildings or neighborhoods. El Dorado RAVE provides community members with emergency notifications through telephone call, text message, and email notifications.

El Dorado County has been authorized by FEMA to use the Integrated Public Alert & Warning System (IPAWS). This is FEMA's national system for local alerts that provides authenticated emergency and life-saving information to the public through mobile phones using Wireless Emergency Alerts, to radio and television via the Emergency Alert System, and on the National Oceanic and Atmospheric Administration's Weather Radio.

END OF CHAPTER

[35] El Dorado County RAVE, Citizen Notification System; El Dorado County Emergency Alerts (edso.org)

CHAPTER 6: FUEL REDUCTION MANAGEMENT AND DEFENSIBLE SPACE CONCEPTS

6.1 Chapter Overview

The purpose of this chapter is to describe the recommended long-term comprehensive fuel reduction management and defensible space best practices for the Project. The best practices include [1] adequate defensible space within 100' of all buildings; and [2] the establishment of a Wildfire Fuel Reduction Zone (WFRZ) for all lands located within the Open Space. This Chapter is based on California Government Code Section 51182 and California Fire Code Section 4903 and includes analysis on the following subjects:

- Defensible Space Requirements
- Wildfire Fuel Reduction Zone Requirements
- Defensible Space Zone and Wildfire Fuel Reduction Zone Criteria
- Fuel Reduction on Vacant Parcels / During Construction
- Reoccurring Fuel Reduction Maintenance Frequency

6.2 Defensible Space Requirements

The term "Defensible Space" refers to reducing the wildfire vulnerability in WUI Zones by actions that will decrease the potential of heat, flames and embers spreading to buildings. Defensible space work around buildings should be performed within 3 zone areas based on the fire risk reduction efforts necessary to protect the occupants and property. The 3 defensible space zones around buildings are described as:

Zone 0 – Ember Resistant Zone

Zone 0 extends 5-feet from buildings, buildings, decks, etc.

The ember-resistant zone is currently not required by law, but scientific data has proven it to be the most important of all the defensible space zones. This zone includes the area under and around all attached decks, and requires the most stringent wildfire fuel

reduction. The ember-resistant zone is designed to keep fire or embers from igniting materials that can spread the fire to the home. The following provides guidance for this zone, which may change based on the regulation developed by the California Board of Forestry and Fire Protection. See Figure 12 below to match the item number with the corresponding zone.

1. Use hardscape like gravel, pavers, concrete, and non-combustible mulch materials. No combustible bark or mulch.
2. Remove all dead and dying weeds, grass, plants, shrubs, trees, branches, and vegetative debris (leaves, needles, cones, bark, etc.); Check roofs, gutters, decks, porches, stairways, etc.
3. Remove all branches within 10-feet of any chimney or stovepipe outlet
4. Limit plants in this area to low growing, nonwoody, properly watered, and maintained plants.
5. Limit combustible items (outdoor furniture, planters, etc.) on top of decks
6. Relocate firewood and lumber to Zone 2
7. Replace combustible fencing, gates, and arbors attached to the home with non-combustible alternatives
8. Consider relocating garbage and recycling containers outside this zone
9. Consider relocating boats, RVs, vehicles, and other combustible items outside this zone

Zone 1 – Lean, Clean and Green Zone

Zone 1 extends 30-feet from buildings, decks, etc. or to the property line, whichever is closer.

10. Remove all dead plants, grass, and weeds (vegetation).
11. Remove dead or dry leaves and pine needles from yard, roof, and rain gutters.
12. Remove branches that hang over roof and keep dead branches 10-feet away from your chimney.
13. Trim trees regularly to keep branches a minimum of 10- feet from other trees.
14. Relocate wood piles to Zone 2.
15. Remove or prune flammable plants and shrubs near windows.

16. Remove vegetation and items that could catch fire from around and under decks, balconies, and stairs.
17. Create a separation between trees, shrubs and items that could catch fire, such as patio furniture, wood piles, swing sets, etc.

Zone 2 – Reduce Fuel Zone

Zone 2 extends from 30-feet to 100-feet out from buildings, buildings, decks, etc. or to the property line, whichever is closer.

18. Cut or mow annual grass down to a maximum height of 4 inches.
19. All exposed wood piles must have a minimum of 10 feet clearance around them, down to bare mineral soil, in all directions.
20. Create horizontal space between shrubs and trees. (See diagram)
21. Create vertical space between grass, shrubs, and trees. (See diagram)
22. Remove fallen leaves, needles, twigs, bark, cones, and small branches. However, they may be permitted to a depth of 3 inches.

All Zones

23. Mow before 10:00 am, but never when its windy or excessively dry.
24. Protect water quality, do not clear vegetation near waterways to bare soil. Vegetation removal can cause soil erosion – especially on steep slopes.
25. Logs or stumps embedded in the soil must be removed in Zone 0. In Zones 1 and 2 they need to be removed or isolated from other vegetation.

Many of these efforts shall be performed by the land owner except in cases where the setback distance of the building extends onto another property and/or undeveloped land. In those cases, a coordinated effort will be required between the individual property owners and the Home Owners Association (HOA) established for the Project. See CCR Section 5.7 regarding HOA maintenance obligations.

Figure 12 provides additional information on defensible zone spaces around buildings.

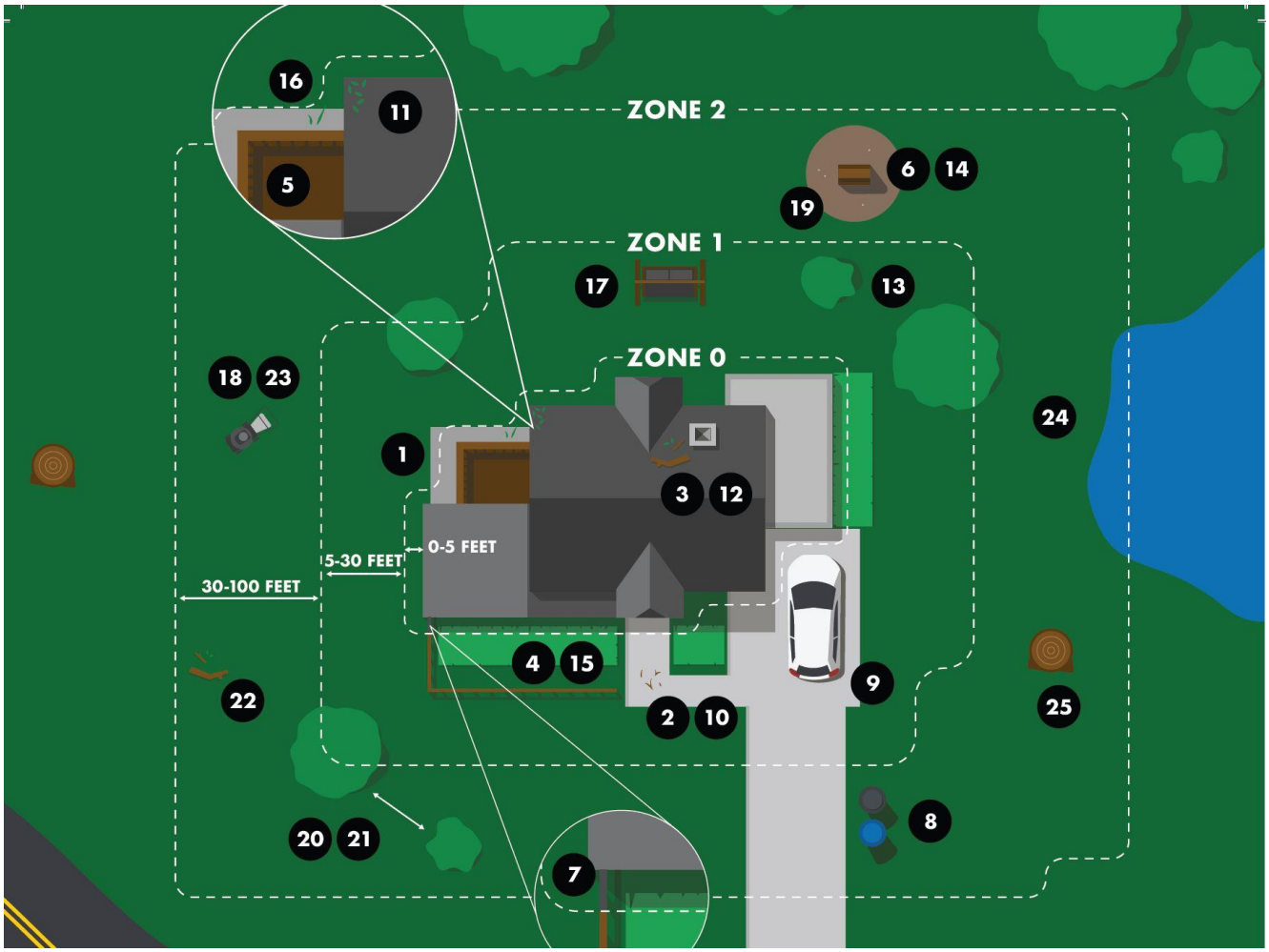


Figure 12: CAL FIRE Defensible Space Zones

6.3 Wildfire Fuel Reduction Zone Requirements

A Wildfire Fuel Reduction Zone (WFRZ) shall be implemented and maintained in the non-irrigated Open Space Buffer in accordance with CAL FIRE, EDHFD and El Dorado County requirements. The WFRZ shall extend from the property line of the adjacent residential lot out 100-feet, or to the boundary with a protected habitat or waterway, whichever is less, to ensure that adequate defensible space is provided for the building.

The WFRZ shall be established and accepted by EDHFD prior to the issuance of the first building construction permit issued by the County of El Dorado for the Project. Maintenance of the WFRZ shall be the responsibility of the landowner prior to the transfer of the obligation to the HOA, and shall be completed prior to May 1st each year unless otherwise ordered to complete this work earlier by EDHFD due to drought or other fire conditions being present. See the specific Wildfire

Fuel Reduction Zone criteria for the Project described within Figure 13 and in Section 6.4 for additional details.

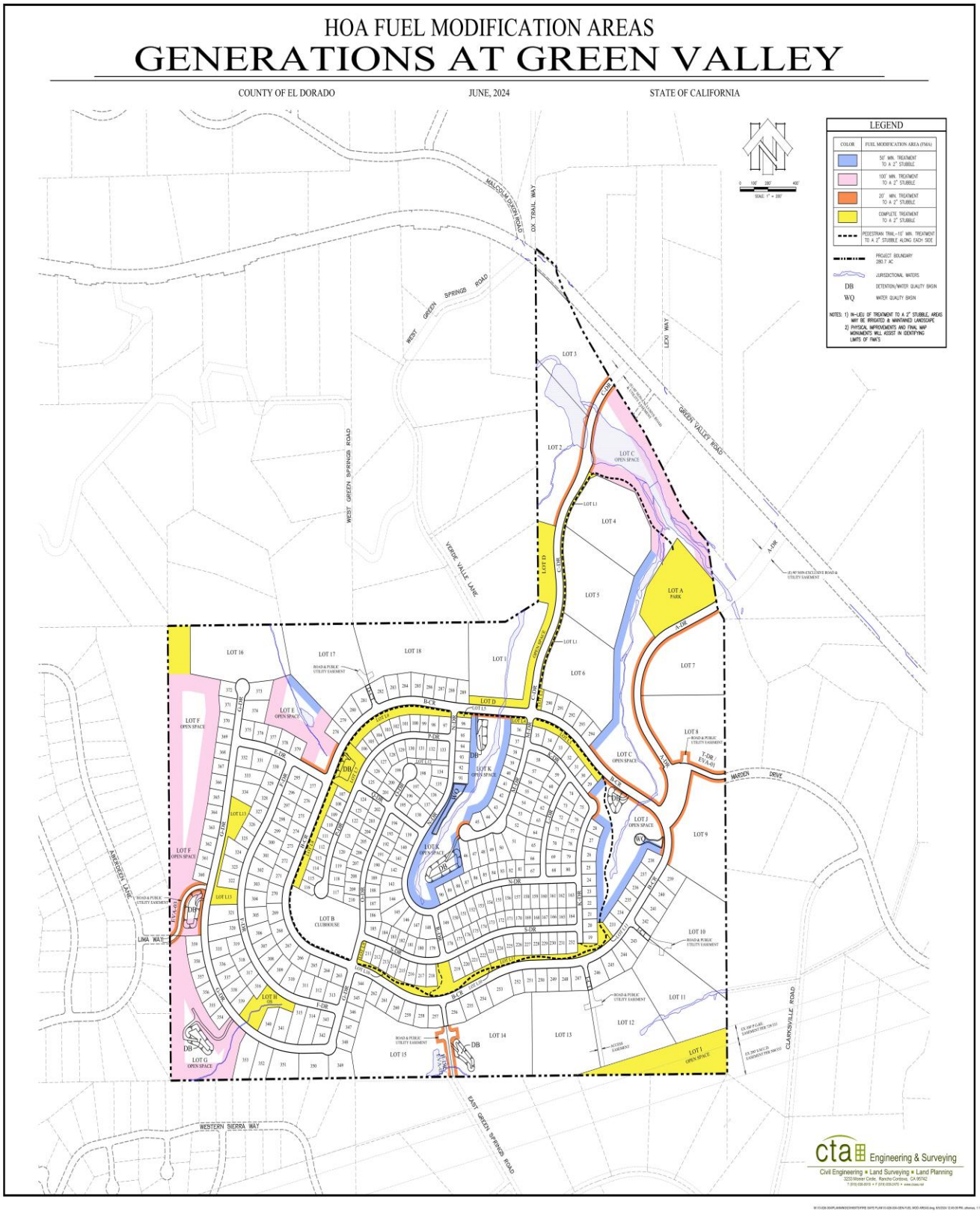


Figure 13 – Generations at Green Valley Fire Safe Exhibit

6.4 Specific Wildfire Fuel Reduction Zone (WFRZ) Criteria for the Project

A. Annual grasses shall be maintained below 2-inches in height within 30-feet of buildings and 4-inches in height in all other areas just after the grasses cure in early spring. Additional fuel treatment work may be necessary throughout the year within 100-feet of all property lines, where practical, to maintain defensible space requirements.

B. Removal of dead and diseased trees, debris, and the removal of tree limbs on live trees up to a height of 6-feet above the ground. Tree branches are to be limbed to at least 6-feet when possible. The minimum height may be lowered when trees are young or small; or if it is unsafe to reach a 6-foot height due to terrain, equipment, or skill level.

C. Understory fuels over 1-foot in height are to be removed in order to develop vertical separation and low horizontal continuity of fuels. Individual plants or pairs of plants may be retained provided there is a horizontal separation between plants of 3 to 5 times the height of the residual plants and the residual plants are not within the drip lines of an overstory tree.

D. Fuel reduction shall include the removal of all dead vegetation 4-inches or less in diameter. Trunks shall be cut flush with the ground. The removal of additional trees shall be done in consultation with CAL FIRE, EDHFD and County staff.

E. Threatened and/or endangered species may be present within the WFRZ areas. The recommendations of the Project biologist shall be implemented with respect to avoiding loss or harm to the affected species, or restoration and/or compensation measures to be undertaken if the species' habitat cannot be avoided. For example, if nesting raptors are present, the nesting tree shall not be removed and no tree removal or mechanical activity shall occur within a buffer zone established around the nest until the young have fledged. The Federal and/or State agency with jurisdiction over the affected protected species shall also be consulted.

F. It is desirable to remove as much brush and large vegetation as possible within the WFRZ areas. However, if individual plants or pairs of plants are desired to be left, leave plants with the following characteristics: young plants less than 5 feet tall and individual or pairs of plants that are no more than 5-feet in width.

G. All dead trees within 100-feet of all property lines, where practical shall be removed.

H. The removal of all dead limbs and trees laying on the ground within 85-feet of all property lines shall be completed annually.

I. All trails and Class 1 Bike Paths located in open space areas shall have no less than a 10-foot wide WFRZ established along either side of the trail/path.

J. The cutting of vegetation materials shall be done with CAL FIRE approved spark arrestors.

K. The removal of annual grasses and other fine fuels shall be completed through the use of plastic string weed trimmers or other CAL FIRE approved equipment.

L. Chipping of material is permitted. Chipped material shall be removed from the site unless otherwise approved by the land owner representative and EDHFD.

M. Prescribed burning and / or herbicide use is not allowed within the DSZ and WFRZ areas unless such use is approved via permit by CAL FIRE, EDHFD and the County of El Dorado.

N. Approved fire suppression equipment is required on-site at all times during the fuel-reduction activities.

O. All fuel reduction work shall be performed using every reasonable measure to minimize erosion, ground disturbing activities and soil damage. Where the ground is exposed by fuel reduction efforts, the area shall be revegetated (i.e., seeded) and/or erosion control measures shall be installed prior to October 15.

P. Pruning of live trees shall be performed in accordance with the Best Management Practices set forth by the International Society of Arboriculture (ISA) and conform to ANSI A300 Standards for Tree Care.

6.5 Fuel Reduction on Vacant Parcels / During Construction

Unimproved parcels adjacent to buildings, either when vacant or under construction, can pose a significant fire risk to adjacent occupied buildings. To reduce the risk of wildfires spreading to nearby buildings, EDHFD requires all unimproved properties to comply with Ordinance 2023-01.

See Chapter 8 – Appendix H for specific requirements based on parcel size. Construction activities shall conform to the current Fire Code provision required by EDHFD and CAL FIRE.

6.6 Annual Fuel Reduction Maintenance Frequency

The effectiveness of the long-term comprehensive effort requires certain elements to be maintained on an annual or otherwise noted frequency. The coordination of fuel reduction work between the applicant, EDHFD and CAL FIRE staff, and the adjacent land owner(s) to complete these projects in a timely fashion is imperative for the success in minimizing the wildfire risk in the Project area. All maintenance shall be performed prior to May 1st each year unless otherwise ordered to complete this work earlier by EDHFD due to drought or other fire conditions being present.

Table 7 provides additional details regarding the recommended maintenance frequency for various activities described in the Plan.

Table 7: Maintenance Frequency for the DSZ and WFRZ

Action Item	Party Responsible	Frequency
Complete annual inspection of the WFRZ using the criteria found in Section 6.	**Land Owner/EDHFD**	**Annual**
Remove/trim annual grasses to less than 2-inches in height within 30-feet of buildings and 4-inches height within 100-feet of adjacent property lines.	**Land Owner**	**Annual**
Remove debris piles, dead trees (snags) or dying trees, down trees, and limbs.[36]	**Land Owner**	**Annual**
Removal of understory fuels that contribute to fire spread.	**Land Owner**	**Annual**
Removal or treatment of invasive exotic plant species that may invade the area cleared in the DSZ and WFRZ areas.	**Land Owner**	**Annual**
Remove biomass materials from the site and dispose of in accordance with best practices.	**Land Owner**	**Annual**
Remove ladder fuels (tree limbs) to 6-foot DBH and increase tree canopy spacing.	**Land Owner**	**10 Year + As Needed**

End of Chapter

[36] This plan recognizes that dead and dying trees may provide a beneficial use for the habitat. The removal of this vegetation should be completed after an inspection by representatives from CAL FIRE, EDHFD and the Land Owner has been completed and a scope of work agreed on by both parties.

CHAPTER 7: SUMMARY OF KEY FINDINGS AND PROJECT RECOMMENDATIONS

7.1 Key Findings for the Project

A. The Project design is consistent with the El Dorado County General Plan fire safety policies and regulations described in Chapter 3.

B. Fire and rescue services for the Project site are the responsibility of the El Dorado Hills Fire Department (EDHFD) in accordance with California Government Code § 66474.02(a)(2)(A). The Project meets or exceeds the minimum levels of service for fire district response in Community Regions in accordance with Policy 5.1.2.2 of the El Dorado County General Plan.

C. Wildfire protection for the adjacent undeveloped SRA lands near the Project are the responsibility of CAL FIRE.

D. The Generations at Green Valley Project (Project) is located within a CAL FIRE SRA designated **High** Fire Hazard Severity Zone. The Project is therefore subject to the regulations found in California Public Resource Code Section's 4290 and 4291. See Chapter 8 - Appendix B for additional information.

E. The Project is consistent with California Public Resource Code Section 4290.5 and Government Code Section 65302. All areas within the Project boundary will have access to a secondary means of egress route for residents and visitors.

F. The Project has an overall Fire Risk Rating of **Low** based upon the ten rating criteria outlined in Chapter 4.

G. The Project has one proposed use, electrical transmission lines, that is identified as a Critical Assets or Essential Service Location that could be at risk during a wildfire.

H. No strategic ridgelines to reduce fire risk and improve fire protection, as described by California Code of Regulations Title 14 - §1276.02, have been identified by the El Dorado Hills Fire Department within the Project or adjoining areas.

I. The location of the Project next to a known community transportation route (Green Valley Road) will permit the Project population and the existing community population to efficiently evacuate the area while maintaining emergency vehicle access.

J. The Project will not expose people or structures to a significant risk of loss, injury or death involving a wildfire, and will not interfere with the existing evacuation routes used during an emergency by the El Dorado Hills community. This is due to the wildfire hazard mitigation measures described in Section 7.3, evacuation mitigation measures recommended in Section 7.4 and Appendix L, available off-site road network, and emergency alert system capabilities accessible to the Project residents.

7.2 Fire Protection Statutes and Regulations Applicable to the Project

A. The Project shall comply with all applicable provisions as described in California Code of Regulations Title 14 (Fire Safe Regulations) and 24 (Building Standards Code).

B. All roads and driveways within the Project shall be constructed, and maintained in accordance with EDHFD and CAL FIRE requirements. See Chapter 8 – Appendix D and G for additional details.

C. All buildings, with the exception of utility and accessory structures, shall be provided with approved address identification prior to occupancy.

D. The Project shall meet the minimum fire-flow requirements as described in Section 4.6, and as required both in California Fire Code (CFC) Section 507, and EDHCWD Ordinance 2022-01 (Fire Code). See Chapter 8 – Appendix G for additional details.

E. All residential dwellings in the Project will be provided with an approved automatic fire sprinkler system designed in accordance with the CFC. Upon occupancy these systems shall be operable and maintained by the individual land owners at all times.

F. All buildings constructed shall have a minimum 30-foot setback from property lines, or the "practical effect" provision approved by EDHFD, to reduce the threat of a wildfire impinging directly on the building. Setback areas may contain driveways, parking areas and/or other non-combustible surfaces. The minimum setback areas may be reduced based upon findings that support the practical reason for the reduction and alternative methods are implemented to reduce building-to-building ignition. When a practical reason for the reduction is necessary the Project shall implement the provisions contained within Subsections 7.3 (D) of this chapter.

G. All buildings shall be provided with a Class A roof covering as required by the El Dorado County Building Code.

H. All buildings shall be constructed and maintained in accordance with the current design standards found in *California Building Code (CBC) Chapter 7A* (**Materials and Construction Methods for Exterior Wildfire Exposure**).

I. No speed bumps, speed humps, speed control dips, etc. shall be permitted on fire access roadways. All other traffic calming devices shall be prohibited unless approved by EDHFD.

J. Gated entrances to private roads and driveways shall meet the current design requirements to allow emergency vehicle access described in Chapter 8 – Appendix F.

7.3 Fire Protection Plan Strategies

A. Street signs and individual building address signage shall conform with the provision described in Section 4.5. Address numbers on each residential building shall be either internally or externally illuminated.

B. Fencing materials adjacent to non-irrigated open space areas shall be constructed of non-combustible materials.

C. Combustible sheds and other outbuildings shall be kept at least 30 feet from residential dwellings and other buildings on each parcel.

D. The following specific alternative material and construction methods, exceeding the minimum criteria described in CBC Chapter 7A, shall be implemented within the Project to meet the "Practical Effect" principles described in CCR Title 14 - §1276.01 when buildings are located within 30-feet of property lines to reduce the potential for building-to-building fire spread may include, but are not limited to[37], the following provisions:

- Block any spaces between roof decking and the Class A roof covering to prevent embers from catching and igniting the building; and

- Eaves shall be enclosed on the underside with non-combustible material, ignition-resistant material, or minimum two (2) inch lumber; and

- Exterior walls shall be constructed with non-combustible building materials such as stucco, fiber cement, stone, or brick, and comply with California Code of Regulations Title 24, Part 2, Chapter 7A, Section 707A; and

- Use WUI ember and flame-resistant vents, conforming with the requirements described in ASTM E2886, to protect exterior wall openings when the wall is located within 30-feet of another building or faces the Wildland Fuel Reduction Zone areas. Dryer vents shall be metal and equipped with a louver or flap; and

- Exterior windows, skylights, glazed doors, and glazed openings within exterior doors shall be multi-paned with at least two (2) tempered panes, minimum twenty (20) minute fire rated, or fire-resistant glass block units. Shutters installed over windows shall be non-combustible; and

- Areas under first floor bay windows shall be enclosed with non-combustible walls; and

- Exterior doors of buildings shall be non-combustible, or have a non-combustible exterior storm door, and comply with California Code of Regulations Title 24, Part 2, Chapter 7A, Section 708A; and

[37] The Project will comply with all applicable state and local code and regulatory requirements to achieve "Practical Effect" at the time of issuance of the building permit.

- A minimum non-combustible area of 6 vertical inches, measured from the ground up (at grade) and from any attached horizontal surface like a deck, shall be provided on the exterior of all buildings. Non-combustible materials can include brick, stone, fiber-cement siding, or concrete; and

- Fencing materials located within 5-feet of a building shall be constructed of non-combustible materials. Areas located between 0-feet and 5-feet from all buildings shall remain non-combustible. Back-to-back, combustible fencing shall be separated by a minimum of five (5) feet; and

- Landscape materials and other vegetation located within 0'-100' of dwellings shall comply with the fire-resistant standards of EDHFD and CAL FIRE; and

- Accessory and miscellaneous structures, as defined in the California Building Code, located within the reduced fire setback zone shall comply with this plan and California Code of Regulations Title 24, Part 2, Chapter 7A, Section 710A; and

- Decks, including posts, joists, railing, stairs, and walking surfaces, shall be non-combustible and comply with California Code of Regulations Title 24, Part 2, Chapter 7A, Section 709A; and

- Projections shall be non-combustible, ignition resistant, or one (1) hour fire-rated in accordance with IWUIC, Section 503.2, and/or NFPA 1144, Section 5.2; and

- Gutters and downspouts shall be of non-combustible material. Gutters shall be provided with a non-combustible leaf guard.

See EDHFD Standard No. 7 (Residential Setback for Structure Defensible Space) for additional information.

E. Wildfire fuel reduction management and defensible space practices for the Project shall follow the requirements identified in Chapter 6.

F. A Restrictive Covenant shall be filed with the final subdivision map which stipulates that a Fire Safe Plan has been prepared and wildfire mitigation measures shall be implemented.

G. "No Smoking" signs shall be posted at all trail entrances.

H. At all trail intersections with the roads that have vehicle access there shall be a knock down bollard or gate with a Knox® padlock, or other approved lock, to allow for the passage of emergency equipment onto the trail.

I. A 5-foot defensible space ember-resistant zone (Zone 0) shall be maintained around all buildings (including fencing within 5 feet).

J. A Homeowners Association (HOA), or other acceptable entity, shall be responsible for maintaining all private emergency vehicle access roads and wildfire fuel reduction zone provisions described in Chapter 6. Reliable on-going sources of funding shall be established and acceptable to EDHFD prior to the recording of the final map for the project. Specifically, and also without limiting the foregoing, the owners shall be responsible for the operation and maintenance of, and for potential liability arising from, the following measures:

- Provisions for the necessary repair and maintenance of the roadway surface (as determined by the HOA and/or EDHFD); and

- Removal of vegetation overgrowing the roadway and infringing on the roadway clear vertical height of fifteen feet (15') or width of twenty feet (20'); and

- Provisions for the maintenance, repair, and/or replacement of NO PARKING-FIRE LANE signage or striping; and

- Provisions for the necessary repair and maintenance of vehicle and pedestrian access gates and opening systems.

7.4 Emergency Preparedness and Evacuation Preparedness Strategies

A. The strategies recommended in the *Generations at Green Valley Wildfire Evacuation Study* (Appendix L) should be considered by all stakeholders.

B. The HOA should consider restricting on-street parking and opening all EVA gates within the Project boundaries during National Weather Service "Red-Flag" fire weather conditions in order to advance traffic flow conditions during an evacuation.

C. CAL FIRE *Ready-Set-Go* education materials should be made available to all new residents of the Project for their use in preparing for an evacuation. EDHFD and CAL FIRE should be encouraged to visit the neighborhood annually to discuss this material and answer questions by the homeowners. See Chapter 8 – Appendix J for additional details.

D. Upon 8 or more dwellings being occupied within the Project the land owners should work together to obtain designation by the National Fire Protection Association (NFPA) as a FIREWISE USA® community. This designation will assist land owners in receiving insurance discounts for their fire insurance premiums. See Chapter 8 – Appendix K for additional details.

E. El Dorado County OES education materials on the *RAVE* program should be made available to all new residents of the Project for use in receiving timely notification information regarding the need to evacuate.

END OF CHAPTER

Chapter 8: PLAN APPENDIXES

Appendix A: Critical Assets / Populations at Risk Checklist

Facility Type	Essential Service	Population at Risk	Infrabuilding at Risk	Facility Count
Fire Station	X			0
Police Station	X			0
Emergency Evacuation Shelter*	X			0
Government Facilities	X			0
General Acute Care Hospital	X			0
Medical Health Facility		X		0
Adult Residential Care Facility		X		0
Child Care Facility		X		0
Adult Care Facility		X		0
Public Elementary School		X		0
Private Elementary School		X		0
Public Middle School		X		0
Private Middle School		X		0
Public High School		X		0
Private High School		X		0
College / University		X		0
Vulnerable Population Centers**		X		0
Water Treatment Plant			X	0
Water Storage Facility			X	0
Water Conveyance System			X	0
Electrical Transmission Lines			X	1
Electrical Substation			X	0
Sewer Lift Station			X	0
Telecommunications Facilities			X	0
Corporation Yard	X			0
* Includes General Population, Access/Functional Needs Shelters, and Animal Shelters				
** Includes Disadvantaged, Disabled and Low-Income Census Areas				

Appendix B: PRC 4290 and 4291 Checklist

Project Name:				
	CCR Title 14	**Conforms**	**Does Not Conform**	**N/A**
Safe Access and Egress				
Road Width	§1273.01	X		
Roadway Surface	§1273.02	X		
Road Grades	§1273.03	X		
Road Radius	§1273.04	X		
Road Turnarounds	§1273.05	X		
Road Turnouts	§1273.06	X		
Road and Driveway Buildings	§1273.07	X		
Dead-end Roads	§1273.08	X		
Gate Entrances	§1273.09	X		
Signing and Building Numbering				
Road Name Signs	§1274.01	X		
Road Sign Installation	§1274.02	X		
Addresses for Buildings	§1274.03	X		
Address Installation, Location	§1274.04	X		
Fire Water Standards				
Application	§1275.01	X		
Approved Fire Water Supply	§1275.02	X		
Hydrants	§1275.03	X		
Signing of Water Sources	§1275.04	X		
Building Siting and Fuel Mod.				
Building and Parcel Siting/Setbacks	§1276.01	X		
Ridgelines	§1276.02			X
Fuel Breaks	§1276.03			X
Greenbelts, Open Spaces	§1276.04	X		
Disposal of Flammable Vegetation	§1276.05			X

NOTES:

1. No roadway buildings (e.g., bridges, culverts, etc.) and dead-end roads are proposed within the project.
2. The review of road designs will occur during the civil improvement and building permit application process.
3. The review of proposed street signage and building numbering will occur during later phases of the project.

Appendix C: Emergency Evacuation Planning Checklist

No.	Risk Factor	Yes	No	Unknown
1	Existing Evacuation Plan is Current?			X
2	General Population Shelters Identified?			X
3	Special Care Shelters Identified?			X
4	Animal Care Shelters Identified?			X
5	Temporary Safe Refuge Areas Identified?			X
6	Emergency Evacuation Routes Identified?	X		
7	Mass Notification System Identified/Used?	X		
8	Ready-Set-Go or Similar Program Used?			X
9	Evacuation Plans Available to the Public?			X
10	Are First Responders Briefed on the Plan?			X
	Total			

Notes:

1. El Dorado County OES has not publicly created an emergency evacuation plan for use by the public and first responders as of the date of this plan.

2-4. El Dorado County OES has not publicly designated emergency evacuation shelters throughout the County prior to large-scale emergencies.

5-6. The primary emergency evacuation routes in the El Dorado Hills area have not been formally designated by El Dorado County OES as of the date of this plan. The primary transportation routes out of the area include Green Valley Road north of the Project and the East Green Springs EVA through Green Springs Ranch.

7. El Dorado County OES uses *RAVE* as its emergency notification system. The system relies on notifications through existing telephone lines and through "opt-in" sign-ups for cell phones and other devices. See Chapter 8 – Appendix K for additional information on this notification system.

8-10. EDHFD and the adjacent fire agencies utilize tactical pre-fire plans that brief first responders on various pre-fire information.

Appendix D: California Code of Regulations Title 14 §1270-1276

UNOFFICIAL COPY

State Minimum Fire Safe Regulations

Board of Forestry and Fire Protection

FOR INFORMATIONAL USE ONLY
View the official California Code of Regulations online at govt.westlaw.com/calregs

As of April 1, 2023

California Code of Regulations
Title 14 Natural Resources
Division 1.5 Department of Forestry
Chapter 7 - Fire Protection
Subchapter 2 State Minimum Fire Safe Regulations
Articles 1-5

Contents

Article 1 Administration

§ 1270.00. Title

Subchapter 2 shall be known as the “State Minimum Fire Safe Regulations,” and shall constitute the minimum Wildfire protection standards of the California Board of Forestry and Fire Protection.

§ 1270.01. Definitions

The following definitions are applicable to Subchapter 2.
(a) Agriculture: Land used for agricultural purposes as defined in a Local Jurisdiction's zoning ordinances.
(b) Board: California Board of Forestry and Fire Protection.
(c) Building: Any Structure used or intended for supporting or sheltering any use or Occupancy, except those classified as Utility and Miscellaneous Group U.
(d) CAL FIRE: California Department of Forestry and Fire Protection.
(e) Dead-end Road: A Road that has only one point of vehicular ingress/egress, including cul-de-sacs and Roads that loop back on themselves
(f) Defensible Space: The area within the perimeter of a parcel, Development, neighborhood or community where basic wildland fire protection practices and measures are implemented, providing the key point of defense from an approaching Wildfire or defense against encroaching Wildfires or escaping Structure fires. The perimeter as used in this regulation is the area encompassing the parcel or parcels proposed for construction and/or Development, excluding the physical Structure itself. The area is characterized by the establishment and maintenance of emergency vehicle access, emergency water reserves, Road names and Building identification, and fuel modification measures.
(g) Development: As defined in section 66418.1 of the California Government Code.
(h) Director: Director of the Department of Forestry and Fire Protection or their designee.
(i) Driveway: A vehicular pathway that serves no more than four (4) Residential Units and any number of non-commercial or non-industrial Utility or Miscellaneous Group U Buildings on each parcel. A Driveway shall not serve commercial or industrial uses at any size or scale.
(j) Exception: An alternative to the specified standard requested by the applicant that may be necessary due to health, safety, environmental conditions, physical site limitations or other limiting conditions, such as recorded historical sites, that provides mitigation of the problem.
(k) Fire Apparatus: A vehicle designed to be used under emergency conditions to transport personnel and equipment or to support emergency response, including but not limited to the suppression of fires.
(l) Fire Authority: A fire department, agency, division, district, or other governmental body responsible for regulating and/or enforcing minimum fire safety standards in the Local Jurisdiction.
(m) Fire Hydrant: A valved connection on a water supply or storage system for the purpose of providing water for fire protection and suppression operations.
(n) Fuel Break: A strategically located area where the volume and arrangement of vegetation has been managed to limit fire intensity, fire severity, rate of spread, crown fire potential, and/or ember production.
(o) Greenbelts: open space, parks, wildlands, other areas, or a combination thereof, as designated by Local Jurisdictions, which are in, surround, or are adjacent to a city or urbanized area, that may function as Fuel Breaks and where Building construction is restricted or prohibited.
(p) Greenways: Linear open spaces or corridors that link parks and neighborhoods within a community through natural or manmade trails and paths.

(q) Hammerhead/T: A "T" shaped, three-point Turnaround space for Fire Apparatus on a Road or Driveway, being no narrower than the Road or Driveway that serves it.
(r) Hazardous Land Use: A land use that presents a significantly elevated potential for the ignition, prolonged duration, or increased intensity of a Wildfire due to the presence of flammable materials, liquids, or gasses, or other features that initiate or sustain combustion. Such uses are determined by the Local Jurisdiction and may include, but are not limited to, power-generation and distribution facilities; wood processing or storage sites; flammable gas or liquids processing or storage sites; or shooting ranges.
(s) Local Jurisdiction: Any county, city/county agency or department, or any locally authorized district that approves or has the authority to regulate Development.
(t) Municipal-Type Water System: A system having water pipes servicing Fire Hydrants and designed to furnish, over and above domestic consumption, a minimum of 250 gpm (950 L/min) at 20 psi (138 kPa) residual pressure for a two (2) hour duration.
(u) Occupancy: The purpose for which a Building, or part thereof, is used or intended to be used.
(v) One-way Road: A Road that provides a minimum of one Traffic Lane width designed for traffic flow in one direction only.
(w) Residential Unit: Any Building or portion thereof which contains living facilities including provisions for sleeping, eating, cooking and/or sanitation, for one or more persons. Manufactured homes, mobile homes, and factory-built housing are considered Residential Units.
(x) Ridgeline: The line of intersection of two opposing slope aspects running parallel to the long axis of the highest elevation of land; or an area of higher ground separating two adjacent streams or watersheds.
(y) Road: A public or private vehicular pathway to more than four (4) Residential Units, or to any industrial or commercial Occupancy.
(z) Road or Driveway Structures: Bridges, culverts, and other appurtenant Structures which supplement the Traffic Lane or Shoulders.
(aa) Same Practical Effect: As used in this subchapter, means an Exception or alternative with the capability of applying accepted wildland fire suppression strategies and tactics, and provisions for fire fighter safety, including:

(1) access for emergency wildland fire equipment,
(2) safe civilian evacuation,
(3) signing that avoids delays in emergency equipment response,
(4) available and accessible water to effectively attack Wildfire or defend a Structure from Wildfire, and
(5) fuel modification sufficient for civilian and fire fighter safety.

(bb) Shoulder: A vehicular pathway adjacent to the Traffic Lane.
(cc) State Responsibility Area (SRA): As defined in Public Resources Code sections 4126-4127; and the California Code of Regulations, title 14, division 1.5, chapter 7, article 1, sections 1220-1220.5.
§(ee) Structure: That which is built or constructed or any piece of work artificially built up or composed of parts joined together in some definite manner.
(ff) Traffic Lane: The portion of a Road or Driveway that provides a single line of vehicle travel.
(gg) Turnaround: An area which allows for a safe opposite change of direction for Fire Apparatus at the end of a Road or Driveway.
(hh) Turnout: A widening in a Road or Driveway to allow vehicles to pass.

(ii) Undeveloped Ridgeline: A Ridgeline with no Buildings.
(jj) Utility and Miscellaneous Group U: A Structure of an accessory character or a miscellaneous Structure not classified in any specific Occupancy permitted, constructed, equipped, and maintained to conform to the requirements of Title 24, California Building Standards Code.
(kk) Vertical Clearance: The minimum specified height of a bridge, overhead projection, or vegetation clearance above the Road or Driveway.
(*ll*) Vertical Curve: A curve at a high or low point of a Road that provides a gradual transition between two Road grades or slopes.
(mm) Very High Fire Hazard Severity Zone (VHFHSZ): As defined in Government Code section 51177(i).
(nn) Wildfire: Has the same meaning as “forest fire” in Public Resources Code Section 4103.

§ 1270.02. Purpose

(a) Subchapter 2 has been prepared and adopted for the purpose of establishing state minimum Wildfire protection standards in conjunction with Building, construction, and Development in the State Responsibility Area (SRA) and, after July 1, 2021, the Very High Fire Hazard Severity Zones, as defined in Government Code § 51177(i) (VHFHSZ).
(b) The future design and construction of Structures, subdivisions and Developments in the SRA and, after July 1, 2021, the VHFHSZ shall provide for basic emergency access and perimeter Wildfire protection measures as specified in the following articles.
(c) These standards shall provide for emergency access; signing and Building numbering; private water supply reserves for emergency fire use; vegetation modification, Fuel Breaks, Greenbelts, and measures to preserve Undeveloped Ridgelines. Subchapter 2 specifies the minimums for such measures.

§ 1270.03. Scope

(a) Subchapter 2 shall apply to:
(1) the perimeters and access to all residential, commercial, and industrial Building construction within the SRA approved after January 1, 1991, and those approved after July 1, 2021 within the VHFHSZ, except as set forth below in subsection (b).
(2) the siting of newly installed commercial modulars, manufactured homes, mobilehomes, and factory-built housing, as defined in Health and Safety Code sections 18001.8, 18007, 18008, and 19971;
(3) all tentative and parcel maps or other Developments approved after January 1, 1991; and
(4) applications for Building permits on a parcel approved in a pre-1991 parcel or tentative map to the extent that conditions relating to the perimeters and access to the Buildings were not imposed as part of the approval of the parcel or tentative map.
(b) Subchapter 2 does not apply where an application for a Building permit is filed after January 1, 1991 for Building construction on a parcel that was formed from a parcel map or tentative map (if the final map for the tentative map is approved within the time prescribed by the local ordinance) approved prior to January 1, 1991, to the extent that conditions relating to the perimeters and access to the Buildings were imposed by the parcel map or final tentative map approved prior to January 1, 1991.
(c) Affected activities include, but are not limited to:
(1) permitting or approval of new parcels, excluding lot line adjustments as specified in Government Code (GC) section 66412(d);
(2) application for a Building permit for new construction not relating to an existing Structure;

(3) application for a use permit;
(4) Road construction including construction of a Road that does not currently exist, or extension of an existing Road.

(d) The standards in Subchapter 2 applicable to Roads shall not apply to Roads used solely for Agriculture; mining; or the management of timberland or harvesting of forest products.

§ 1270.04. Provisions for Application of these Regulations

This Subchapter shall be applied as follows:
(a) the Local Jurisdictions shall provide the Director of the California Department of Forestry and Fire Protection (CAL FIRE) or their designee with notice of applications for Building permits, tentative parcel maps, tentative maps, and installation or use permits for construction or Development within the SRA, or if after July, 1 2021, the VHFHSZ.
(b) the Director or their designee may review and make fire protection recommendations on applicable construction or development permits or maps provided by the Local Jurisdiction.
(c) the Local Jurisdiction shall ensure that the applicable sections of this Subchapter become a condition of approval of any applicable construction or Development permit or map.

§ 1270.05. Local Regulations

(a) Subchapter 2 shall serve as the minimum Wildfire protection standards applied in SRA and VHFHSZ. However, Subchapter 2 does not supersede local regulations which equal or exceed the standards of this Subchapter.
(b) A local regulation equals or exceeds a minimum standard of this Subchapter only if, at a minimum, the local regulation also fully complies with the corresponding minimum standard in this Subchapter.
(c) A Local Jurisdiction shall not apply exemptions to Subchapter 2 that are not enumerated in Subchapter 2. Exceptions requested and approved in conformance with § 1270.07 (Exceptions to Standards) may be granted on a case-by-case basis.
(d) Notwithstanding a local regulation that equals or exceeds the State Minimum Fire Safe Regulations, Building construction shall comply with the State Minimum Fire Safe Regulations.

§ 1270.06. Inspections

Inspections shall conform to the following requirements:
(a) Inspections in the SRA shall be made by:
(1) the Director, or
(2) Local Jurisdictions that have assumed state fire protection responsibility on SRA lands, or
(3) Local Jurisdictions where the inspection duties have been formally delegated by the Director to the Local Jurisdictions, pursuant to subsection (b).

(b) The Director may delegate inspection authority to a Local Jurisdiction subject to all of the following criteria:
(1) The Local Jurisdiction represents that they have appropriate resources to perform the delegated inspection authority.
(2) The Local Jurisdiction acknowledges that CAL FIRE's authority under subsection (d) shall not be waived or restricted.
(3) The Local Jurisdiction consents to the delegation of inspection authority.
(4) The Director may revoke the delegation at any time.
(5) The delegation of inspection authority, and any subsequent revocation of the delegation, shall be documented in writing, and retained on file at the CAL FIRE Unit headquarters that administers SRA fire protection in the area.

(c) Inspections in the VHFHSZ shall be made by the Local Jurisdiction.

(d) Nothing in this section abrogates CAL FIRE's authority to inspect and enforce state forest and fire laws in the SRA even when the inspection duties have been delegated pursuant to this section.
(e) Reports of violations within the SRA shall be provided to the CAL FIRE Unit headquarters that administers SRA fire protection in the Local Jurisdiction.
(f) When inspections are conducted, they shall occur prior to: the issuance of the use permit or certificate of Occupancy; the recordation of the parcel map or final map; the filing of a notice of completion; or the final inspection of any project or Building permit.

§ 1270.07. Exceptions to Standards

(a) Upon request by the applicant, an Exception to standards within this Subchapter may be allowed by the Inspection entity in accordance with 14 CCR § 1270.06 (Inspections) where the Exceptions provide the Same Practical Effect as these regulations towards providing Defensible Space. Exceptions granted by the Local Jurisdiction listed in 14 CCR § 1270.06, shall be made on a case-by-case basis only. Exceptions granted by the Local Jurisdiction listed in 14 CCR § 1270.06 shall be forwarded to the appropriate CAL FIRE unit headquarters that administers SRA fire protection in that Local Jurisdiction, or the county in which the Local Jurisdiction is located and shall be retained on file at the Unit Office.
(b) Requests for an Exception shall be made in writing to the Local Jurisdiction listed in 14 CCR § 1270.06 by the applicant or the applicant's authorized representative.
At a minimum, the request shall state the specific section(s) for which an Exception is requested; material facts supporting the contention of the applicant; the details of the Exception proposed; and a map showing the proposed location and siting of the Exception. Local Jurisdictions listed in § 1270.06 (Inspections) may establish additional procedures or requirements for Exception requests.
(c) Where an Exception is not granted by the inspection entity, the applicant may appeal such denial to the Local Jurisdiction. The Local Jurisdiction may establish or utilize an appeal process consistent with existing local building or planning department appeal processes.
(d) Before the Local Jurisdiction makes a determination on an appeal, the inspector shall be consulted and shall provide to that Local Jurisdiction documentation outlining the effects of the requested Exception on Wildfire protection.
(e) If an appeal is granted, the Local Jurisdiction shall make findings that the decision meets the intent of providing Defensible Space consistent with these regulations. Such findings shall include a statement of reasons for the decision. A written copy of these findings shall be provided to the CAL FIRE Unit headquarters that administers SRA fire protection in that Local Jurisdiction.

§ 1270.08. Distance Measurements

All specified or referenced distances are measured along the ground, unless otherwise stated.

Article 2 Ingress and Egress

§ 1273.00. Intent

Roads, and Driveways, whether public or private, unless exempted under 14 CCR § 1270.03(d), shall provide for safe access for emergency Wildfire equipment and civilian evacuation concurrently, and shall provide unobstructed traffic circulation during a Wildfire emergency consistent with 14 CCR §§ 1273.00 through 1273.09.

§ 1273.01. Width.

(a) All roads shall be constructed to provide a minimum of two ten (10) foot traffic lanes, not including shoulder and striping. These traffic lanes shall provide for two-way traffic flow to support emergency vehicle and civilian egress, unless other standards are provided in this article or additional requirements are mandated by Local Jurisdictions or local subdivision requirements. Vertical clearances shall conform to the requirements in California Vehicle Code section 35250.

(b) All One-way Roads shall be constructed to provide a minimum of one twelve (12) foot traffic lane, not including Shoulders. The Local Jurisdiction may approve One-way Roads.

(1) All one-way roads shall, at both ends, connect to a road with two traffic lanes providing for travel in different directions, and shall provide access to an area currently zoned for no more than ten (10) Residential Units.

(2) In no case shall a One-way Road exceed 2,640 feet in length. A turnout shall be placed and constructed at approximately the midpoint of each One-way Road.

(c) All driveways shall be constructed to provide a minimum of one (1) ten (10) foot traffic lane, fourteen (14) feet unobstructed horizontal clearance, and unobstructed vertical clearance of thirteen feet, six inches (13′ 6″).

§ 1273.02. Road Surface

(a) Roads shall be designed and maintained to support the imposed load of Fire Apparatus weighing at least 75,000 pounds, and provide an aggregate base.

(b) Road and Driveway Structures shall be designed and maintained to support at least 40,000 pounds.

(c) Project proponent shall provide engineering specifications to support design, if requested by the Local Jurisdiction.

§ 1273.03. Grades

(a) At no point shall the grade for all Roads and Driveways exceed 16 percent.

(b) The grade may exceed 16%, not to exceed 20%, with approval from the Local Jurisdiction and with mitigations to provide for Same Practical Effect.

§ 1273.04. Radius

(a) No Road or Road Structure shall have a horizontal inside radius of curvature of less than fifty (50) feet. An additional surface width of four (4) feet shall be added to curves of 50-100 feet radius; two (2) feet to those from 100-200 feet.

(b) The length of vertical curves in Roadways, exclusive of gutters, ditches, and drainage structures designed to hold or divert water, shall be not less than one hundred (100) feet.

§ 1273.05. Turnarounds

(a) Turnarounds are required on Driveways and Dead-end Roads.

(b) The minimum turning radius for a turnaround shall be forty (40) feet, not including parking, in accordance with the figures in 14 CCR §§ 1273.05(e) and 1273.05(f). If a hammerhead/T is used instead, the top of the "T" shall be a minimum of sixty (60) feet in length.
(c) Driveways exceeding 150 feet in length, but less than 800 feet in length, shall provide a turnout near the midpoint of the Driveway. Where the driveway exceeds 800 feet, turnouts shall be provided no more than 400 feet apart.
(d) A turnaround shall be provided on Driveways over 300 feet in length and shall be within fifty (50) feet of the building.
(d) Each Dead-end Road shall have a turnaround constructed at its terminus. Where parcels are zoned five (5) acres or larger, turnarounds shall be provided at a maximum of 1,320 foot intervals.
(e) Figure A. Turnarounds on roads with two ten-foot traffic lanes.
Figure A/Image 1 on the left is a visual representation of paragraph (b).
(f) Figure B. Turnarounds on driveways with one ten-foot traffic lane.
Figure B/Image 2 on the right is a visual representation of paragraph (b).

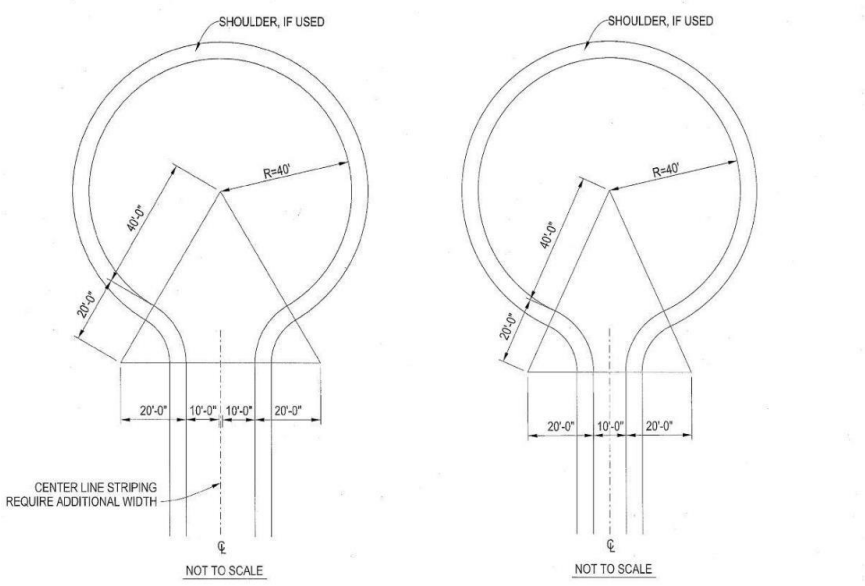


FIGURE FOR 14 CCR § 1273.05. TURNAROUND EXAMPLES

§ 1273.06. Turnouts

Turnouts shall be a minimum of twelve (12) feet wide and thirty (30) feet long with a minimum twenty-five (25) foot taper on each end.

§ 1273.07. Road and Driveway Structures

(a) Appropriate signing, including but not limited to weight or vertical clearance limitations, One-way Road or single traffic lane conditions, shall reflect the capability of each bridge.
(b) Where a bridge or an elevated surface is part of a Fire Apparatus access road, the bridge shall be constructed and maintained in accordance with the American Association of State and

Highway Transportation Officials Standard Specifications for Highway Bridges, 17th Edition, published 2002 (known as AASHTO HB-17), hereby incorporated by reference. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. Vehicle load limits shall be posted at both entrances to bridges when required by the local authority having jurisdiction.
(c) Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces which are not designed for such use, barriers, or signs, or both, as approved by the local authority having jurisdiction, shall be installed and maintained.
(d) A bridge with only one traffic lane may be authorized by the Local Jurisdiction; however, it shall provide for unobstructed visibility from one end to the other and turnouts at both ends.

§ 1273.08. Dead-end Roads

(a) The maximum length of a Dead-end Road, including all Dead-end Roads accessed from that Dead-end Road, shall not exceed the following cumulative lengths, regardless of the number of parcels served:

parcels zoned for less than one acre - 800 feet
parcels zoned for 1 acre to 4.99 acres - 1,320 feet
parcels zoned for 5 acres to 19.99 acres - 2,640 feet
parcels zoned for 20 acres or larger - 5,280 feet

All lengths shall be measured from the edge of the Road surface at the intersection that begins the Road to the end of the Road surface at its farthest point. Where a dead-end road crosses areas of differing zoned parcel sizes requiring different length limits, the shortest allowable length shall apply.
(b) See 14 CCR § 1273.05 for dead-end road turnaround requirements.

§ 1273.09. Gate Entrances

(a) Gate entrances shall be at least two (2) feet wider than the width of the traffic lane(s) serving that gate and a minimum width of fourteen (14) feet unobstructed horizontal clearance and unobstructed vertical clearance of thirteen feet, six inches (13′ 6″).
(b) All gates providing access from a Road to a Driveway shall be located at least thirty (30) feet from the roadway and shall open to allow a vehicle to stop without obstructing traffic on that Road.
(c) Where a One-way Road with a single traffic lane provides access to a gated entrance, a forty (40) foot turning radius shall be used.
(d) Security gates shall not be installed without approval. Where security gates are installed, they shall have an approved means of emergency operation. Approval shall be by the local authority having jurisdiction. The security gates and the emergency operation shall be maintained operational at all times.

Article 3 Signing and Building Numbering

§ 1274.00. Intent

To facilitate locating a fire and to avoid delays in response, all newly constructed or approved Roads and Buildings shall be designated by names or numbers posted on signs clearly visible and legible from the Road. This section shall not restrict the size of letters or numbers appearing on road signs for other purposes.

§ 1274.01. Road Signs.

(a) Newly constructed or approved Roads must be identified by a name or number through a consistent system that provides for sequenced or patterned numbering and/or non-duplicative naming within each Local Jurisdiction. This section does not require any entity to rename or renumber existing roads, nor shall a Road providing access only to a single commercial or industrial Occupancy require naming or numbering.
(b) The size of letters, numbers, and symbols for Road signs shall be a minimum four (4) inch letter height, half inch (.5) inch stroke, reflectorized, contrasting with the background color of the sign.

§ 1274.02. Road Sign Installation, Location, and Visibility.

(a) Road signs shall be visible and legible from both directions of vehicle travel for a distance of at least one hundred (100) feet.
(b) Signs required by this article identifying intersecting Roads shall be placed at the intersection of those Roads.
(c) A sign identifying traffic access or flow limitations, including but not limited to weight or vertical clearance limitations, dead-end roads, one-way roads, or single lane conditions, shall be placed:

(1) at the intersection preceding the traffic access limitation, and
(2) no more than one hundred (100) feet before such traffic access limitation.

(d) Road signs required by this article shall be posted at the beginning of construction and shall be maintained thereafter.

§ 1274.03. Addresses for Buildings.

(a) All Buildings shall be issued an address by the Local Jurisdiction which conforms to that jurisdiction's overall address system. Utility and miscellaneous Group U Buildings are not required to have a separate address; however, each Residential Unit within a Building shall be separately identified.
(b) The size of letters, numbers, and symbols for addresses shall conform to the standards in the California Fire Code, California Code of Regulations title 24, part 9.
(c) Addresses for residential Buildings shall be reflectorized.

§ 1274.04. Address Installation, Location, and Visibility.

(a) All buildings shall have a permanently posted address which shall be plainly legible and visible from the Road fronting the property.
(b) Where access is by means of a private Road and the address identification cannot be viewed from the public way, an unobstructed sign or other means shall be used so that the address is visible from the public way.
(c) Address signs along one-way Roads shall be visible from both directions.
(d) Where multiple addresses are required at a single driveway, they shall be mounted on a single sign or post.

(e) Where a Road provides access solely to a single commercial or industrial business, the address sign shall be placed at the nearest Road intersection providing access to that site, or otherwise posted to provide for unobstructed visibility from that intersection.
(f) In all cases, the address shall be posted at the beginning of construction and shall be maintained thereafter.

Article 4 Emergency Water Standards

§ 1275.00. Intent

Emergency water for Wildfire protection shall be available, accessible, and maintained in quantities and locations specified in the statute and these regulations in order to attack a Wildfire or defend property from a Wildfire.

§ 1275.01. Application

The provisions of this article shall apply in the tentative and parcel map process when new parcels are approved by the Local Jurisdiction.

§ 1275.02. Water Supply.

(a) When a water supply for structure defense is required to be installed, such protection shall be installed and made serviceable prior to and during the time of construction except when alternative methods of protection are provided and approved by the Local Jurisdiction.
(b) Water systems equaling or exceeding the California Fire Code, California Code of Regulations title 24, part 9, or, where a municipal-type water supply is unavailable, National Fire Protection Association (NFPA) 1142, “Standard on Water Supplies for Suburban and Rural Fire Fighting,” 2017 Edition, hereby incorporated by reference, shall be accepted as meeting the requirements of this article.
(c) Such emergency water may be provided in a fire agency mobile water tender, or naturally occurring or man made containment structure, as long as the specified quantity is immediately available.
(d) Nothing in this article prohibits the combined storage of emergency Wildfire and structural firefighting water supplies unless so prohibited by local ordinance or specified by the local fire agency.
(e) Where freeze or crash protection is required by Local Jurisdictions, such protection measures shall be provided.

§ 1275.03. Hydrants and Fire Valves.

(a) The hydrant or fire valve shall be eighteen (18) inches above the finished surface. Its location in relation to the road or driveway and to the building(s) or structure(s) it serves shall comply with California Fire Code, California Code of Regulations title 24, part 9, Chapter 5, and Appendix C.
(b) The hydrant head shall be a two and half (2 1/2) inch National Hose male thread with cap for pressure and gravity flow systems and four and a half (4 1/2) inch for draft systems.
(c) Hydrants shall be wet or dry barrel and have suitable freeze or crash protection as required by the local jurisdiction.
§ 1275.04. Signing of Water Sources.
(a) Each hydrant, fire valve, or access to water shall be identified as follows:
(1) if located along a driveway, a reflectorized blue marker, with a minimum dimension of three (3) inches shall be located on the driveway address sign and mounted on a fire retardant post, or
(2) if located along a road,

(i) a reflectorized blue marker, with a minimum dimension of three (3) inches, shall be mounted on a fire retardant post. The sign post shall be within three (3) feet of said hydrant or fire valve, with the sign no less than three (3) feet nor greater than five (5) feet above ground, in a horizontal position and visible from the driveway, or
(ii) as specified in the State Fire Marshal's Guidelines for Fire Hydrant Markings Along State Highways and Freeways, May 1988.

§ 1275.04. Signing of Water Sources.

(a) Each Fire Hydrant or access to water shall be identified as follows:
(1) if located along a Driveway, a reflectorized blue marker, with a minimum dimension of three (3) inches shall be located on the Driveway address sign and mounted on a fire retardant post, or
(2) if located along a Road,
(i) a reflectorized blue marker, with a minimum dimension of three (3) inches, shall be mounted on a fire retardant post. The sign post shall be within three (3) feet of said Fire Hydrant with the sign no less than three (3) feet nor greater than five (5) feet above ground, in a horizontal position and visible from the Driveway, or
(ii) as specified in the State Fire Marshal's Guidelines for Fire Hydrant Markings Along State Highways and Freeways, May 1988.

Article 5 Building Siting, Setbacks, and Fuel Modification

§ 1276.00 Intent

To reduce the intensity of a Wildfire, reducing the volume and density of flammable vegetation around Development through strategic fuel modification, parcel siting and Building setbacks, and the protection of Undeveloped Ridgelines shall provide for increased safety for emergency fire equipment, including evacuating civilians, and a point of attack or defense from a Wildfire.

§ 1276.01. Building and Parcel Siting and Setbacks

(a) All parcels shall provide a minimum thirty (30) foot setback for all Buildings from all property lines and/or the center of a Road, except as provided for in subsection (b).
(b) A reduction in the minimum setback shall be based upon practical reasons, which may include but are not limited to, parcel dimensions or size, topographic limitations, Development density requirements or other Development patterns that promote low-carbon emission outcomes; sensitive habitat; or other site constraints, and shall provide for an alternative method to reduce Structure-to-Structure ignition by incorporating features such as, but not limited to:
(1) non-combustible block walls or fences; or
(2) non-combustible material extending five (5) feet horizontally from the furthest extent of the Building; or
(3) hardscape landscaping; or
(4) a reduction of exposed windows on the side of the Structure with a less than thirty (30) foot setback; or
(5) the most protective requirements in the California Building Code, California Code of Regulations Title 24, Part 2, Chapter 7A, as required by the Local Jurisdiction.

§ 1276.02. Ridgelines

(a) The Local Jurisdiction shall identify Strategic Ridgelines, if any, to reduce fire risk and improve fire protection through an assessment of the following factors:

(1) Topography;

(2) Vegetation;

(3) Proximity to any existing or proposed residential, commercial, or industrial land uses;

(4) Construction where mass grading may significantly alter the topography resulting in the elimination of Ridgeline fire risks;

(5) Ability to support effective fire suppression; and

(6) Other factors, if any, deemed relevant by the Local Jurisdiction.

(b) Preservation of Undeveloped Ridgelines identified as strategically important shall be required pursuant to this section.

(c) New Buildings on Undeveloped Ridgelines identified as strategically important are prohibited, as described in subsections (c)(1), (c)(2), and (c)(3).

(1) New Residential Units are prohibited within or at the top of drainages or other topographic features common to Ridgelines that act as chimneys to funnel convective heat from Wildfires.

(2) Nothing in this subsection shall be construed to alter the extent to which utility infrastructure, including but not limited to wireless telecommunications facilities, as defined in Government Code section 65850.6, subdivision (d)(2), or Storage Group S or Utility and Miscellaneous Group U Structures, may be constructed on Undeveloped Ridgelines.

(3) Local Jurisdictions may approve Buildings on Strategic Ridgelines where Development activities such as mass grading will significantly alter the topography that results in the elimination of Ridgeline fire risks.

(d) The Local Jurisdiction may implement further specific requirements to preserve Undeveloped Ridgelines.

§ 1276.03. Fuel Breaks

(a) When Building construction meets the following criteria, the Local Jurisdiction shall determine the need and location for Fuel Breaks in consultation with the Fire Authority:

(1) the permitting or approval of three (3) or more new parcels, excluding lot line adjustments as specified in Government Code (GC) section 66412(d); or

(2) an application for a change of zoning increasing zoning intensity or density; or

(3) an application for a change in use permit increasing use intensity or density.

(b) Fuel Breaks required by the Local Jurisdiction, in consultation with the Fire Authority, shall be located, designed, and maintained in a condition that reduces the potential of damaging radiant and convective heat or ember exposure to Access routes, Buildings, or infrastructure within the Development.

(c) Fuel Breaks shall have, at a minimum, one point of entry for fire fighters and any Fire Apparatus. The specific number of entry points and entry requirements shall be determined by the Local Jurisdiction, in consultation with the Fire Authority.

(d) Fuel Breaks may be required at locations such as, but not limited to:

(1) Directly adjacent to defensible space as defined by 14 CCR § 1299.02 to reduce radiant and convective heat exposure, ember impacts, or support fire suppression tactics;

(2) Directly adjacent to Roads to manage radiant and convective heat exposure or ember impacts, increase evacuation safety, or support fire suppression tactics;

(3) Directly adjacent to a Hazardous Land Use to limit the spread of fire from such uses, reduce radiant and convective heat exposure, or support fire suppression tactics;

Appendix E: El Dorado Co. Code Section 110.16 Uniform Building Code

Specific Provisions Applicable to the Project that are found in the El Dorado County Code.

Fire Protection System Shop Drawings

Sec. 110.16.030. - International Building Code, Appendix Chapter 1 Section 106.1.1.1—Fire protection system shop drawings.

Appendix Chapter 1 Section 106.1.1.1 of the International Building Code shall have added:

Plans for buildings more than two stories in height of other than Group R, Division 3 and Group U Occupancies shall indicate how required structural and fire-resistive integrity will be maintained where a penetration will be made for electrical, mechanical, plumbing, and communication conduits, pipes, and similar systems.

The installer shall submit plans showing the proposed installation, indicating the location of the equipment and such accessories as may be required to ensure the proper and safe performance of its function.

(Code 1997, § 15.16.030; Ord. No. 4948, 10-19-2010)

Class A Roof Cover Requirements

Sec. 110.16.110. - International Building Code As Amended, Chapter 15, Section 1505, Fire classification.

Section 1505 of the International Building Code is amended to read:

1505.1.2 Roof coverings within the unincorporated area of El Dorado County:

The entire roof covering of every existing structure where more than 50 percent of the total roof area is replaced within any one-year period, the entire roof covering of every new structure and any roof covering applied in the alteration, repair or replacement of the roof of every existing structure shall be a fire-retardant roof covering that is at least Class A for all residential occupancies and Class B for all commercial, industrial and public assembly buildings.

Where, in any specific case, different sections of applicable codes specify different materials, methods of construction, or other requirements, the most restrictive provisions shall govern.

(Code 1997, § 15.16.110; Ord. No. 4948, 10-19-2010)

Appendix F: El Dorado County Fire Chiefs Association Standards

The El Dorado County Fire Chiefs Association has developed a series of fire protection standards that are designed to assist landowners, developers and builders understand and interpret the fire protection design criteria locally. All of the current fire protection standards can be accessed at the following location:

Fire Prevention Officers - El Dorado County Fire Chiefs Association (edchiefs.org).

The following fire protection standards may apply to this tentative parcel map project:

Standard B-001; Addressing of Buildings
Standard B-002; Automatic & Manual Gates on Fire Access Roadways and Driveways
Standard B-003; Emergency Apparatus Access Ways
Standard D-003; Water Supplies for Suburban and Rural Firefighting
Standard G-001; Fire Department Access & Clearances During Construction
Standard H-005; Solar Photovoltaic Standard
Standard R-001; Construction of Residential Buildings (EDHFD Specific)
Standard 7; Residential Setback for Structure Defensible Space (EDHFD Specific)

Appendix G: EDHCWD Ordinance 2022-01 (Fire Code)

EL DORADO HILLS COUNTY WATER DISTRICT

EL DORADO HILLS FIRE DEPARTMENT

ORDINANCE NO. 2022-01

BE IT ORDAINED BY THE BOARD OF DIRECTORS OF THE EL DORADO HILLS COUNTY WATER DISTRICT AS FOLLOWS:

An ordinance of the El Dorado Hills County Water District (EDHCWD) adopting the 2022 Edition of the *California Fire Code*, incorporating the 2021 Edition of the *International Fire Code*, regulating and governing the safeguarding of life and property from fire and explosion hazards arising from the storage, handling and use of hazardous substances, materials and devices, and from conditions hazardous to life or property in the occupancy of buildings and premises in the EDHCWD; providing for the issuance of permits and collection of fees therefor; Repealing Ordinance No. 2019-01 of the EDHCWD and all other ordinances and parts of the ordinances in conflict therewith.

Be it ORDAINED by the Board of Directors of the EDHCWD, also known as the El Dorado Hills Fire Department:

SECTION 1: FINDINGS OF FACTS

The EDHCWD makes certain changes (listed below) to the *California Fire Code*, 2022 Edition, pursuant to *Health & Safety Code Sections 13869.7, 17958.5, 17958.7* and *18941.5* during this code adoption process. Such changes are necessary because of local climatic, geological and/or topographical conditions. The EDHCWD has adopted, pursuant to *Section 18941.5* of the *California Health & Safety Code*, the findings of facts relative to these conditions by Resolution #2019-10 of the EDHCWD dated September 19, 2019.

SECTION 2: ADOPTION OF CODE WITH EXCLUSIONS

The EDHCWD adopts the 2022 *California Fire Code*, *Title 24*, *Part 9*, **in its entirety**, including Appendices, incorporating those sections of the *International Fire Code*, 2021 edition not adopted by the state, with the exclusions listed below:

Exclusions: 103, 309, 311.5, 311.6, 318, 403.3, 403.5, 403.8, 403.10, 403.11, 404, 406, 903.3.1.2, 904.1.1, 1103.1, 1103.3-1103.4, 1103.6, 1105, Chapter 26, D104.2 (Exception only), D106.1 (Exception only), D107.1 (Exceptions only), Appendix A, Appendix G, Appendix J, Appendix K, Appendix L, Appendix M, Appendix N, Appendix O.

Appendices not adopted can be used for reference in enforcing other sections of the 2022 *California Fire Code*.

SECTION 3: AMENDMENTS TO THE 2022 CALIFORNIA FIRE CODE

The following Sections are hereby amended or added:

Chapter 1

SECTION 101.1 "TITLE" SHALL BE AMENDED AS FOLLOWS:

Section 101.1 TITLE. These regulations shall be known as the Fire Code of *EDHCWD*, hereinafter referred to as "this code".

SECTION 105.5 "REQUIRED OPERATIONAL PERMITS" IS AMENDED AS FOLLOWS:

Section 105.5 Required operational permits. The fire code official is authorized to issue operational permits for the operations set forth in Sections 105.5.2 through 105.5.525.

SECTION 105.5.55 "AUTOMOBILE WRECKING YARDS" IS ADDED AS FOLLOWS:

Section 105.5.55 Automobile wrecking yards. *An operational permit is required for the operation of automobile wrecking yards.*

SECTION 105.6 "REQUIRED CONSTRUCTION PERMITS" IS AMENDED AS FOLLOWS:

Section 105.6 required construction permits. The fire code official is authorized to issue construction permits for work as set forth in sections 105.6.1 through 105.6.246.

SECTION 105.6.25 "AUTOMOBILE WRECKING YARDS" IS ADDED AS FOLLOWS:

Section 105.6.25 Automobile wrecking yards. *Construction permits are required for the installation of or modification to automobile wrecking yards.*

SECTION 105.6.26 "TRAFFIC CALMING DEVICES" IS ADDED AS FOLLOWS:

***105.6.26 Traffic calming devices**. Construction permits are required for the installation or modification of traffic calming devices.*

SECTION 107.5 "PERMIT, PLAN REVIEW AND INSPECTION FEES" SHALL BE ADDED AS FOLLOWS:

***Section 107.5 Permit.** A schedule of fees adopted by the district board of directors for plan review, inspections and the issuance of permits by the district may be found in the most current district fee schedule (Health & Safety Code 17951).*

SECTION 107.5.1 "COST RECOVERY FEES" SHALL BE ADDED AS FOLLOWS:

***Section 107.5.1 Cost Recovery Fees**. Fire service fees may be charged to any person, firm, corporation or business that through negligence, violation of the law, or as a result of carelessness, is responsible for the cause of the district to respond to the scene of an incident. A district board may charge a fee to cover the cost of any service which the district provides or the cost of enforcing any regulation for which the fee is charged (Health & Safety Code 13916). The fee shall not exceed the actual cost of suppressing the fire and/or responding to the scene of an incident.*

SECTION 107.7 "ADMINISTRATIVE COSTS" SHALL BE ADDED AS FOLLOWS:

***Section 107.7 Administrative Costs**. When a test or inspection is scheduled, and the contractor fails to perform to the satisfaction of the authority having jurisdiction (AHJ), the AHJ may bill the contractor for actual time spent traveling to and from the test/inspection location and the time spent at the test/inspection site as well as administrative costs.*

SECTION 111.5 "APPEAL PROCEDURES AND TIMELINES" SHALL BE ADDED AS FOLLOWS:

***Section 111.5 Appeal Procedures and Timelines**. Any person or entity who believes they may be adversely affected by an order, decision, or determination made by the fire code official through a written notice may appeal this matter within 15 calendar days of the postmark on the notice. All such appeals shall be filed in writing with the Secretary of the Governing Board for the district. A timely appeal shall stay further action by the fire code official until the matter is determined by the Appeal Board as outlined in Section 109.2, unless the issue poses an imminent fire or life safety hazard to members of the public. The fire code official shall notify the appellant by certified mail of the date and time of such hearing. The hearing shall be scheduled to take place no sooner than 20 calendar days from the date shown on the certified mail. The appellant shall have the right to appear in person or by agent at the hearing and present oral, written and/or photographic evidence to the Appeal Board.*

SECTION 112.4 "VIOLATION PENALTIES" SHALL BE AMENDED AS FOLLOWS:

Section 112.4 Violation Penalties. Persons who shall violate a provision of this code or shall fail to comply with any of the requirements thereof or who shall erect, install, alter, repair or do work in violation of the approved construction documents or directive of the fire code official,

or of a permit or certificate used under provisions of this code, shall be guilty of a *misdemeanor or infraction, at the discretion of the prosecuting attorney or agency*, punishable by a fine not more than *$100.00 for a first violation; A fine not exceeding $500.00 for a second violation of the same provision within one year; A fine not exceeding $1000.00 for each additional violation of the same provision within one year*, or by imprisonment not exceeding *180 days*, or both such fine and imprisonment. Each day that a violation continues after due notice has been served shall be deemed a separate offense. (*Health & Safety Code Sections 13145 and 17995*).

SECTION 112.4.2 "CITATIONS" SHALL BE ADDED AS FOLLOWS:

Section 112.4.2 Citations. *The Fire Chief, or his/her duly authorized representative, may issue citations for infractions or misdemeanor violations of this code pursuant to Section 13871 of the Health & Safety Code of the State of California and Chapter 5c (commencing with Section 853.6) of Title 3 of Part 2 of the Penal Code of the State of California.*

SECTION 113.4 "FAILURE TO COMPLY" SHALL BE AMENDED AS FOLLOWS:

Section 113.4 Failure to Comply. Any person who shall continue any work after having been served with a stop work order, except such work as that person is directed to perform to remove a violation or unsafe condition, shall be *punishable by a fine or imprisonment or both as described in Section 112.4 (Health & Safety Code Sections 13145 and 17995).*

Chapter 2

SECTION 202 "CAMPFIRE" SHALL BE ADDED AS FOLLOWS:

CAMPFIRE. *A fire which is used for cooking, personal warmth, lighting, or aesthetic purposes.*

SECTION 202 "DISTRICT" SHALL BE ADDED AS FOLLOWS:

DISTRICT. *The district and all other areas within the exterior boundaries thereof now or hereafter established.*

SECTION 202 "DRIVEWAY" SHALL BE ADDED AS FOLLOWS:

DRIVEWAY. *A vehicular access that serves up to two (2) parcels with no more than two (2) residential units and any number of non-commercial or industrial buildings on each parcel.*

SECTION 202 "EXECUTIVE BODY" SHALL BE ADDED AS FOLLOWS:

EXECUTIVE BODY. *The Board of Directors of the District.*

SECTION 202 "FIRE CHIEF" SHALL BE ADDED AS FOLLOWS:

FIRE CHIEF. *The Chief Executive Fire Officer of the Fire department/district serving the jurisdiction or a duly authorized representative.*

SECTION 202 "FIRE HAZARD" SHALL BE ADDED AS FOLLOWS:

***FIRE HAZARD**. Any condition, arrangement, or act which will increase, or may cause an increase of, the hazard or menace of fire to a greater than customarily recognized as normal by-persons in the public service of preventing, suppressing or extinguishing fire; or which may obstruct, delay, or hinder, or may become the cause of obstruction, delay or hinderance to the prevention, suppression, or extinguishment of fire.*

SECTION 202 "OPEN BURNING" SHALL BE AMENDED AS FOLLOWS:

OPEN BURNING. The burning of materials wherein products of combustion are emitted directly into the ambient air without passing through a stack or chimney from an enclosed chamber. Open burning does not include road flares, smudge-pots and similar devices associated with safety or occupational uses typically considered open flames. For the purpose of this definition, a chamber shall be regarded as enclosed when, during the time combustion occurs, only apertures, ducts, stacks, flues or chimneys necessary to provide combustion air and permit the escape of exhaust gas are open.

Open burning shall also include campfires, bonfires, portable outdoor fireplaces, ceremonial fires, and recreational fire as defined in the Fire Code.

Exception:

1. *UL or ASMI listed LPG or natural gas outdoor flame devices, such as gas BBQ's or gas fire pits that comply with the Fire Code.*
2. *For one-or two-family dwellings, fixed or portable outdoor flame devices that meet the following:*
   a. *Devices shall comply with the Fire Code.*
   b. *Devices shall be used per manufacturer's specifications.*
   c. *Minimum 10-foot clearance from device to all flammable material and vegetation.*
   d. *No burning shall be conducted during high or extreme fire weather conditions (e.g., National Weather Service Red Flag Warnings).*
3. *Campfires on private lands. Where required by the fire code official, a permit shall be issued by the fire code official.*
4. *Ceremonial and/or religious burning with the following safety measures:*
   a. *Maximum 4-foot x 4-foot burn area.*
   b. *Minimum 10-foot clearance from edge of burn area to all flammable material and vegetation.*
   c. *An approved water supply is located within 500-feet of the burn area.*
   d. *The burn area is located no less than 30-feet from adjoining property lines.*
   e. *An adult is present with a shovel until the fire is extinguished.*
   f. *No burning shall be conducted during high or extreme fire weather conditions (e.g., National Weather Service Red Flag Warnings).*

SECTION 202 "TRAINED CROWD MANAGER" SHALL BE ADDED AS FOLLOWS:

TRAINED CROWD MANAGER. *Standby personnel, usually a security guard or usher personnel, who are trained in the proper procedure to exit people from a tent or other place of public assemblage in an orderly and calm fashion in the event of an emergency*

Chapter 3

SECTION 302.1 "DEFINITIONS" SHALL BE AMENDED AS FOLLOWS:
3D PRINTER.
ADDITIVE MANUFACTURING.
BONFIRE.
CAMPFIRE.
HI-BOY.
HIGH-VOLTAGE TRANSMISSION LINE.
OPEN BURNING.
PORTABLE OUTDOOR FIREPLACE.
POWERED INDUSTRIAL TRUCK.
RECREATIONAL FIRE.
SKY LATTERN.

SECTION 307.4.4 "OPEN BURNING RESTRICTIONS" SHALL BE ADDED AS FOLLOWS:

Section 307.4.4 Open Burning Restrictions*. Open burning on all lands within the jurisdiction of the El Dorado Hills Fire Department (EDHFD), including the Local Response Area (LRA), is prohibited when the California Department of Forestry and Fire Protection (Cal Fire) issues a burn suspension in the State Responsibility Area (SRA). This prohibition shall be made effective 24-hours following its commencement in the SRA.*

Open burning is also prohibited on all lands within the jurisdiction of EDHFD at any time the fire code official determines that atmospheric conditions or other local circumstances make such fires hazardous, including factors such as high winds, low fuel moisture, fire weather, the issuance of red flag warnings, severe threat of wildland fire, or present risk of destruction by wildfire to life, wildlife, property, or natural resources.

Chapter 4

SECTION 401.2.1 "PRE-FIRE PLANS" IS ADDED AS FOLLOWS:

Section 401.2.1 Pre-fire plans*. Where required by the fire code official, a pre-fire plan shall be provided and approved by the fire code official for all new commercial structures.*

Chapter 5

SECTION 503.2.1 "DIMENSIONS" SHALL BE AMENDED AS FOLLOWS:

Section 503.2.1 Dimensions. Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), exclusive of shoulders, *as measured from face of curb to face of curb*, except for approved security gates in accordance with Section 503.6, and an

unobstructed vertical clearance of not less than *15 feet. Driveways shall have an unobstructed width of not less than 12 feet wide.*

SECTION 503.2.5 "DEAD ENDS" SHALL BE AMENDED AS FOLLOWS:

Section 503.2.5 Dead Ends. Dead-end fire apparatus access roads *and driveways* in excess of 150 feet (45,720 mm) in length shall be provided with an approved area for turning around fire apparatus.

SECTION 503.2.6 "BRIDGES AND ELEVATED SURFACES" SHALL BE AMENDED AS FOLLOWS:

Section 503.2.6 Bridges and Elevated Surfaces. Where a bridge or an elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with AASHTO HB-17, *the current El Dorado County Transportation Division Bridge Standard or Appendix D of the current California Fire Code, whichever is more restrictive.* Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. Vehicle load limits shall be posted at both entrances to bridges when required by the fire code official. Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces that are not designed for such use, approved barriers, approved signs or both shall be installed and maintained where required by the fire code official.

SECTION 503.3.1 "NO PARKING IN FIRE LANES" SHALL BE ADDED AS FOLLOWS:

***Section 503.3.1 No Parking In Fire Lanes**. No person shall stop, park, or leave standing any vehicle, whether attended or unattended, except when necessary to avoid conflict with other traffic or in compliance with the directions of the Fire Chief, or his/her duly authorized representative, Peace Officer or official traffic control device along the edge of any highway, at any curb, or in any location in a publicly or privately owned or operated off-street parking facility, designated as a fire lane by the district with jurisdiction over the area in which the place is located. The designation shall be indicated (1) by a sign posted immediately adjacent to, and visible from, the designated place clearly stating in letters not less than one inch in height that the place is a fire lane, (2) by outlining or painting the place in red and, in contrasting color, marking the place with the words "FIRE LANE", which are clearly visible from a vehicle, or (3) by a red curb or red paint on the edge of the roadway upon which is clearly marked the words "FIRE LANE".*

SECTION 503.3.2 "NO PARKING IN FRONT OF HYDRANTS" SHALL BE ADDED AS FOLLOWS:

***Section 503.3.2 No Parking in Front of Hydrants**. No person shall stop, park, or leave standing any vehicle within 15 feet of a fire hydrant except as follows: (a) If the vehicle is attended by a licensed driver who is seated in the front seat and who can immediately move such vehicle in case of necessity, (b) If the vehicle is owned or operated by a fire department and is clearly marked as a fire department vehicle.*

SECTION 503.3.3 "FIRE LANES BASED ON ROAD WIDTH" SHALL BE ADDED AS FOLLOWS:

Section 503.3.3 Fire Lanes Based on Road Width. *Fire lanes shall be based on road width as required in Appendix D as amended by the District.*

SECTION 503.6 "SECURITY GATES" IS AMENDED AS FOLLOWS:

Section 503.6 Security Gates. The installation of security gates across a fire apparatus access road shall be approved by the fire code official *and shall comply with the District gate standard.* Where security gates are installed, they shall have an approved means of emergency operation. The security gates and the emergency operation shall be maintained operational at all times. Electric gate operators, where provided, shall be listed in accordance with UL 325. Gates intended for automatic operation shall be designed, constructed, and installed to comply with the requirements of ASTM F2200.

SECTION 505.1 "ADDRESS IDENTIFICATION" SHALL BE AMENDED AS FOLLOWS:

Section 505.1 Address Identification. *Addresses for new and existing buildings shall comply with the District address standard as approved by the fire code official.* The address identification shall be legible and placed in a position that is visible from the street or road fronting the property. Address identification characters shall contrast with their background. Address numbers shall be Arabic numbers or alphabetical letters. Numbers shall not be spelled out. Each character shall be not less than 4 inches (102 mm) high with a minimum stroke width of $^1/_2$ inch (12.7 mm). Where required by the fire code official, address identification shall be provided in additional approved locations to facilitate emergency response. access is by means of a private road and the building cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the structure. Address identification shall be maintained.

SECTION 507.5.1 "WHERE REQUIRED" SHALL BE AMENDED AS FOLLOWS:

Section 507.5.1 Where Required. Where a portion of the facility or building hereafter constructed or moved into or within the jurisdiction is more than 150 feet from a hydrant on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains capable of supplying the required fire flow shall be provided where required by the fire code official.

Exceptions:

1. For Group R-3 and Group U occupancies, the distance requirement shall be 600 feet (183 m).

SECTION 509.3 "FIRE CONTROL ROOM" SHALL BE ADDED AS FOLLOWS:

Section 509.3 Fire Control Room. *Fire sprinkler risers, fire alarm control panels, solar photovoltaic power system rapid shutoff switches, and other fire detection, suppression or similar control elements shall be located inside a single fire control room for the building. The fire control room shall have minimum dimensions of five feet by seven feet in size with a total usable area of not less than 35 square feet. The room shall be located within the building on an outside wall at a location approved by the Fire Code Official and shall be accessible from the exterior. An exterior access door with a clear width of not less than 32 inches and height of not less than 80 inches shall be provided for access into the room. A durable sign shall be affixed to the exterior of the door with the words "FIRE CONTROL ROOM" in letters not less*

than 4 inches in height. A key box complying with Section 506 shall be installed on the exterior side of the fire control room door opening.

The room must be capable of maintaining a minimum temperature of 40 degrees Fahrenheit. A clearance of 12 inches shall be provided from the fire sprinkler risers to any adjacent walls. This room can be a shared with other building utilities or fire protection equipment that is not incompatible. An approved cabinet or container shall be provided to store record plans of the fire sprinkler system and other fire protection equipment. This room shall not be used for any other storage.

> ***Exception:*** *One-and two-family dwellings, manufactured homes or similar uses defined as either a Group R-3, R3.1, or R-4 occupancy.*

SECTION 510.4.2.3 "STANDBY POWER" SHALL BE AMENDED AS FOLLOWS:

Section 510.4.2.3 Standby power. In-building, two-way emergency responder communication radio coverage systems shall be provided with dedicated standby batteries or provided with 2-hour standby batteries and connected to the facility generator power system in accordance with Section 1203. The standby power supply shall be capable of operating the in-building, two-way emergency responder communication coverage system at 100-percent system capacity for a duration of not less than 72 hours.

Chapter 9

SECTION 903.2 "WHERE REQUIRED" SHALL BE AMENDED AS FOLLOWS:

Section 903.2 Where Required. Approved automatic sprinkler systems *in new buildings and structures when constructed or relocated within the jurisdiction shall be provided in the locations* described in Sections 903.2.1 through 903.2.12 and Sections 903.2.14 through 903.2.23.

> ***Exception:*** *Agricultural buildings not under a special use permit used for commercial purposes.*

SECTION 903.2.1.1 "GROUP A-1" SHALL BE AMENDED AS FOLLOWS:

Section 903.2.1.1 Group A. An automatic sprinkler system shall be provided throughout stories containing Group A-1 occupancies and throughout all stories from the Group A-1 occupancy to and including the levels of exit discharge serving that occupancy where one of the following conditions exists:

1. The fire area exceeds *3,600* square feet.
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.
4. The fire area contains a multi-theater complex

SECTION 903.2.1.2 "GROUP A-2" SHALL BE AMENDED AS FOLLOWS:

Section 903.2.1.2 Group A-2. An automatic sprinkler system shall be provided throughout stories containing Group A-2 occupancies and throughout all stories from the Group A-2

occupancy to and including the levels of exit discharge serving that occupancy where one of the following conditions exists:

1. The fire area exceeds *3,600* square feet;
2. The fire area has an occupant load of 100 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.
4. The structure exceeds *3,600* square feet, contains more than one fire area containing a Group A-2 occupancy, and is separated into two or more buildings by fire walls of less than 4-hour fire-resistance rating without openings.

SECTION 903.2.1.3 "GROUP A-3" SHALL BE AMENDED AS FOLLOWS:

Section 903.2.1.3 Group A-3. An automatic sprinkler system shall be provided throughout stories containing Group A-3 occupancies and throughout all stories from the Group A-3 occupancy to and including the levels of exit discharge serving that occupancy where one of the following conditions exists:

1. The fire area exceeds *3,600* square feet.
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.
4. The structure exceeds *3,600* square feet, contains more than one fire area containing exhibition and display rooms, and is separated into two or more buildings by fire walls of less than 4-hour fire-resistance rating without openings.

SECTION 903.2.1.4 "GROUP A-4" SHALL BE AMENDED AS FOLLOWS:

Section 903.2.1.4 Group A-4. An automatic sprinkler system shall be provided throughout stories containing Group A-4 occupancies and throughout all stories from the Group A-4 occupancy to and including the levels of exit discharge serving that occupancy where one of the following conditions exists:

1. The fire area exceeds *3,600* square feet.
2. The fire area has an occupant load of 300 or more.
3. The fire area is located on a floor other than a level of exit discharge serving such occupancies.

SECTION 903.2.3 "GROUP E" SHALL BE AMENDED AS FOLLOWS:

Section 903.2.3 Group E. An automatic sprinkler system shall be provided for Group E occupancies as follows:

1. Throughout all Group E fire areas greater than *3,600* square feet in area.
2. The Group E fire area is located on a floor other than a level of exit discharge serving such occupancies.

Exception: In buildings where every classroom has not fewer than one exterior exit door at ground level, an automatic sprinkler system is not required in any area below the lowest level of exit discharge serving that area.

3. The Group E fire area has an occupant load of 300 or more.
4. In rooms or areas with special hazards such as laboratories, vocational shops and other such areas where hazardous materials in quantities not exceeding the maximum allowable quantity are used or stored.
5. Throughout any Group E structure greater than *3,600* square feet in area, which contains more than one fire area, and which is separated into two or more buildings by fire walls of less than 4-hour fire resistance rating without openings.
6. For public school state funded construction projects see Section 903.2.19.
7. For public school campuses, Kindergarten through 12th grade, see Section 903.2.20

SECTION 903.2.4 "GROUP F-1" SHALL BE AMENDED AS FOLLOWS:

Section 903.2.4 Group F-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group F-1 occupancy where one of the following conditions exists:

1. A Group F-1 fire area exceeds *3,600* square feet.
2. A Group F-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group F-1 fire areas on all floors, including any mezzanines, exceeds *3,600* square feet.

SECTION 903.2.7 "GROUP M" SHALL BE AMENDED AS FOLLOWS:

Section 903.2.7 Group M. An automatic sprinkler system shall be provided throughout buildings containing a Group M occupancy where one of the following conditions exists:

1. A Group M fire area exceeds *3,600* square feet.
2. A Group M fire area is located more than three stories above grade plane.
3. The combined area of all Group M fire areas on all floors, including any mezzanines, exceeds *3,600* square feet.
5. The structure exceeds *3,600* square feet, contains more than one fire area containing a Group M occupancy, and is separated into two or more buildings by fire walls of less than 4-hour fire resistance rating without openings.

SECTION 903.2.7.2 "GROUP M UPHOLSTERED FURNITURE OR MATTRESSES" SHALL BE AMENDED AS FOLLOWS:

Section 903.2.7.2 Group M Upholstered Furniture or Mattresses. An automatic sprinkler system shall be provided throughout a Group M fire area where the area used for the display and sale of upholstered furniture or mattresses exceeds *3,600* square feet.

SECTION 903.2.8.5 "MANUFACTURED HOMES" SHALL BE ADDED AS FOLLOWS:

***Section 903.2.8.5 Manufactured Homes**. An automatic fire sprinkler system shall be required in all new manufactured homes and multi-family manufactured homes intended for use as a one-and two-family dwelling. The design and installation of such systems shall be in accordance with California Code of Regulations, Title 25, §4300.*

Exceptions:

1. *Manufactured homes located within an existing mobile home park complying with California Health and Safety Code, Division 13, Part 2.1 or 2.3.*
2. *Manufactured homes that do not exceed 1,200 square feet in size and serve as an accessory dwelling unit, as defined in Government Code Section 658502; when the existing primary residence on the property is not required to comply with California Residential Code Section R313.2.*
3. *Manufactured homes that do not exceed 320 square feet in size.*

SECTION 903.2.9 "GROUP S-1" SHALL BE AMENDED AS FOLLOWS:

Section 903.2.9 Group S-1. An automatic sprinkler system shall be provided throughout all buildings containing a Group S-1 occupancy where one of the following conditions exists:

1. A Group S-1 fire area exceeds *3,600* square feet.
2. A Group S-1 fire area is located more than three stories above grade plane.
3. The combined area of all Group S-1 fire areas on all floors, including any mezzanines, exceeds *3,600* square feet.
4. A Group S-1 fire area used for the storage of commercial motor vehicles where the fire area exceeds *3,600* square feet.

SECTION 903.2.10 "GROUP S-2" SHALL BE AMENDED AS FOLLOWS:

Section 903.2.10 Group S-2. An automatic sprinkler system shall be provided throughout buildings classified as parking garages where any of the following conditions exist:

1. Where the fire area of the enclosed parking garage, in accordance with Section 406.6 of the California Building Code, exceeds *3,600* square feet.
2. Where the enclosed parking garage, in accordance with Section 406.6 of the California Building Code, is located beneath other groups.

   Exception: Enclosed parking garages located beneath Group R-3 occupancies.
3. Where the fire area of the open parking garage, in accordance with Section 406.5 of the California Building Code, exceeds *3,600* square feet.

SECTION 903.2.10.1 "COMMERCIAL PARKING GARAGES" SHALL BE AMENDED AS FOLLOWS:

Section 903.2.10.1 Commercial Parking Garages. An automatic sprinkler system shall be provided throughout buildings used for storage of commercial motor vehicles where the fire area exceeds *3,600* square feet.

SECTION 903.2.22 "GROUP B" SHALL BE ADDED AS FOLLOWS:

***Section 903.2.22 Group B**. An automatic sprinkler system shall be provided throughout all buildings containing Group B occupancies where the fire area exceeds 3,600 square feet.*

SECTION 903.2.23 "GROUP F-2" SHALL BE ADDED AS FOLLOWS:

***Section 903.2.23 Group F-2**. An automatic sprinkler system shall be provided throughout all buildings containing Group F-2 occupancies where the fire area exceeds 3,600 square feet.*

SECTION 903.6 "WHERE REQUIRED IN EXISTING BUILDINGS AND STRUCTURES" IS AMENDED AS FOLLOWS:

Section 903.6 Where Required In Existing Buildings and Structures. An automatic sprinkler system shall be provided in existing buildings and structures where required in Chapter 11 *and as follows:*

1. When there is a change in occupancy classification that results in an increased life safety or fire risk, as determined by the fire code official, and the structure exceeds 3,600 square feet, an automatic fire sprinkler system shall be installed throughout the building.
2. *In existing buildings 3,600 square feet or greater, other than one and two-family dwelling units, and agricultural buildings not under special use permit for commercial purposes, where the floor area of the building or structure is increased, such building or structure shall be made to conform to Section 903.2.*

   ***Exception**: When the building increase is less than 500 square feet.*
3. *In existing buildings 3,600 square feet or less, other than one-and two-family dwelling units, and agricultural buildings not under special use permit for commercial purposes, where the floor area of the building or structure is increased to a total square footage over 3,600 square feet, such building or structure shall be made to conform to Section 903.2.*

   ***Exception**: When the building increase is less than 500 square feet.*

SECTION 907.2. "WHERE REQUIRED – NEW BUILDINGS AND STRUCTURES" SHALL BE AMENDED AS FOLLOWS:

Section 907.2. Where Required – New Buildings and Structures. An approved fire alarm system installed in accordance with the provisions of this code and NFPA 72 shall be provided in new buildings and structures in accordance with Sections 907.2.1 through 907.2.~~29~~30 and provide occupant notification in accordance with Section 907.5, unless other requirements are provided by another section of this code.

Not fewer than one manual fire alarm box shall be provided in an approved location to initiate a fire alarm signal for fire alarm systems employing automatic fire detectors or waterflow detection devices. Where other sections of this code allow elimination of fire alarm boxes due to sprinklers or automatic fire alarm systems, a single fire alarm box shall be installed at a location approved by the enforcing agency.

Exceptions:

1. The manual fire alarm box is not required for fire alarm control units systems dedicated to elevator recall control, supervisory service and fire sprinkler monitoring.
2. The manual fire alarm box is not required for Group R-2 occupancies unless required by the fire code official to provide a means for fire watch personnel to initiate an alarm during a sprinkler system, impairment event. Where provided, the manual fire alarm box shall not be located in an area that is open to the public.
3. The manual fire alarm box is not required to be installed when approved by the fire code official.
4. *A fire alarm system is not required in one and two-family dwellings, agricultural buildings, and other occupancies classified as Group U not under special use permit and/or not used for commercial purposes (e.g. retail sales, food service, and/or special events).*
5. *Buildings with a floor area less than 500 square feet may be exempt, as determined by the fire code official based on building construction material and features, location, occupancy type, and distance to exposures.*

SECTION 907.2.1.4 "GROUP A UNDER 3,600 SQUARE FEET" SHALL BE ADDED AS FOLLOWS:

Section 907.2.1.4 Group A Under 3,600 Square Feet. *An approved fire alarm system shall be installed in all group A buildings with a floor area less than 3,600 square feet.*

SECTION 907.2.2.3 "GROUP B UNDER 3,600 SQUARE FEET" SHALL BE ADDED AS FOLLOWS:

Section 907.2.2.3 Group B Under 3,600 Square Feet. *An approved fire alarm system shall be installed in all group B buildings with a floor area less than 3,600 square feet.*

SECTION 907.2.3.11 "GROUP E UNDER 3,600 SQUARE FEET" SHALL BE ADDED AS FOLLOWS:

Section 907.2.3.11 Group E Under 3,600 Square Feet. *An approved fire alarm system shall be installed in all group E buildings with a floor area less than 3,600 square feet.*

SECTION 907.2.4.1 "GROUP F UNDER 3,600 SQUARE FEET" SHALL BE ADDED AS FOLLOWS:

Section 907.2.4.1 Group F Under 3,600 Square Feet. *An approved fire alarm system shall be installed in all group F buildings with a floor area less than 3,600 square feet.*

SECTION 907.2.5.2 "GROUP H UNDER 3,600 SQUARE FEET" SHALL BE ADDED AS FOLLOWS:

Section 907.2.5.2 Group H Under 3,600 Square Feet. *An approved fire alarm system shall be installed in all group H buildings with a floor area less than 3,600 square feet.*

SECTION 907.2.6.6 "GROUP I UNDER 3,600 SQUARE FEET" SHALL BE ADDED AS FOLLOWS:

Section 907.2.6.6 Group I Under 3,600 Square Feet. *An approved fire alarm system shall be installed in all group I buildings with a floor area less than 3,600 square feet.*

SECTION 907.2.7.2 "GROUP M UNDER 3,600 SQUARE FEET" SHALL BE ADDED AS FOLLOWS:

Section 907.2.7.2 Group M Under 3,600 Square Feet. *An approved fire alarm system shall be installed in all group M buildings with a floor area less than 3,600 square feet.*

SECTION 907.2.8.4 "GROUP R-1 UNDER 3,600 SQUARE FEET" SHALL BE ADDED AS FOLLOWS:

Section 907.2.8.4 Group R-1 Under 3,600 Square Feet. *An approved fire alarm system shall be installed in all group R-1 buildings with a floor area less than 3,600 square* feet.

SECTION 907.2.9.4 "GROUP R-2, R-2.1, R-2.2 UNDER 3,600 SQUARE FEET" SHALL BE ADDED AS FOLLOWS:

Section 907.2.9.4 Group R-2, R-2.1, R-2.2 Under 3,600 Square Feet. *An approved fire alarm system shall be installed in all group R-2, R-2.1, R-2.2 buildings with a floor area less than 3,600 square feet.*

SECTION 907.2.10.1 "GROUP S UNDER 3,600 SQUARE FEET" SHALL BE ADDED AS FOLLOWS:

Section 907.2.10.1 Group S Under 3,600 Square Feet. *An approved fire alarm system shall be installed in all group S buildings with a floor area less than 3,600 square feet.*

907.2.30 "TYPE I HOOD INSTALLATIONS" SHALL BE ADDED AS FOLLOWS:

907.2.30 "Type I Hood Installations*. The requirement of installation, or replacement, of a Type I Hood System shall require a fire alarm/sprinkler monitoring system to be installed, or for the hood system to be connected to an existing fire alarm/sprinkler monitoring system for that building.*

907.6.5 "MONITORING" SHALL BE AMENDED AS FOLLOWS:

907.6.5 Monitoring. Fire alarm systems required by this chapter or by the California Building Code shall be monitored by an *approved, UL certified, Type A Full Service central, proprietary or remote station service, which gives audible and visual signals at a constantly attended location. All sprinklered buildings shall be monitored.*

Exceptions:

1. *One- and two-family dwellings (R-3 Occupancies and other occupancies classified as "U").*

2. *Agricultural buildings not under special use permit and/or not used for commercial purposes (e.g., retails sales, food service, and/or special events).*

SECTION 907.6.2.1 "SECONDARY POWER SUPPLY" SHALL BE ADDED AS FOLLOWS:

SECTION 907.6.2.1 SECONDARY POWER SUPPLY. *Where required by the fire code official, in accordance with NFPA 72, the secondary power supply providing a minimum 24-hour power capacity under quiescent load (system operating in a non-alarm condition) shall be amended to a minimum 72-hour power capacity.*

Exception: *The existence of an emergency back-up power supply that meets or exceed the requirements of California Fire Code Chapter 12.*

SECTION 907.9 "WHERE REQURIED IN EXISTING BUILDINGS" SHALL BE AMENDED AS FOLLOWS:

SECTION 907.9 Where Required. An approved fire alarm system shall be provided in existing buildings and structures where required in Chapter 11 and *in existing buildings with a floor area less than 3,600 square feet without an approved automatic sprinkler system, other than one- or two-family dwelling units, agricultural building not under special use permit for commercial purposes where a fire alarm detection system does not exist and the floor area of the building or structure is increased*

Exception: *When the building increase is less than 500 square feet.*

Chapter 12

SECTION 1203.1.3 "INSTALLATION" SHALL BE AMENDED AS FOLLOWS:

Section 1203.1.3 Installation. Emergency power systems and standby power systems shall be installed in accordance with the California Building Code, the California Electrical Code, NFPA 110 and NFPA 111. *All buildings, other than one- and two-family dwelling units, and agricultural buildings not used for commercial purposes, with standby power, shall have a shunt trip device that disconnects all power sources to the building, approved by the fire code official. Existing installations shall be maintained in accordance with the original approval.*

Chapter 33

SECTION 3311.3 "PREMISE IDENTIFICATION" SHALL BE ADDED AS FOLLOWS:

Section 3311.3 Premise Identification. *Prior to and during construction, an approved address sign shall be provided at each fire and emergency vehicle access road entry into the project.*

SECTION 3313.1 "WHEN REQUIRED" SHALL BE AMENDED AS FOLLOWS:

Section 3313.1 When Required. An approved water supply for fire protection, either temporary or permanent, shall be *installed and maintained in continuous operation* as soon as combustible building materials arrive on site, the commencement of vertical combustible

construction and on installation of a standpipe system in buildings under construction, in accordance with Sections 3313.2 through 3313.5.

Exception: The fire code official is authorized to reduce the fire-flow requirements for isolated buildings or a group of buildings in rural areas or small communities where the development of full fire-flow requirements is impractical.

Chapter 50

SECTION 5001.7 "LIABILITY FOR DAMAGES" SHALL BE ADDED AS FOLLOWS:

Section 5001.7 Liability for Damages. *Any damages or cost resulting from the negligence, violation of the law, careless handling, spill or discharge of any hazardous materials shall constitute debt against any such person, firm or corporation causing such spill or discharge. This debt is collectible by the Fire Chief, or his/her duly authorized representative, in the same manner as in the case of an obligation under contract, expressed or implied.*

Chapter 56

SECTION 5601.2 "PERMIT REQUIRED" SHALL BE AMENDED AS FOLLOWS:

Section 5601.2 Permit Required. Permits shall be required as set forth in Section 105.5 and regulated in accordance with this section. *Where fireworks permits are required, they shall be issued by the Fire Chief, or his/her duly authorized representative, and the El Dorado County Board of Supervisors.*

Chapter 57

SECTION 5704.2.9.6.1 "LOCATIONS WHERE ABOVE-GROUND TANKS ARE PROHIBITED" SHALL BE AMENDED AS FOLLOWS:

SECTION 5704.2.9.6.1 Locations Where Above-Ground Tanks are Prohibited. Storage of Class I and Class II flammable liquids in above-ground tanks outside of buildings is prohibited within the limits established by law as the limits of districts in which such storage is prohibited. *Storage of Class I and Class II flammable liquids in above-ground tanks outside of buildings is prohibited unless approved by the fire code official.*

SECTION 5706.2.4.4 "LOCATIONS WHERE ABOVE-GROUND TANKS ARE PROHIBITED" SHALL BE AMENDED AS FOLLOWS:

SECTION 5706.2.4.4 Locations Where Above-Ground Tanks are Prohibited. The storage of Class I and Class II liquids in above-ground tanks is prohibited within the limits established by law as the limits of districts in which such storage is prohibited. *Storage of Class I and Class II liquids in above-ground tanks is prohibited unless approved by the fire code official.*

Chapter 58

SECTION 5806.2 "LIMITATIONS" SHALL BE AMENDED AS FOLLOWS:

SECTION 5806.2 Limitations. Storage of flammable cryogenic fluids in stationary containers outside of buildings is prohibited within the limits established by law as the limits of districts in which such storage is prohibited. *Storage of flammable cryogenic fluids in stationary containers outside of buildings is prohibited unless approved by the fire code official.*

Chapter 61

SECTION 6104.2 "MAXIMUM CAPACITY WITHIN ESTABLISHED LIMITS" SHALL BE AMENDED AS FOLLOWS:

SECTION 6104.2 Maximum Capacity within Established Limits. Within the limits established by law restricting the storage of liquefied petroleum gas for the protection of heavily populated or congested areas, the aggregate capacity of any one installation shall not exceed a water capacity of 2,000 gallons. *The storage of liquefied petroleum gas in excess of an aggregate of 2,000-gallon water capacity when located at least one-half (1/2) mile from property zoned or designated for residential use and at least one-half (1/2) mile from existing residential development with a density greater than one (1) dwelling unit per acre and at least one-half (1/2) mile from any hotel or motel is allowed when approved by the fire code official, and a special/conditional use permit is issued by the County of El Dorado.*

Dispensing within established limits. Within the limits established by law restricting the dispensing of liquefied petroleum gas for the protection of heavily populated or congested areas, the aggregate capacity of any one installation shall not exceed a water capacity of 2,000 gallons. The dispensing of liquefied petroleum gas in excess of an aggregate of 2,000-gallon water capacity when located at least one-half (1/2) mile from property zoned or designated for residential use and at least one-half (1/2) mile from any hotel or motel is allowed when approved by the fire code official and a special/conditional use permit is issued by the County of El Dorado.

Chapter 80

SECTION 80, NFPA 1-22, CHAPTER 22 "AUTOMOTIVE WRECKING YARDS" IS ADOPTED, AMENDED SECTIONS AS FOLLOWS:

Revise Section 22.3 as follows:

22.3 Fire department access roads shall be in accordance with the California Fire Code, Section 503 and Appendix D.

Add new Section 22.10 as follows:

22.10 Stored vehicles, boats, recreational vehicles, parts, and equipment shall not be stored within 30 feet of adjacent property lines.

SECTION 80, NFPA, 13D-22 – "STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS IN ONE-AND TWO FAMILY DWELLINGS AND MANUFACTURED HOMES" IS AMENDED AS FOLLOWS: 903.3.1.3, 903.3.5.1.1

NFPA 13D, Amended Sections as follows:

Add new Section 4.6 as follows:

4.6 *Residential fire sprinkler systems installed in all new one-and two-family dwellings shall utilize a "Passive Purge" system design unless otherwise approved by the fire code official.*

> ***Exception:*** *Manufactured home installed, tested and approved by the California Department of Housing and Community Development.*

Revise Section 5.1.1.2 as follows:

5.1.1.2 *A supply of at least one of each type and temperature sprinkler used within the premises shall be maintained on the property at an approved location. Spare sprinklers shall be kept in a mounted and accessible cabinet.*

Revise Section 7.6 as follows:

7.6 *A local audio/visual device activated upon water flow shall be provided on all fire sprinkler systems in homes at an approved location on the exterior of the dwelling.*

Revise Section 11.2.1.1 as follows:

11.2.1.1 Where a fire department pumper connection is not provided, the system shall be hydrostatically tested at *a minimum pressure of 150 pounds per square inch gauge for no less than a 30-minute duration without evidence of leakage. Such test shall be witnessed by the fire code official.*

Appendix B – Fire Flow Requirements for Buildings

TABLE B105.1(1) "REQUIRED FIRE FLOW FOR ONE- AND TWO-FAMILY DWELLINGS, GROUP R-3, AND R-4 BUILDINGS AND TOWNHOUSES" SHALL BE AMENDED AS FOLLOWS:

TABLE B105.1(1) REQUIRED FIRE FLOW FOR ONE- AND TWO-FAMILY DWELLINGS, GROUP R-3, AND R-4 BUILDINGS AND TOWNHOUSES

FIRE-FLOW CALCULATION AREA (square feet)	AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE-FLOW (gallons per minute)	FLOW DURATION (hours)
0 – 3,600	No automatic sprinkler system	1,000	1

3,601 and greater	No automatic sprinkler system	Value in Table B105.1(2)	Duration in Table B105.1(2) at the required fire-flow rate
MAJOR SUBDIVISIONS (5 PARCELS OR GREATER)			
0 – 3,600	Section 903.3.1.3 of the CA Fire Code or Section 313.3 of the CA Residential Code	*1,000*	*1*
3,601 and greater	Section 903.3.1.3 of the CA Fire Code or Section 313.3 of the CA Residential Code	1/2 value of Table B105.1(2) *(min. 1000 GPM)*	2
OTHER RESIDENTIAL DEVELOPMENT			
0 – 3,600	Section 903.3.1.3 of the CA Fire Code or Section 313.3 of the CA Residential Code	500	*1*
3,601 and greater	Section 903.3.1.3 of the CA Fire Code or Section 313.3 of the CA Residential Code	1/2 value of Table B105.1(2) *(min. 750 GPM)*	1

TABLE B105.2 "REQUIRED FIRE FLOW FOR BUILDINGS OTHER THAN ONE- AND TWO-FAMILY DWELLINGS, GROUP R-3, AND R-4 BUILDINGS AND TOWNHOUSES" SHALL BE AMENDED AS FOLLOWS:

TABLE B105.2 REQUIRED FIRE FLOW FOR BUILDINGS OTHER THAN ONE- AND TWO-FAMILY DWELLINGS, GROUP R-3, AND R-4 BUILDINGS AND TOWNHOUSES

AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE-FLOW (gallons per minute)	FLOW DURATION (hours)
No automatic sprinkler system	Value in Table B105.1(2)	Duration in Table B105.1(2)
Section 903.3.1.1 of the CA Fire Code	25% of the value in Table B105.1(2) [b]	Duration in Table B105.1(2) at the reduced flow rate

b. The reduced fire flow shall not be less than 1,500 gpm

DS RPJ DS CF DS JH

Appendix D – Fire Apparatus Access Roads

SECTION D103.1 "ACCESS ROAD WIDTH WITH A HYDRANT" SHALL BE AMENDED AS FOLLOWS:

Section D103.1 Access Road Width with a Hydrant. Where a fire hydrant is located on a fire apparatus access road, the minimum road width shall be 26 feet (7925 mm), exclusive of shoulders (see Figure D103.1).

***Exception**: Driveways*

SECTION D103.2 "GRADE" SHALL BE AMENDED AS FOLLOWS:

SECTION D103.2 Grade. Fire apparatus access roads *and driveways* shall not exceed *15.9% in grade unless approved by the fire code official or by the El Dorado County amended California Public Resource Code Title 14 / Design and Improvement Standards Manual.*

SECTION D103.3 "TURNING RADIUS" SHALL BE AMENDED AS FOLLOWS:

SECTION D103.3 Turning Radius. The minimum turning radius shall be determined by the fire code official; *and shall not include curb and gutter.*

SECTION D103.5 "FIRE APPARATUS ACCESS ROAD GATES" SHALL BE AMENDED AS FOLLOWS:

SECTION D103.5 Fire Apparatus Access Road Gates. Gates securing the fire apparatus access roads shall comply with all of the following criteria:

1. Where a single gate is provided, the gate width shall be not less than 20 feet (6096 mm). Where a fire apparatus road consists of a divided roadway, the gate width shall be not less than 15 feet (3658 mm).
2. Gates shall be of the horizontal swing, horizontal slide, vertical lift or vertical pivot type.
3. Construction of gates shall be of materials that allow manual operation by one person.
4. Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.
5. Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be approved by the fire code official.
6. Methods of locking shall be submitted for approval by the fire code official.
7. Electric gate operators, where provided, shall be listed in accordance with UL 325.
8. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F2200.

SECTION D103.6.1 "ROADS 20 TO 29 FEET IN WIDTH" SHALL BE AMENDED AS FOLLOWS:

SECTION D103.6.1 Roads 20 to *29* feet in width. Fire lane signs as specified in Section D103.6 shall be posted on both side of fire apparatus access roads that are 20 to *29* feet wide (6096 to *8534.4* mm).

SECTION D103.6.2 "ROADS MORE THAN *29* FEET IN WIDTH" SHALL BE AMENDED AS FOLLOWS:

SECTION D103.6.2 Roads more than *29* feet in Width. Fire lane signs as specified in Section D103.6 shall be posted on one side of fire apparatus access roads more than *29* feet wide (8534.4 mm) and less than *36* feet wide (*10972.8* mm).

SECTION D104.4 "CIRCUMFERENTIAL FIRE APPARATUS ACCESS ROADS" SHALL BE ADDED AS FOLLOWS:

***SECTION D104.4 Circumferential Fire Apparatus Access Roads**. When required by the fire code official, a fire apparatus access road shall be constructed to encompass the entirety of a structure and shall provide a continuous means of emergency vehicle access.*

SECTION 4: CONFLICT

That Ordinance No. 2019-01 of the EDHCWD, and all other ordinances or parts of ordinances herewith are hereby repealed.

SECTION 5: SEVERABILITY

If any Ordinance, article, subsection or subdivision thereof, provision, sentence, clause or phrase of this code, or any application thereof, is for any reason held to be invalid by a court of competent jurisdiction, such decision shall not affect the remaining provisions of this code, which can be given effect without the invalid portions and, therefore, such invalid portions are declared to be severable. The EDHCWD hereby declares that it would have enacted this Ordinance and each of its articles, sections, subsections, or subdivisions thereof, provisions, sentences, clauses or phrases irrespective of the fact that one or more of them is declared invalid.

SECTION 6: EFFECTIVE DATE AND PUBLICATION

This Ordinance shall take effect thirty (30) days after its adoption. The EDHCWD Board Secretary is directed to publish this ordinance in a newspaper of general circulation in the District. In lieu of publication of the full text of the ordinance, a summary of the ordinance may be published by the by the Board Secretary within fifteen (15) days after its passage and a

certified copy shall be posted in the office of the EDHCWD pursuant to *Government Code Section 36933(c) (1)*.

The above Ordinance was introduced at a meeting of the Board of Directors of the EDHCWD on September 15, 2022, and it was then read for the first time. A public hearing was set for the Ordinance to be read for the second time on October 20, 2022 and approved by the following vote:

PASSED AND ADOPTED by the Board of Directors of the EDHCWD this, 20th day of October, 2022.

AYES: 5
NOES: 0
ABSENT: 0
ABSTAIN: 0

Bobbi Bennett, Board President

ATTEST:

Jessica Braddock, Board Secretary

Appendix H: EDHCWD Ordinance 2023-01 (Unimproved Parcel Maint.)

EL DORADO HILLS COUNTY WATER DISTRICT

EL DORADO HILLS FIRE DEPARTMENT

ORDINANCE NO. 2023-01

BE IT ORDAINED BY THE BOARD OF DIRECTORS OF THE EL DORADO HILLS COUNTY WATER DISTRICT AS FOLLOWS:

AN ORDINANCE OF THE EL DORADO HILLS COUNTY WATER DISTRICT RELATED TO HAZARDOUS VEGETATION MANAGEMENT ON UNIMPROVED PARCELS, AND DECLARING CERTAIN HAZAROUS VEGETATION AND COMBUSTIBLE MATERIALS A PUBLIC NUISANCE, AND PROVIDING FOR THE REMOVAL THEREOF.

Be it ORDAINED by the Board of Directors of the El Dorado Hills County Water District (EDHCWD), also known as the El Dorado Hills Fire Department:

SECTION 1: **FINDINGS OF FACTS**

1.1 The El Dorado Hills County Water District (EDHCWD), also known as the El Dorado Hills Fire Department, is an independent water district established under Division 12, Part 2, Article 7, Section 31120[1] of the State Water Code; and

1.2 It is the intent of the Governing Board of EDHCWD that this Ordinance shall apply to an annual program for the Abatement of the growth and/or accumulation of weeds, grasses, shrubs, dormant brush, slash, tree limbs, hazardous vegetation and combustible materials on all designated Unimproved Parcels within the EDHCWD and maintenance of those parcels to prevent vegetation from growing back; and

1.3 All parcels within the EDHCWD have been identified and designated as being within either a State Responsibility Area (SRA) or Local Responsibility Area (LRA) Moderate, High or Very High Fire Hazard Severity Zone by the California Department of Forestry and Fire Protection (CAL FIRE) in accordance with the Fire and Resource Assessment Program (FRAP) Map; and

1.4 During the fire season, the EDHCWD generally has a dry, arid climate conducive to wildfires. EDHCWD has a very diverse and complex landscape, which includes dry, brush-covered, and grass-covered wildlands, mountainous areas, and other terrains which are home to many sensitive plant and animal species. Many of the EDHCWD's native and non-native plant species can be highly combustible during normal dry periods and have contributed to significant wildfires within the EDHCWD. Difficult topography, terrain, and weather conditions exacerbate the fire danger and the difficulty of fighting wildfires, and have resulted in catastrophic fire losses to life, property, and the environment; and

1.5 Catastrophic wildfire events pose a serious threat to the preservation of public peace, health and safety within any wildland urban interface and intermix communities. The proper implementation and enforcement of hazardous fuel regulations and landscaping requirements have been proven to reduce the impact from destructive wildfires through the mitigation of hazardous fuel conditions around homes and roadways; and

1.6 Wildfires with extreme fire behavior are occurring more often and growing larger in size. Eighteen (18) of the twenty (20) most destructive wildland fires in the State of California have occurred between 2002-2022. The County of El Dorado has a history of destructive wildfires which have burned within its boundaries. These include the 2007 Angora Fire, 2014 King Fire,

[1] A district may exercise any of the powers, functions, and duties which are vested in, or imposed upon, a fire protection district pursuant to the Fire Protection District Law of 1987, Part 3 (commencing with Section 13800) of Division 12 of the Health and Safety Code.

2021 Caldor Fire and the 2022 Mosquito Fire. Climate change stressors, such as increased average air temperature, precipitation variability, reduced snowpack, drought and tree mortality, will lead to an increased frequency of large wildfires that will create adverse impacts on local communities in the County of El Dorado, including both El Dorado Hills and Latrobe; and

1.7 Of paramount importance to the Governing Board of EDHCWD and the citizens of El Dorado Hills and Latrobe are the protection of lives and structures from the threat of wildfire, and the safety of public safety personnel during wildfires. The proper maintenance of defensible space on Unimproved Parcels benefits property owners, public safety personnel, and all citizens of both El Dorado Hills and Latrobe by dramatically increasing the likelihood that structures will survive a wildfire, provides for firefighter safety during a wildfire, and generally aids in the protection of lives, property, and the environment; and

1.8 The Governing Board of EDHCWD finds and declares that the uncontrolled growth and/or accumulation of weeds, grasses, hazardous vegetation and combustible materials or obstructions on sidewalks, streets, and on lands or lots within the EDHCWD is dangerous or injurious to neighboring property and the health, safety, and welfare of residents of the EDHCWD. Such growth and accumulation constitute a public nuisance in that it creates fire hazards, reduces the value of private property, promotes blight and deterioration, invites plundering, constitutes an unattractive nuisance, and creates a hazard to the health, safety, and general welfare of the public; and

1.9 The purpose of this Ordinance is to provide for the removal of hazardous vegetation and combustible material from around the exterior of improvements situated in the jurisdiction of the EDHCWD to reduce the potential for fire and to promote the public health, safety, and welfare of the community. It is the further purpose of this Ordinance to establish a hazardous vegetation reduction program that provides a process to identify and abate hazardous vegetation on parcels and protect the lives and property of the citizens of the EDHCWD, while at the same time protecting sensitive plant and animal species and protecting against significant erosion and sedimentation. The removal of hazardous vegetation in the areas subject to this Ordinance is recognized as an essential action homeowners and property owners can take to increase the chances that homes, structures and other property will survive a wildfire, while protecting the natural environment. Regular fuels management and modifications consistent with the requirements of this Ordinance is necessary to ensure adequate defensible space is achieved; and

1.10 The defensible space required by this Ordinance is necessary to significantly reduce the risk of transmission of flame or heat sufficient to ignite the structures, and there is no other feasible

mitigation measure possible to reduce the risk of ignition or spread of wildfire to structures on adjacent improved parcels.

SECTION 2: **APPLICATION OF ORDINANCE**

2.1 This Ordinance is enacted pursuant to the powers granted to EDHCWD concerning the abatement of hazardous vegetation and combustible material as contained within California Health & Safety Code (HSC) Sections 13861(h), 13879 and 14875 et seq., and 14930 as well as authority granted under El Dorado County Codes & Ordinances (EDCC) Chapter 8.09, California Code of Regulations Title 14, Division 1.5, Chapter 7, Subchapter 3, Section 1299.01 to .05, California Code of Regulations Title 19 §3.07 and California Code of Regulations Title 24, Part 9 (California Fire Code) Chapter 49, as amended. Additional authority for the abatement of nuisances, establishment of procedures, and establishment of real property lines through EDHCWD is provided in *applicable governing codes and regulations of the State of California*.

2.2 This Ordinance applies to Unimproved Properties regardless of size. The abatement of Hazardous Vegetation posing a Fire Hazard in the community shall occur in accordance with the regulations described in this Ordinance by no later than May 1st each year unless otherwise directed by the Fire Code Official. It shall be the duty of every owner, occupant, and person in control of an Unimproved Parcel of land or having an interest therein, to abate therefrom, and from all Unimproved Parcels of land, all Hazardous Vegetation, that constitutes a Fire Hazard and public nuisance which may endanger or damage neighboring property or forestland.

SECTION 3: **DEFINITIONS**

As used in this Ordinance, the following definitions shall apply:

3.1 **Abate or Abatement** means an act used to remove, destroy, eliminate, seize, impound, or any action taken to mitigate a public nuisance.

3.2 **Abatement Costs** means all costs incurred by the EDHCWD to enforce this ordinance and to abate the hazardous vegetation or combustible material on any property pursuant to this Article, including physical abatement costs, administration fees and any additional actual costs incurred for the abatement proceeding(s), including attorney's fees, if applicable.

3.3 **Biomass** means all green waste material generated during a fuel treatment project. Biomass includes, without limitation, all grass, weeds, vegetation, and tree trimmings.

3.4 **Board** means the Governing Board for the El Dorado Hills County Water District.

3.5 **California Fire Code (CFC)** means code provisions found within California Code of Regulations Title 24, Part 9, as amended locally by EDHCWD.

3.6 **Citation or Administrative Citation** means a civil citation issued pursuant to the Ordinance stating there has been a violation of one or more provisions and setting the amount of the civil penalty to be paid by the responsible party.

3.7 **Combustible Material** means all rubbish, litter, or material of any kind other than hazardous vegetation that is combustible and endangers the public safety by creating a fire hazard.

3.8 **Days** means calendar days.

3.9 **Defensible Space** means that area described in California Code of Regulations Title 14, Division 1.5, Chapter 7, Subchapter 3, Section 1299.02, Government Code 51182, Public Resources Code Section 4291, El Dorado County Codes & Ordinances Chapter 8.09 and as otherwise described in this Code, which is adjacent to each side of a building or Structure and must be cleared of Hazardous Vegetation, or Combustible Material, as set forth in this Ordinance.

3.10 **EDHCWD** means the El Dorado Hills County Water District of El Dorado County, a political subdivision of the State of California.

3.11 **Fire Code Official** means the fire chief or other designated authority charged with the administration and enforcement of the code, or a duly authorized representative.

3.12 **Fire Hazard** means any condition, arrangement, act, or omission which:

3.12.1 Increases, or may cause an increase of hazard or menace of fire to a greater degree than that customarily recognized as normal by persons in the public service regularly engaged in preventing, suppressing, or extinguishing fire; or

3.12.2 May obstruct, delay, hinder, or interfere with the operations of a fire department or the egress of occupants in the event of fire.

3.13 **Fire Safe Plan** means a document prepared for a specific project or development proposed for a Wildland-Urban Interface (WUI) Fire Area. It describes ways to minimize and mitigate potential for loss from wildfire exposure.

3.14 **Hazardous Vegetation** means any vegetation that is combustible and endangers the public safety by creating a fire hazard. Hazardous Vegetation includes material that in its natural state will readily ignite, burn, and transmit fire from native or landscape plants to any structure or other vegetation. Hazardous Vegetation includes, but is not limited to, dry grass and leaves, brush, weeds, green waste, dead or dying trees, low-hanging branches, litter, or other flammable vegetation that can create a Fire Hazard. Hazardous Vegetation shall not include a commercial agricultural crop that is being actively grown and managed by the property owner or his or her legal tenant.

3.15 **Heritage Tree** means any mature tree or mature stand of trees designated by the County of El Dorado as having historic or cultural significance.

3.16 **Improved Parcel.** Means a portion of real property of any size which is located in an area primarily intended for residential uses, the area of which is determined by the assessor's maps and records, and which may be identified by an Assessor's Parcel Number, upon which a structure is located.

3.17 **Ladder Fuels** means fuels that can carry a fire vertically between or within Combustible Material or Hazardous Vegetation.

3.18 **Parcel** means a portion of real property of any size, the area of which is determined by the Assessor's maps and records, and which may be identified by an Assessor's Parcel Number.

3.19 **Real Estate Transaction** means the transfer of real property between individuals or entities.

3.20 **Responsible Person(s)** means an owner, tenant, occupant, lessor, manager, licensee, political subdivision, local government agency, municipality, or other person having control over a Structure or parcel of land or, to the fullest extent allowed by law, the parent or legal guardian of any person under 18 years who have done any act for which a penalty may be imposed under this Ordinance, or any other person required to comply with the provisions of the Ordinance and, any other lien holder, secured party, or other person who has properly recorded a security interest or other appropriate document evidencing an interest in the property, which has been recorded in the official records of the County.

3.21 **Roadway.** means a road or roadway that is any County street or road, other public road or alley, or private thoroughfare at least ten (10) feet wide that is ordinarily used for vehicular travel, open to public travel, and connects with a County road, state highway, other public road, private road or an alley which affords primary access to an abutting lot. This is a general term inclusive of all other terms such as fire lane, public street, private street, parking lot lane, and access roadway.

3.22 **Rubbish** includes, but is not limited to, non-putrescible Wastes, such as paper, cardboard, grass clippings, tree, or shrub trimmings, leaves and needles, wood chips used in landscaping or within five feet of a Structure, bedding, crockery, rubber tires, construction Waste and similar Waste materials.

3.23 **Slash** means the woody debris remaining on the ground after fuels management work: Slash includes, but is not limited to, treetops, branches, bark, chunks, cull logs, uprooted stumps, and uprooted trees.

3.24 **Softwood** means the wood from a conifer (such as pine, cedar, fir, or spruce) as distinguished from that of broadleaved trees.

3.25 **Structure** means any dwelling, house, building, or other type of combustible construction, whether or not occupied, including but not limited to a wood fence located within the Defensible Space of any other Structure.

3.26 **Unimproved Parcel** means a portion of land of any size, the area of which is determined by the Assessor's maps and records and may be identified by an Assessor's Parcel Number (APN) upon which no Structure is located.

3.27 **Vegetation** means plants considered collectively, especially those found in a particular area or habitat. For the purposes of this Ordinance any tree less than six inches in diameter is considered Vegetation.

3.28 **Waste** means all putrescible and non-putrescible solid, semi-solid, and liquid wastes, including residential, commercial, and municipal garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, construction, and demolition debris, discarded home and industrial appliances, manure, vegetable or animal solid and semi-solid wastes, and other discarded solid wastes and semisolid wastes.

3.29 **Weeds** means Vegetation growing upon streets, sidewalks, or private property, including any of the following types:

3.29.1 Weeds which bear seeds of a downy or wingy nature.

3.29.2 Sagebrush, chaparral, and any other brush or weed which attains such large growth as to become, when dry, a fire menace to adjacent improved property.

3.29.3 Weeds which are otherwise noxious or dangerous.

3.29.4 Poison oak or poison ivy when the conditions constitute a menace to public health.

3.29.5 Dry grass, stubble, brush, litter, or other flammable materials which endanger public safety by creating a fire hazard.

3.29.6 Vegetation that is not pruned or is otherwise neglected so as to attain such large growth as to become, when dry, a fire menace to adjacent property.

3.30 **Wildfire Risk Area** means land that is covered with grass, grain, brush or forest, whether privately or publicly owned, which is so situated or is of such inaccessible location that a fire originating upon it would present an abnormally difficult job of suppression or would result in great or unusual damage through fire or such areas designated by the Fire Code Official.

SECTION 4: CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)

4.1 The subject project is Categorically Exempt (Class 4) from provisions of CEQA, pursuant to 14 CCR section 15304.

4.2 The subject project is also exempt under the "common sense" exemption in 14 CCR section 15061(b)(3) because it does not involve activity that will have a significant effect on the environment.

SECTION 5: **CLEARANCE OF HAZARDOUS VEGETATION ON UNIMPROVED PARCELS**

5.1 All Hazardous Vegetation shall be removed on Unimproved Parcels that are one (1.0) acre in size or smaller.

5.1.1 All dry grass and other Weeds located on the Unimproved Parcel shall be removed or cut to a maximum height of two (2) inches.

5.1.2 Tree limbs within six (6) feet of the ground that permit fire to spread into the tree canopy and promote ember distribution shall be removed.

5.1.3 All downed trees, branches or woody debris smaller than eight (8) inches in diameter located on the ground shall be removed.

5.1.4 Slash, Rubbish and Combustible Material debris piles that can easily support fire ignition and spread shall be removed.

5.2 All Hazardous Vegetation shall be removed on Unimproved Parcels over one-acre (1.01) in size to provide defensible space within one hundred (100) feet from Structure(s) and twenty (20) feet along roadways.

5.2.1 All dry grass and other Weeds located within the designated defensible space zone shall be removed or cut to a maximum height of two (2) inches.

5.2.2 Tree limbs within six (6) feet of the ground that permit fire to spread into the canopy and promote ember distribution shall be removed.

5.2.3 All downed trees, branches, or woody debris smaller than eight (8) inches in diameter located on the ground shall be removed.

5.2.4 Slash, Rubbish and Combustible Material debris piles that can easily support fire ignition and spread shall be removed.

5.2.5 Hazardous Vegetation located within twenty (20) feet of Roadways shall be removed or cut to a maximum height of two (2) inches to reduce fire spread from roadside ignition sources and to maintain emergency evacuation routes for the local community.

Exception: Single specimens of trees if they do not form a means of readily transmitting fire as deemed by the El Dorado Hills Fire Department.

5.3 All Unimproved Parcels, regardless of size, shall comply with the following requirements:

5.3.1 An Unimproved Parcel located within a development subject to a Fire Department approved Fire Safe Plan shall comply with the terms of that plan as required by CFC § 4903 regardless of size.

5.3.2 Unimproved Parcels located in areas designated by the Fire Code Official as a Wildfire Risk Area shall also be evaluated against the provisions of this Ordinance and EDCC Chapter 8.09.

5.3.3 Unimproved Parcels known to contain, or that the property owner believes, may contain habitat for rare, threatened or endangered plant or animal species shall contact the California Department of Fish and Wildlife at least ten (10) days in advance of vegetation management work. If the property owner is aware of any federal or state listed species then the appropriate wildlife agency shall be consulted prior to beginning work. It is possible that a permit may be required from the appropriate agencies (e.g., U.S. Fish and Wildlife Services and/or the California Department of Fish and Wildlife) prior to work beginning on the property.

5.3.4 Agricultural crops and active agricultural operation (e.g., farming, grazing, nursery and winegrape) lands as defined in the EDCC are exempt from meeting the regulations described in this Ordinance.

5.3.5 Heritage Trees are exempt from meeting the regulations described in this Ordinance.

5.3.6 All Slash, Rubbish, or Combustible Material debris shall be chipped or removed from the property.

5.3.7 The Fire Code Official may require greater clearance distances than that specified in Section 5, at their discretion, where public health safety or welfare so dictate, or where geographic, topographic or vegetation circumstances dictate.

SECTION 6: ACCEPTABLE METHODS OF CLEARANCE

6.1 **Disking**. The discs shall be set at an angle sufficient to cut the sod loose and adequately bury the growth of weeds, grass, or noxious vegetation existing at the time. Disking shall include rototilling or cultivating. Disking shall be done each time the growth exceeds six (6) inches in height.

6.2 **Scraping.** Area shall be scraped clear, and all debris shall be removed from the required clear area.

6.3 **Mowing.** Height of vegetation shall not exceed two (2) inches at completion. Mowing shall be done each time growth exceeds six (6) inches in height. Mowing shall include hand-operated weed eaters, flail, and rotary mowers.

6.4 **Spraying.** If sprays or pre-emergent are utilized prior to growth of vegetation, preventing growth of vegetation, then this will be an acceptable method of abatement. Any time growth of vegetation exceeds six (6) inches height, it shall be removed by another acceptable method of abatement.

6.5 **Grading.** Grading shall not take place without all appropriate permits required by the County of El Dorado.

SECTION 7: **DUTY TO ABATE HAZARDOUS VEGETATION AND COMBUSTIBLE MATERIALS**

7.1 Upon receipt of a notice of violation and order to abate, as discussed in Section 13, it shall be the duty of every owner, occupant and person in control of any improved or unimproved parcel of land or interest therein, which is located in the jurisdiction of EDHCWD to abate there from, and from all parcels, roadways and parkways, except for those roads maintained by the county, all Combustible Material and Hazardous Vegetation, that in the judgment of the Fire Code Official, constitutes a Fire Hazard which may endanger or damage neighboring property pursuant to the requirements of the notice of violation and order to abate received.

7.2 The property owner, occupant and person in control of the land is responsible for the abatement and vegetation management (collectively referred to as the "Responsible Person").

7.3 The Responsible Person shall also comply with all other federal, state and local laws, including environmental protection laws, and obtain permits when necessary.

SECTION 8: **CORRECTIVE ACTIONS**

8.1 After declaring a Fire Hazard pursuant to this Ordinance, the Fire Code Official may require that the Responsible Person(s) take corrective action(s) to abate the Fire Hazard. Such actions may include, but are not limited to the following:

8.1.1 Removing Hazardous Vegetation, Combustible Material, Weeds, Rubbish, or other obstructions or materials that are a fire hazard.

8.1.2 Taking specific action(s) to come into compliance with the regulations and rules that prescribe the maintenance of defensible space around structures and real property.

SECTION 9: **INSPECTIONS BY THE EL DORADO HILLS FIRE DEPARTMENT**

9.1 For the purpose of enforcing or administering this Ordinance, the Fire Code Official, may enter upon any Unimproved Parcel for the purpose of inspecting the property or for summary abatement proceedings whenever the Fire Code Official is informed, or has reasonable cause to believe, that Hazardous Vegetation or Combustible Material exists that constitute a condition dangerous or

injurious to the health or welfare of persons or to the public, including the environment, and is a public nuisance, or is otherwise in violation of this Ordinance.

9.2 No person shall interfere with the Fire Code Official while acting in the official course and scope of their duty.

SECTION 10: **REOCCURRING FIRE HAZARD**

10.1 In the case of a parcel containing a Fire Hazard where it has been necessary for the El Dorado Hills Fire Department to Abate as a public nuisance in two consecutive years, and the Fire Hazard is seasonal or recurring, the Governing Board of EDHCWD may declare such a parcel to be a seasonal public nuisance.

10.2 As to such parcels constituting a seasonal Fire Hazard, the Fire Code Official may mail a notice to the Responsible Person(s) of the property at the address that appears upon the current assessment roll. The notice shall contain the information prescribed in Health and Safety Code Section 14900.6.

10.3 If the nuisance is not Abated by the Responsible Person(s) within the time specified, the El Dorado Hills Fire Department may proceed to Abate the property and recover costs for doing so, pursuant to Health and Safety Code sections 149001 and 14902, and as provided for in this Ordinance.

SECTION 11: **PENALTIES**

11.1 Failure to comply with the provisions described in this Ordinance may result in the issuance of an Administrative Citation by the El Dorado Hills Fire Department, or a declaration by the Board that the condition on the parcel constitute a public nuisance to be abated at the Responsible Person(s) expense.

11.2 Every violation of this Ordinance is punishable by:

11.2.1 A fine not exceeding $100.00 for the first violation; and

11.2.2 A fine not exceeding $200.00 for the second violation within three years; and

11.2.3 A fine not exceeding $500.00 for each additional violation within three years.

11.3 Payment of the fine shall not excuse the failure to correct the violation nor shall it bar further enforcement action by EDHCWD.

11.4 All fines shall be payable to EDHCWD unless otherwise directed in the Notice of Violation and Order to Correct.

11.5 For all delinquent unpaid administrative fines, there shall be a penalty imposed in accordance with the provisions of this Ordinance. The delinquency date for an administrative fine shall be 30 days

following the imposition of the fine or the administrative determination of the Board, whichever is later.

11.6 The right to and procedures for requesting an administrative hearing are detailed in Section 13.

SECTION 12: **ABATEMENT OF NUISANCE BY FIRE CODE OFFICIAL**

12.1 Any condition caused, maintained, or permitted to exist in violation of any provisions of this Ordinance may be Abated by the Fire Code Official, pursuant to the procedures set forth in Section 13.

SECTION 13: **ABATEMENT PROCEDURES**

13.1 An Initial Notice to Abate Fire Hazard and Destroy Weeds shall be sent by U.S. Mail or other approved means to all unimproved property owners of parcels by April 15th of each year.

13.2 If the property is still deemed a Fire Hazard on or after May 1st of each year a Final Notice to Abate Fire Hazard and Destroy Weeds will be mailed to the property owner by certified U.S. Mail. In addition to the mailed notice, the property will have one or more signs conforming with the provisions of California Health and Safety Code (HSC) §§ 14891-14894 placed on them to notify the property owner of the notice to abate this concern.

13.3 The property owner will have no less than ten (10) days to abate the Fire Hazard or appeal this decision to the EDHCWD board at their May monthly meeting. If the Fire Hazard has not been abated by the end of the 10-day notice, or the end of the appeal period, whichever is greater, the EDHCWD will dispatch a weed abatement contractor to abate the Fire Hazard in accordance with the provisions of this Ordinance.

13.4 A notice of the hearing prescribed in HSC § 14892 shall be published once in a newspaper of general circulation printed and published in the county, not less than 10 days prior to the date of the hearing.

13.5 The amount of the cost for abating the Fire Hazard and the amount incurred by the Fire Department in enforcing abatement shall constitute a special assessment against the property from which removal occurs and are a lien on the property for the respective assessments as described in the current EDHCWD resolution.

SECTION 14: **REAL ESTATE TRANSACTIONS**

14.1 Prior to close of any Real Estate Transaction subject to Civil Code section 1102.19 within EDHCWD, the seller of any real property must obtain documentation from the Fire Code Official that the property is in compliance with this Ordinance and provide that documentation to the buyer at or before the close of escrow. If documentation of compliance is not available at the time of

escrow, the buyer shall obtain documentation from the Fire Code Official stating the property is in compliance with this Ordinance within 90 days after the close of escrow, unless otherwise approved by the Fire Code Official.

SECTION 15: **CONFLICT**

15.1 The operation of this Ordinance shall in no way change or diminish the application of other ordinances of EDHCWD dealing with like or similar matters. In any case where a provision of this Ordinance is found in conflict with a provision of any zoning, building, fire safety, or health ordinance or any other section of the EDCC, including fines, the provision which establishes the higher standard for the promotion and protection of the health and safety of the people shall prevail.

15.2 It is not intended by this Ordinance to repeal, abrogate, annul, or in any way impair or interfere with existing provisions of other laws or ordinances or with private restrictions placed upon property by covenant, deed, or other private agreement except those specifically repealed by this Ordinance. In cases where two or more provisions of this or any other Ordinance conflict, the most stringent or restrictive shall prevail.

SECTION 16: **SEVERABILITY**

16.1 If any Ordinance, article, subsection or subdivision thereof, provision, sentence, clause or phrase of this code, or any application thereof, is for any reason held to be invalid by a court of competent jurisdiction, such decision shall not affect the remaining provisions of this code, which can be given effect without the invalid portions and, therefore, such invalid portions are declared to be severable.

16.2 The EDHCWD hereby declares that it would have enacted this Ordinance and each of its articles, sections, subsections, or subdivisions thereof, provisions, sentences, clauses or phrases irrespective of the fact that one or more of them is declared invalid.

SECTION 17: **EFFECTIVE DATE AND PUBLICATION**

17.1 This Ordinance shall take effect thirty (30) days after its adoption. The EDHCWD Board Secretary is directed to publish this Ordinance in a newspaper of general circulation in the District. In lieu of publication of the full text of the ordinance, a summary of the ordinance may be published by the by the Board Secretary within fifteen (15) days after its passage and a certified

copy shall be posted in the office of the EDHCWD pursuant to *Government Code Section 36933(c) (1)*.

17.2 The above Ordinance was introduced at a meeting of the Board of Directors of the EDHCWD on {3/29/23}, and it was then read for the first time. A public hearing was set for the Ordinance to be read for the second time on { 4/25/23 } and approved by the following vote:

PASSED AND ADOPTED by the Board of Directors of the EDHCWD this, 25th day of April, 2023.

AYES: 5

NOES: 0

ABSENT: 0

ABSTAIN: 0

John Giraudo, Board President

ATTEST:

Jessica Braddock, Board Secretary

Appendix I: Characteristics of Fire Resistive Vegetation

All plants will burn under extreme fire weather conditions such as drought. However, plants burn at different intensities and rates of consumption. Fire-resistive plants burn at a relatively low intensity, slow rates of spread and with short flame lengths. The following are characteristics[38] of fire-resistive vegetation:

- Growth with little or no accumulation of dead vegetation (either on the ground or standing upright).
- Non-resinous plants (willow, poplar, or tulip trees).
- Low volume of total vegetation (for example, a grass area as opposed to a forest or shrub-covered land).
- Plants with high live fuel moisture (plants that contain a large amount of water in comparison to their dry weight).
- Drought-tolerant plants (deeply rooted plants with thick, heavy leaves).
- Stands without ladder fuels (plants without small, fine branches and limbs between the ground and the canopy of overtopping shrubs and trees).
- Plants requiring little maintenance (slow-growing plants that, when maintained, require little care).
- Plants with woody stems and branches that require prolonged heating to ignite.

[38] See International Code Council *Wildland Urban Interface Code Section F101; 2021.*

Appendix J: Ready – Set – Go Wildfire Evacuation Program

The geography, weather patterns and number of Wildland Urban Interface communities in California make it a state particularly threatened by devastating wildfire. To help educate property owners and residents in areas most at risk, CAL FIRE has developed a communications program called "Ready, Set, Go!" that breaks down the actions needed to be ready for wildfire.

Ready, Set, Go! Program

Get prepared for wildfire before it strikes by following Ready, Set, Go!

- Be Ready: Create and maintain defensible space and harden your home against flying embers.
- Get Set: Prepare your family and home ahead of time for the possibility of having to evacuate.
- Be Ready to GO!: Take the evacuation steps necessary to give your family and home the best chance of surviving a wildfire.

Go to this link for additional information on the Ready - Set - Go program: What is the Ready, Set, Go! Program? (wildlandfirersg.org).

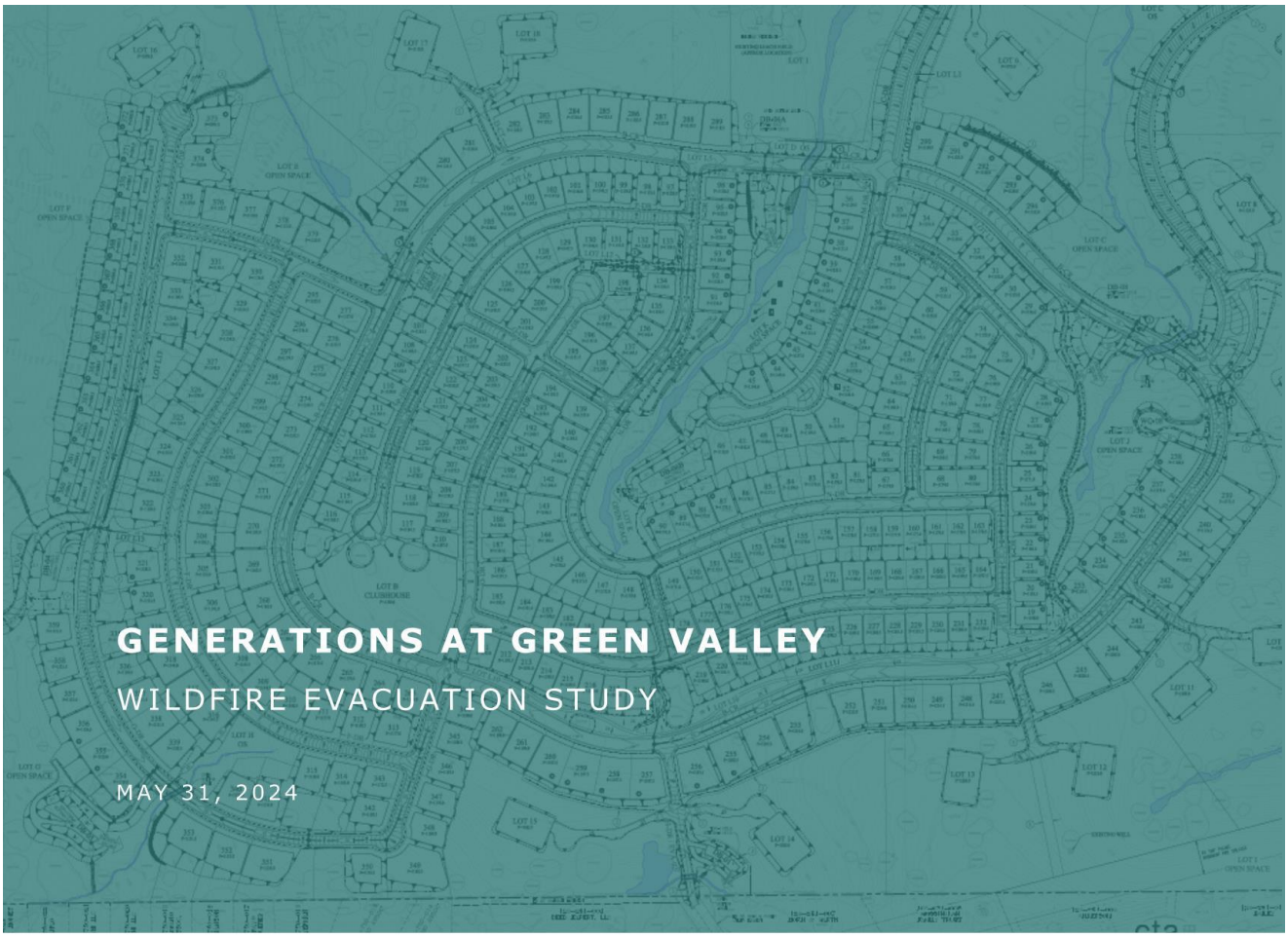
Appendix K: FIREWISE USA®

The National Fire Protection Association (NFPA) Firewise USA® recognition program provides a collaborative framework to help neighbors in a geographic area get organized, find direction, and take action to increase the ignition resistance of their homes and community and to reduce wildfire risks at the local level. Any community that meets a set of voluntary criteria on an annual basis and retains an "In Good Standing Status" may identify itself as being a Firewise® Site.

The Firewise USA® program is administered by NFPA® and is co-sponsored by the USDA Forest Service and the National Association of State Foresters. While the NFPA® administers this program, individuals and communities participate on a voluntary basis. The NFPA® disclaims liability for any personal injury, property, or other damages of any nature whatsoever, whether special, indirect, consequential, or compensatory, directly, or indirectly resulting from participation in the Firewise USA® program. The NFPA® also makes no guaranty or warranty as to the accuracy or completeness of program guidance.

Go to this link for additional information on the FIREWISE USA program: NFPA - Firewise USA®.

Appendix L: Generations at Green Valley Wildfire Evacuation Study



PREPARED FOR
Green Valley Road Benefits, LLC

c/o

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Jaren Nuzman

PREPARED BY
DKS Associates

Randy Johnson, PE, PTOE
Principal

Emily D'Antonio
Transportation Engineering Associate

TABLE OF CONTENTS

INTRODUCTION

This study documents the wildfire evacuation assessment for the proposed Generations at Green Valley residential subdivision development located in El Dorado County, California. This assessment has been completed per the direction of local agencies, including CAL FIRE, El Dorado Hills Fire Department, El Dorado County Sheriff's Office of Emergency Services, and El Dorado County Planning Services. This study serves as a supporting analysis of the Generations at Green Valley WUI Fire Protection Plan (EDC Project #TM22-0001). The objective of this study is to identify evacuation routes for the proposed development and determine if there are significant impacts on the ability to safely evacuate the proposed development and/or if the proposed development has a significant impact on the ability of the surrounding community to concurrently evacuate during a larger area wildfire evacuation scenario. Significant impacts are determined through an assessment of Evacuation Time Estimates (ETEs) to clear evacuation trips from the evacuation zones and if vehicle evacuation traffic is impeded from exiting the evacuation zones at the end of the wildfire scenario period. At the time of this study, there are no local or state agency thresholds of significance based on ETEs. The ETEs are determined using a simulation-based model that accounts for the roadway capacity and the time-dynamics of a wildfire evacuation event.

The methodology for the wildfire evacuation route assessment used for this study is consistent with Government Code Section 65302.15 (California AB 747), which requires cities and counties to identify evacuation routes and locations "under a range of emergency scenarios." The capacity, safety, and viability of evacuation routes associated with the project must be analyzed against the range of emergency scenarios to ensure that it does not impair the implementation of an adopted emergency response plan or evacuation plan. The traffic modeling approach used by this study assesses the capacity of the roadway system under multiple evacuation departure times and available evacuation route scenarios. The Project site is not subject to substantial hazards other than wildfire. Compliance with federal, state, county, and local regulations will minimize risks associated with seismic events, flooding, geological conditions, and hazardous materials. This evacuation study does not plan for compounding disasters (e.g. simultaneous wildfire and hazardous materials incidents) or cascading effects (e.g. communications disruption during a wildfire).

DISCLAIMER

The contents of this study are founded on precise data and a likely wildfire scenario within the El Dorado Hills area as provided by Phillips Consulting Services developed in coordination with local fire agencies. They are not intended as a forecast or comprehensive compilation of all conceivable wildfire situations in the area. This study does not ensure that wildfires or evacuation routes will unfold precisely as depicted in this study nor does it identify any evacuation routes to be taken by the public. Evacuation orders and evacuation route designation are the purview and responsibility of the El Dorado County Sheriff's Office of Emergency Services. This study only accounts for the evacuation demand, departure times, destination distribution, and background traffic condition assumptions described in this report. A wildfire scenario that results in changes to any of these input parameters may result in different outcomes.

DESCRIPTION OF DEVELOPMENT

The proposed Generations development is located in the east of Folsom Lake State Recreation Area on Green Valley Road. The project proposes to add 379 residential units including 214 age-restricted units, 148 units of 10K single-family lots, and 17 units of 5 AC lots **FIGURE 1** and **FIGURE 2** show the study area and site plan.

The evacuation area is around 3 miles north of US 50. The major west/east facility adjacent to the development is Green Valley Road. The proposed Generations development includes two access points on Green Valley Road. In addition to the two access points to Green Valley Road, an Emergency Access/Egress (EAE) will be provided via Lima Way to serve as a secondary means of emergency access and evacuation. The connection would have an automatic gate and be designed to be accessible by project residents during an evacuation order. Additionally, there would be two Emergency Vehicle Access (EVA) road connections at Marden Drive and East Green Springs Road. The East Green Springs Road connection will be stubbed to the Green Springs Ranch Property line. The EVA would only connect to Green Springs Ranch if the Green Springs Ranch Association chooses to complete the extension in the future and at its discretion. Connection locations are shown in **FIGURE 2**. These accesses would meet design standards for gated developments as described in Section 130.30.090(D) of the El Dorado County Code of Ordinances and the El Dorado Hills Fire Department Ordinance 2022-01. The gates would also comply with all design and operation criteria included in Section D103.5 of El Dorado Hills Fire Department Ordinance 2022-01.

The east primary access on Green Valley Road is a proposed traffic signal with an eastbound right turn deceleration turn lane, a westbound left turn lane, and a two-lane exit with left and right turn lanes. The secondary west access along Green Valley Road includes single-lane right-in, right-out only turn access. Within the Generations subdivision, all streets are location streets with an approximate width of 32 feet that include segments of on-street parking. Posted speeds are anticipated to be 25 mph, but with the moderate curvature, grades, and configurations of intersections, the operational speeds for purposes of this analysis are assumed to be 20 mph or less. The evacuation routes for the Generations site are shown in **FIGURE 3**.

WILDFIRE SCENARIO

The wildfire scenario for purposes of this evacuation assessment was provided to DKS Associates by Phillips Consulting Services developed in coordination with local fire agencies. The fire scenario originates north of the study area in the general vicinity of Hickok Road, burning south toward the Generations development site as shown in Figure 1. The fire is assumed to occur on a Saturday at 2:00 PM in October. This period was chosen as more residents are generally at home during weekends that would result in a potentially greater number of trips to be evacuated. In addition, area traffic counts show that background traffic activity is higher on mid-day Saturday as compared to Sunday, representing additional demand on local roadways at the start of an evacuation. This wildfire scenario will be evaluated considering a fast and slower rate of spread as detailed in the following Evacuation Time section. Based on the fire origin, season, time of day, and direction of spread parameters, the El Dorado County Sheriff's Office of Emergency Services determined the boundaries of the evacuation zone and warning zones to be evaluated for this evacuation assessment.

The project team also coordinated with the Office of Emergency Services to define the evacuation periods of 45 minutes and 60 minutes to represent the time period in which all evacuation trips would need to depart under a fast and moderate spreading fire scenario.

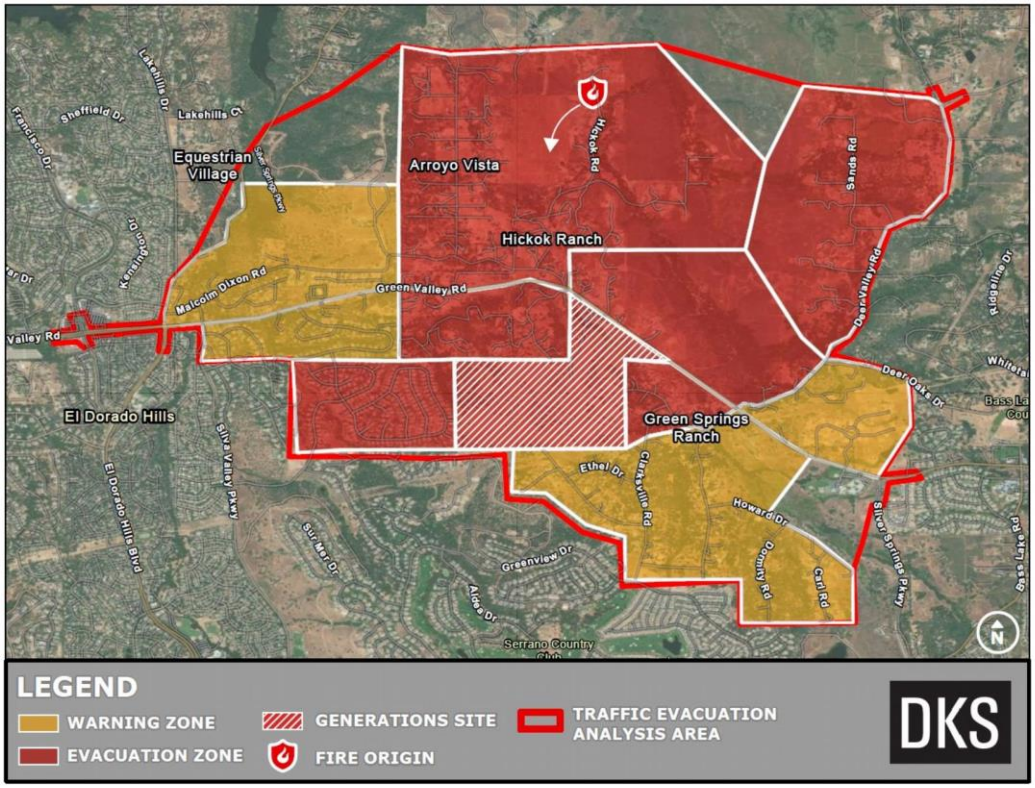


FIGURE 1: STUDY AREA

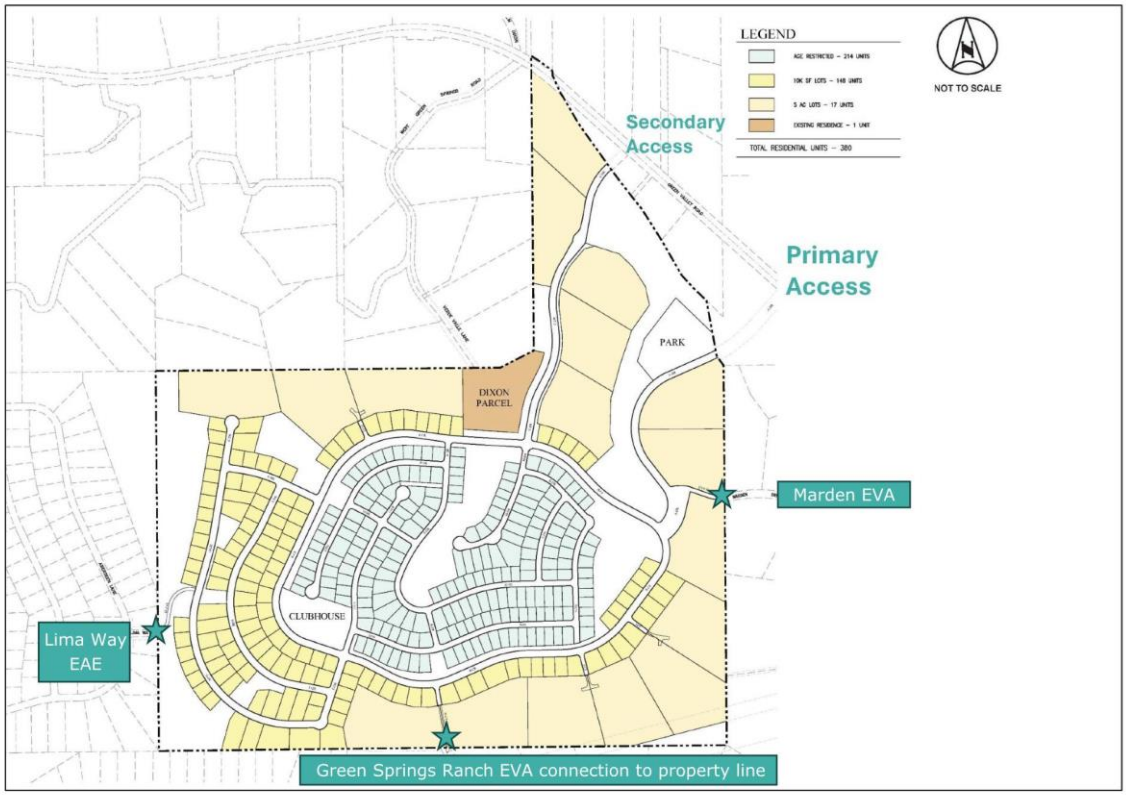


FIGURE 2: GENERATIONS DEVELOPMENT SITE PLAN

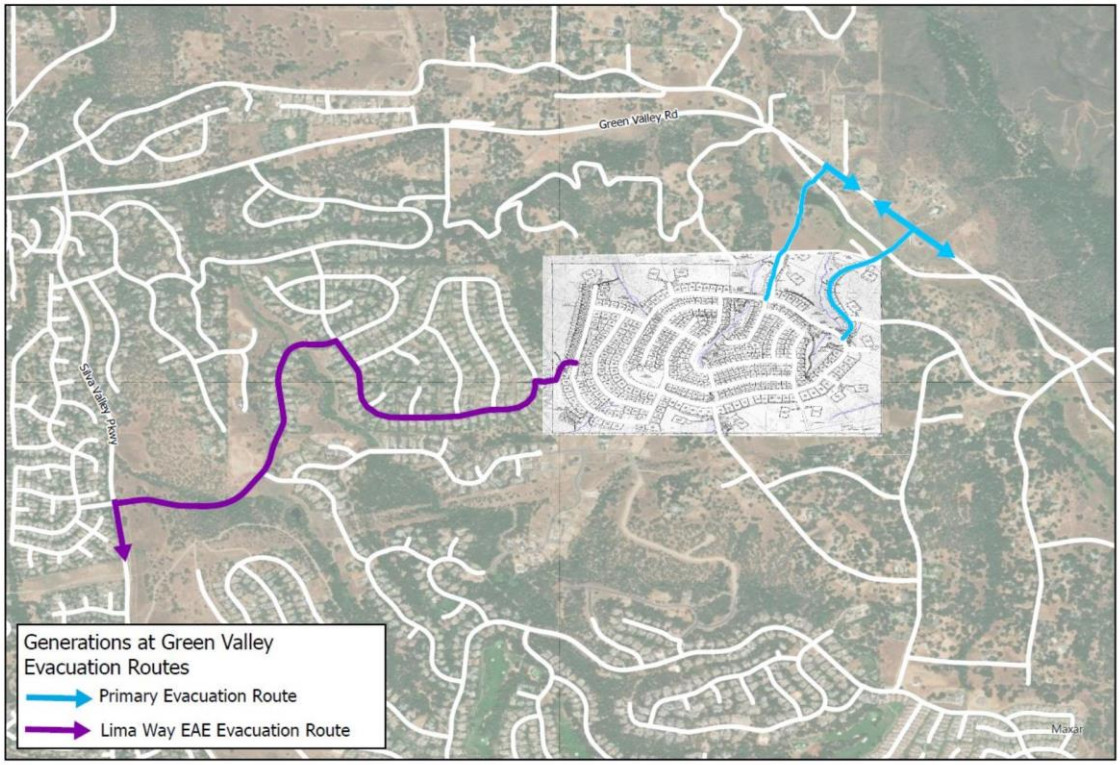


FIGURE 3: GENERATIONS AT GREEN VALLEY PUBLIC EVACUATION ROUTES

OVERVIEW OF EVACUATION

EVACUATION AND WARNING ZONES

The evacuation and warning zones are defined in Figure 4 as red and yellow areas. Evacuation zones define the area of mandatory evacuation for all individuals through the issue of an Evacuation Order. Warning zones are areas near the evacuation zones that are provided alert notification that a potential wildfire incident may require people to leave the area. It is issued as a precautionary measure to provide sufficient time for people to prepare themselves for a potential evacuation. Warning zones typically generate voluntary evacuation trips that add to the warning zone evacuation demand as detailed under the Evacuation Trip Demand Section.

EVACUATION DESTINATIONS

All evacuation trips are assigned evacuation destination directions along key routes leaving the study area to represent ultimate evacuation destinations downstream, such as shelters and neighboring towns. The following destinations have been identified for the Generations evacuation model:

- A: Green Valley Road east of Francisco Drive
- B: El Dorado Hills Boulevard south of Green Valley Road
- C: Silva Valley Parkway south of Green Valley Road
- D: Green Valley Road east of Silver Springs Parkway
- E: Silver Springs Parkway south of Green Valley Road
- F: Deer Valley Road east of Kanaka Valley Road

Each evacuation and warning zone has an assigned trip distribution percentage to one or more of the above destinations as shown in Figure 4. Evacuation Routes for the Generations site are shown in Figure 3.

EVACUATION MODEL SOFTWARE

The Evacuation assessment uses a Dynamic Traffic Assignment (DTA) simulation model using PTV VISUM software to capture all elements of a wildfire evacuation. The roadway network in the model includes all streets within the study area with key attributes, including the number of lanes, posted speed limits, intersection control (including stop signs, signal timing, and yield signs), and facility capacity. The evacuation and background trips are then assigned to the network in 5-minute intervals over the assignment period. The assignment period includes a one-hour warm-up period to preload background traffic, a 45-minute or 60-minute evacuation period following the evacuation order, and a one-hour cool-down period to capture the time to clear any remaining traffic. The evacuation destinations are defined in the following section.

EVACUATION TRIP DEMAND

The evacuation demand is determined by residential household data in evacuation and warning zones. US Census data on households without vehicles, those with one vehicle, and those with multiple vehicles is used to estimate demand. Households with no vehicle access generate zero evacuation trips as those households are anticipated to evacuate with neighbors or emergency personnel. Households with 1 vehicle generate one trip per household. For all other households, the value of 1.75 vehicles evacuating per household will be used, with the exception of the 55-year-old plus (55+) properties within the Generations development, where a value of 1.5 vehicles evacuating per household will be used. 214 of the 379 development parcels are proposed to be 55+ properties that are anticipated to have a lower resident per household and lower vehicle ownership rate than the non-55+ parcels, hence the lower number of vehicles evacuating per household. The value of 1.75 is consistent with the Santa Rosa Post-Fire Survey and the value of 1.5 is more conservative than the 2022 City of Sammamish Evacuation Survey value of 1.41 vehicles per non-55+ household.

Population within the warning zones may also voluntarily evacuate during the evacuation order, further adding to background traffic and congestion. 25 percent of the household trips are assumed to voluntarily evacuate during the evacuation order.

Given the primarily residential land use of the study area and the weekend time period of the wildfire scenario, worker or other evacuation trip types are not considered for this assessment. Additionally, once an Evacuation Order is given, return trips are not permitted into the evacuation zones, so egress-only trips are assumed for the evacuation trip demand. To be conservative, the evacuation trip estimation assumes no shelter in place trip reduction.

EVACUATION TIME

The departure time distribution of evacuees is critical to the evacuation assessment as that determines the peaking characteristics and subsequent congestion levels during an evacuation event. This time includes the time it takes for evacuees to receive the order, gather belongings, and perform any other necessary duties before departing their household. The evacuation assessment of the Generations development includes two departure time scenarios that could coincide with moderate or fast spreading wildfire scenarios:

1. 60 Minute Evacuation: All evacuation trips depart the evacuation zone or warning zone within 60 minutes of the evacuation order.
2. 45 Minute Evacuation: All evacuation trips depart the evacuation zone or warning zone within 45 minutes of the evacuation order.

The evacuation trip departure time distribution is assigned to the model in 5-minute intervals, with a percentage of the evacuation trips beginning to evacuate with each interval. The following departure time distributions were informed by the 2024 Greater Placerville Wildfire Evacuation Preparedness Study that developed distributions with input from El Dorado County Fire, CalFire, and El Dorado County Sheriff's OES. The departure time distributions for this study were adapted to use 5-minute intervals, rather than 15-minute to account for the shorter overall evacuation periods for these wildfire scenarios.

Table 1 shows the departure for the 60-minute and 45-minute scenarios.

TABLE 1: 60-MINUTE: PERCENT OF EVACUATION TRIPS BEGINNING AFTER EVACUATION ORDER

ELAPSED TIME (MIN)	60-MINUTE SCENARIO	30-MINUTE SCENARIO
05	5%	5%
10	10%	15%
15	18%	25%
20	26%	40%
25	34%	60%
30	42%	75%
35	58%	85%
40	74%	95%
45	84%	100%
50	94%	
55	97%	
60	100%	

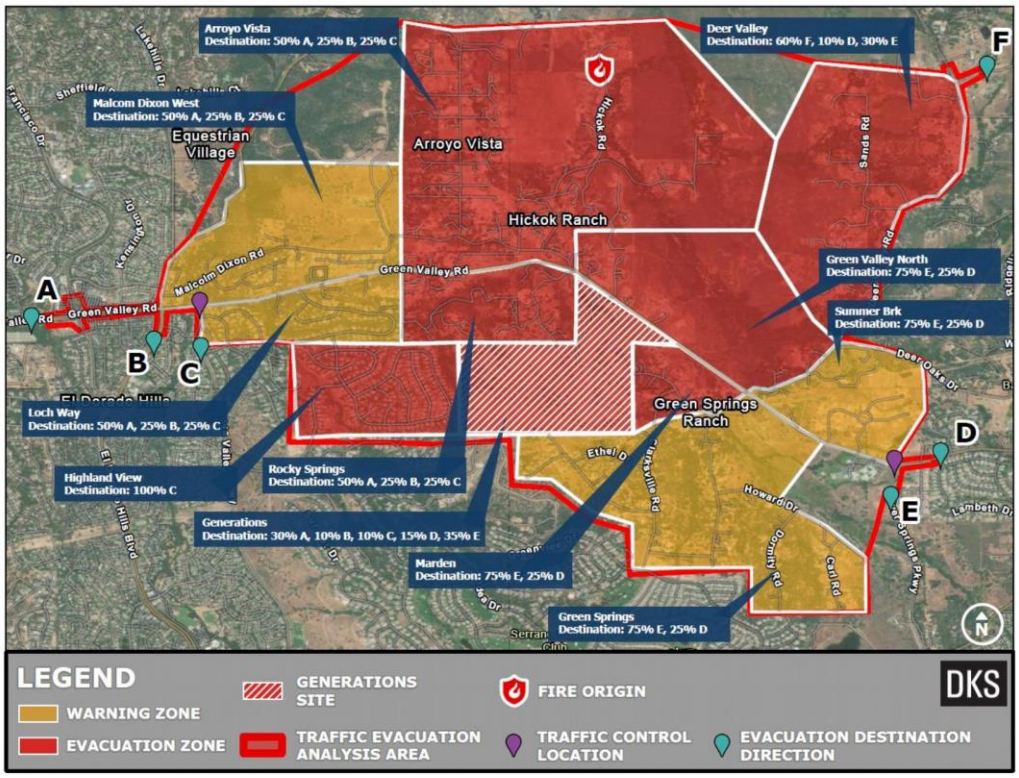


FIGURE 4: GENERATIONS WILDFIRE EVACUATION SCENARIO PARAMETERS

TRAFFIC CONTROL AND BACKGROUND TRAFFIC ASSUMPTIONS

Given the fast-moving fire scenarios with either a 45- or 60-minute evacuation period, traffic control measures are assumed to be in place by emergency responders following an initial response lag time to assist in the evacuation process by restricting background traffic from entering the evacuation area. These traffic control locations are shown with the purple pins in **FIGURE 4**.

1. East Traffic Control Point: Westbound Green Valley Road is closed to all traffic except emergency response and livestock evacuation support vehicles.
2. West Traffic Control Point: Eastbound Green Valley Road is closed to all traffic except emergency response and livestock evacuation support vehicles.

It is assumed that these two traffic control closures for background traffic are in place 20 minutes after the start of the Evacuation Order. No additional traffic control measures are assumed in the evacuation model assumptions.

Replica data was used to estimate weekend afternoon background traffic that will be present at the time of the evacuation along Green Valley Road, Francisco Drive, El Dorado Hills Boulevard, Silva Valley Parkway, and Silver Springs Parkway. Replica uses mobile device data to provide complete trip tables for all modes of travel representing typical weekday and weekend days in the modeled season for resident, worker, visitor, and commercial travel and defines trip characteristics and routing information.

TRANSPORTATION NETWORK

The evacuation model will include a full transportation network inside the warning zones, evacuation zones, and critical junctions to the evacuation destinations as shown in Figure 4. The network includes all street and junction controls, including stop signs, yield signs, traffic signals, and any emergency traffic control elements.

During a wildfire evacuation there are many factors that can influence the capacity of the system that may result in the evacuation traffic not flowing at the same rate as under ideal non-emergency conditions. These factors may include heavy smoke conditions that limit visibility, the presence of emergency response vehicles, and non-typical driver behaviors because of the emergency conditions. To capture these effects, all the model scenarios were analyzed with reduced roadway capacity by approximately 40 percent to capture the worst case of traffic efficiency during a wildfire. This 40 percent reduction in capacity was selected based on the professional judgment of the consultant team. This capacity reduction contributes to congestion patterns that influences both the evacuation route assignment and the evacuation time estimates.

EMERGENCY ACCESS EGRESS ROUTES

In addition to the two primary access/egress connections to Green Valley Road from Generations, there is an Emergency Access/Egress (EAE) Route via Lima Way through the Highland View neighborhood. At the request of local agencies, this analysis considers the evacuation of Generations with just the primary access locations and with both the primary access and EAE at Lima Way open.

All scenarios are evaluated under both 45 and 60 minute evacuation periods. Under the EAE scenarios, 30% of the total Generations evacuation demand is assumed to use the EAE to Aberdeen Lane and Appian Way via Lima Way to access southbound Silva Valley Parkway. During this scenario, 100% of the Highland View evacuation zone is also evacuating concurrently via Appian Way. The Lima Way EAE will be designed to allow one-way emergency public evacuation access via an automated gate. This EAE connection also provides emergency evacuation access egress from the Highland View neighborhood through the Generations development with manual intervention by emergency services, thereby providing an additional evacuation route to benefit the Highland View and surrounding neighborhoods.

WILDFIRE EVACUATION ASSESSMENT

This evacuation assessment detailed for each of the following six scenarios:

1. 60-minute Evacuation without Generations Construction
2. 60-minute Evacuation with Generations Construction and no Lima Way access
3. 60-minute Evacuation with Lima Way EAE
4. 45-minute Evacuation without Generations Construction
5. 45-minute Evacuation with Generations Construction and no Lima Way access
6. 45-minute Evacuation with Lima Way EAE

For each scenario, Evacuation Time Estimates (ETEs) are presented by the accumulated percentage of evacuated trips by time intervals showing the progression of evacuation trips throughout the evacuation period. The ETEs are presented both for evacuation of the Generations zone, the evacuation of Highland View, and the other evacuation zones. Note it is not possible to have 100% of the evacuation trips clear the evacuation zone by the end of the evacuation period as vehicles are modeled leaving within the 40-to-45-minute period and the 55-to-60-minute period after the start of the Evacuation Order and trip lengths often exceed 5 minutes to clear the zone, even without congestion.

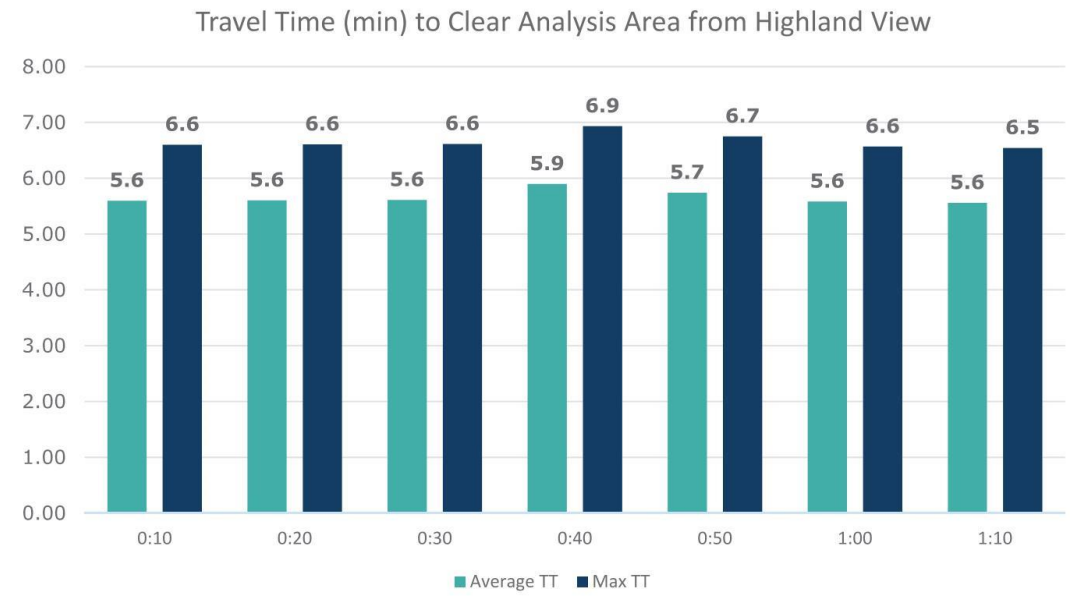
As evacuation route congestion can occur downstream of the evacuation zones, average and maximum travel times are also evaluated from the evacuation zones to the study area destination directions to estimate the time it takes to clear the evacuation vicinity.

In addition, key traffic congestion bottleneck locations are identified by extent and time relative to the evacuation period. Three primary bottleneck locations are described for each scenario:

- Westbound Green Valley Road from Silva Valley Parkway traffic signal
- Eastbound Green Valley Road from Silver Springs Parkway traffic signal
- Northbound Generation Primary Access to Green Valley Road traffic signal

The bottleneck locations and summaries of the ETEs are detailed under a key observations section for each scenario.

60-MINUTE SCENARIO – WITHOUT GENERATIONS CONSTRUCTION



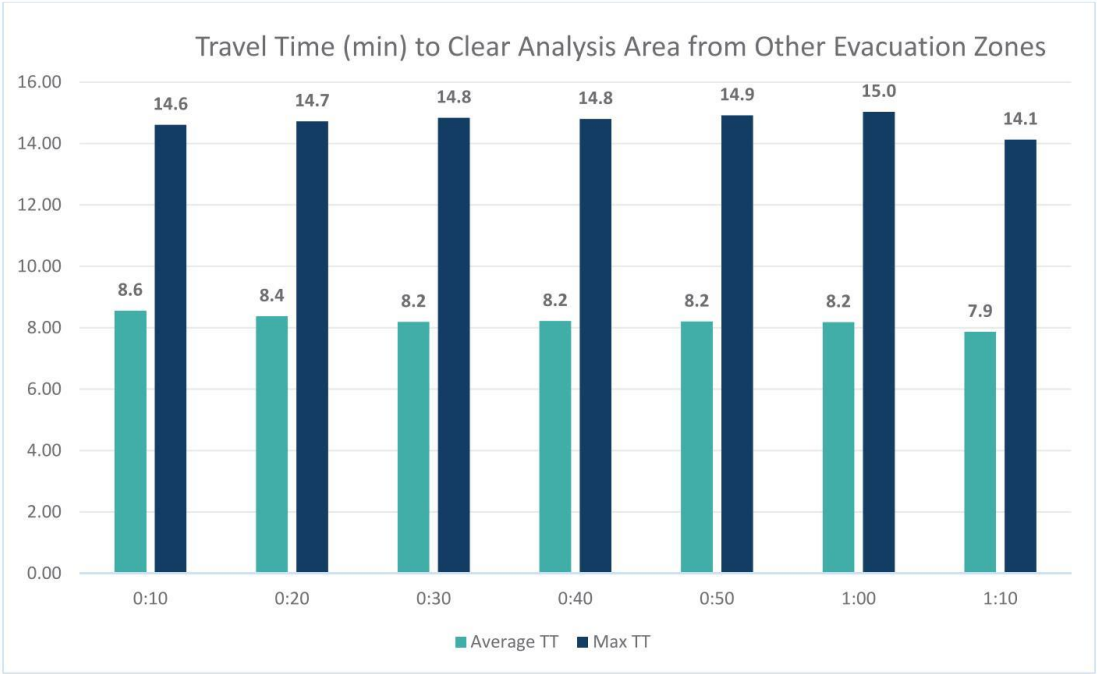


FIGURE 5: 60-MINUTE SCENARIO TRAVEL TIME

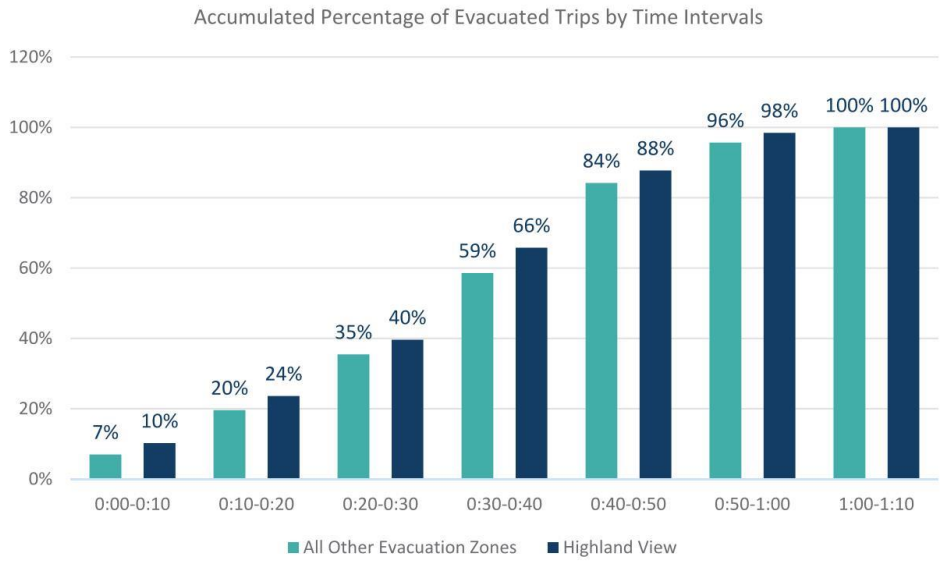
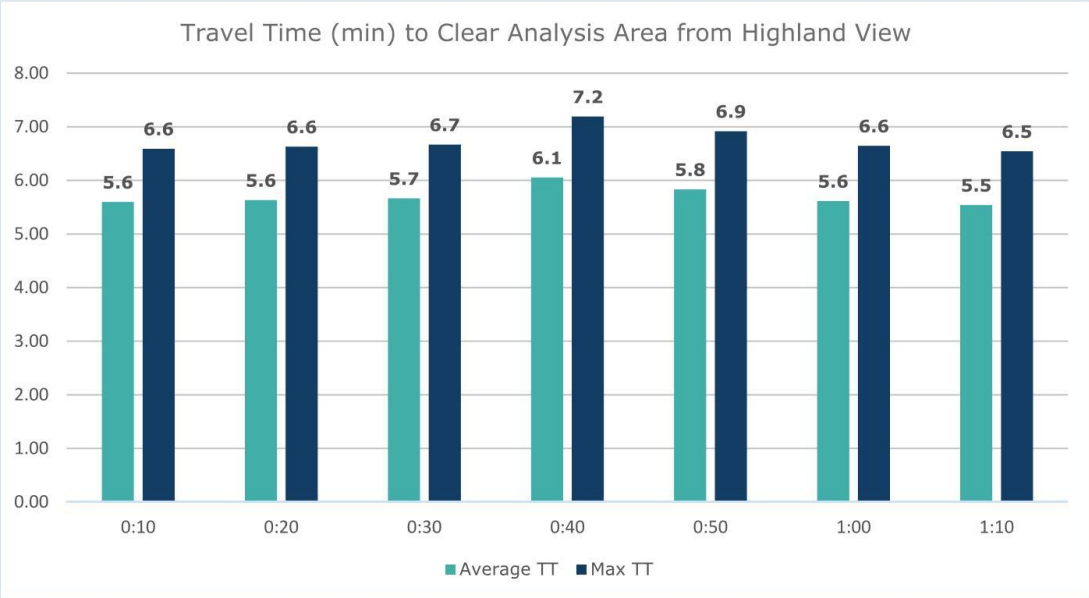


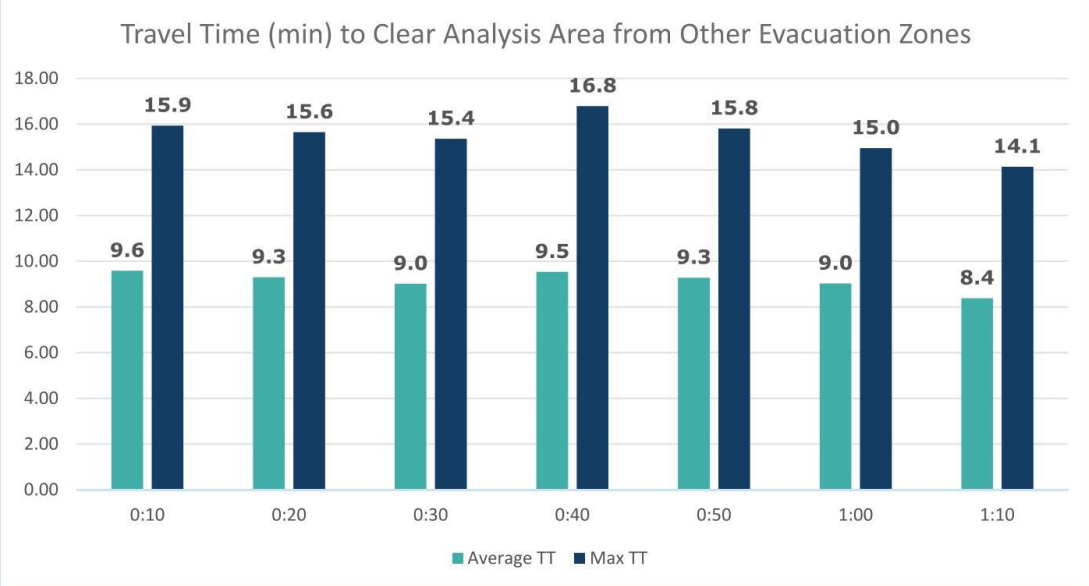
FIGURE 6: 60-MINUTE SCENARIO: ACCUMULATED PERCENTAGE OF EVACUATED TRIPS BY TIME INTERVALS

Key Observations: 60-Minute Without Generations Construction

- Arroyo Vista evacuation trips evacuate west using Malcom Dixon Road directly to Green Valley Road using the Malcom Dixon Cutoff or continue west to Salmon Falls Road. Other evacuation and warning zones access Green Valley Road or Deer Valley Road directly using local streets based on the destination directions described above on Figure 4.
- The peak evacuation trip demand occurs between 40 and 50 minutes after the start of the Evacuation Order.
- During the peak evacuation time interval, it takes an average of 5.9 minutes and a maximum of 6.9 minutes to clear the analysis area departing from Highland View.
- During the peak evacuation time interval, an average of 8.2 minutes and a maximum of 14.9 minutes to clear all other evacuation zones.
- 40 minutes after the start of the Evacuation Order, 66% of Highland View has evacuated the analysis area and 59% of all other evacuation trips have evacuated the same area.
- 60 minutes after the start of the Evacuation Order, 98% of Highland View has evacuated the analysis area and 96% of all other evacuation trips have evacuated the same area.
- 70 minutes after the start of the Evacuation Order 100% of all trips have cleared the evacuation zone.
- The westbound evacuation queue on Green Valley Road from the Silva Valley Parkway traffic signal is the longest at approximately 0.1 miles 10 minutes after the Evacuation Order (The evacuation zone boundary is 0.9 miles from the traffic signal)
- The eastbound evacuation queue on Green Valley Road from the Silver Springs Parkway traffic signal is minimal throughout the Evacuation Order (The evacuation zone boundary is 0.75 miles from the traffic signal)
- All downstream traffic congestion bottlenecks do not extend into the evacuation zone and do not impede evacuation within the evacuation zone.

60-MINUTE SCENARIO – WITH GENERATIONS DEVELOPMENT





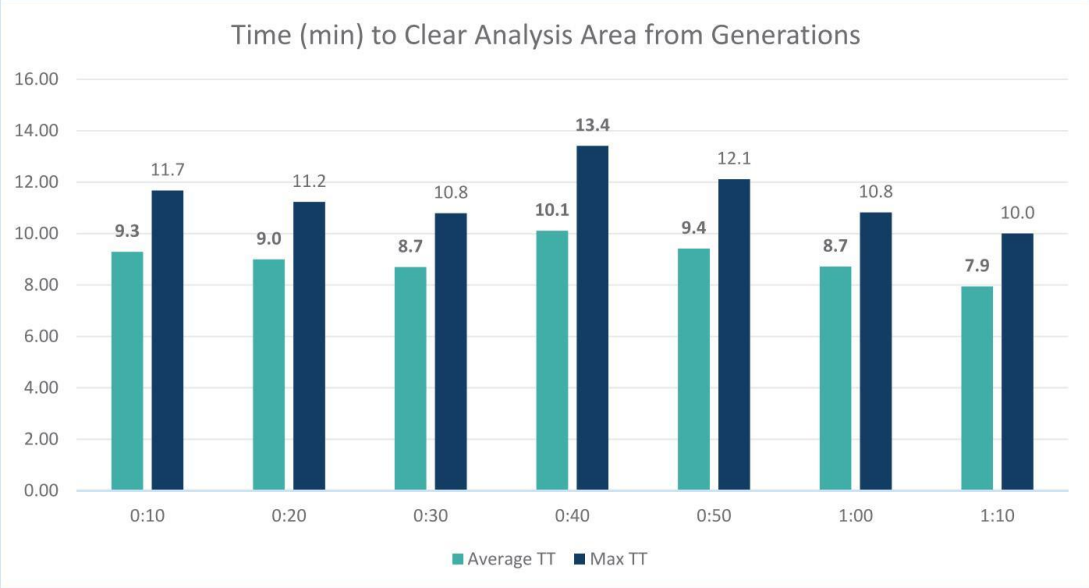


FIGURE 7: 60-MINUTE WITH GENERATIONS CONSTRUCTION SCENARIO TRAVEL TIMES

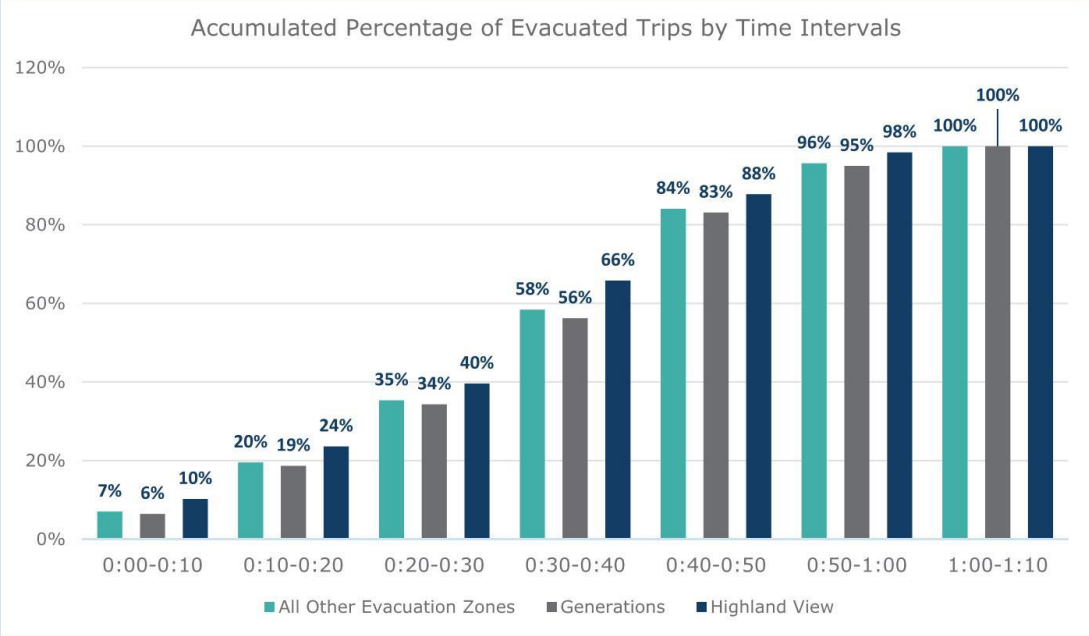
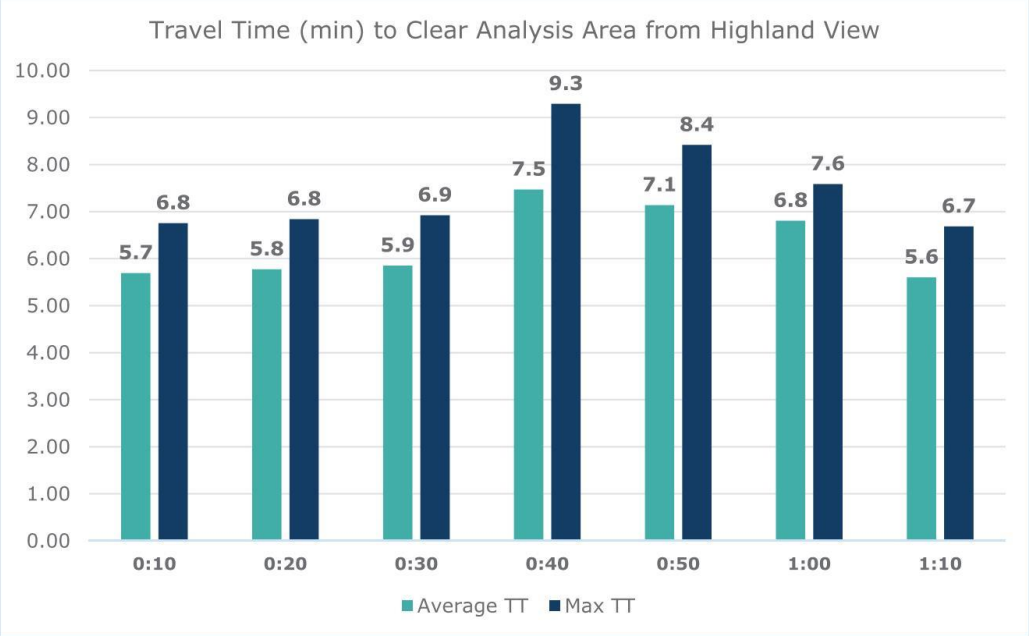


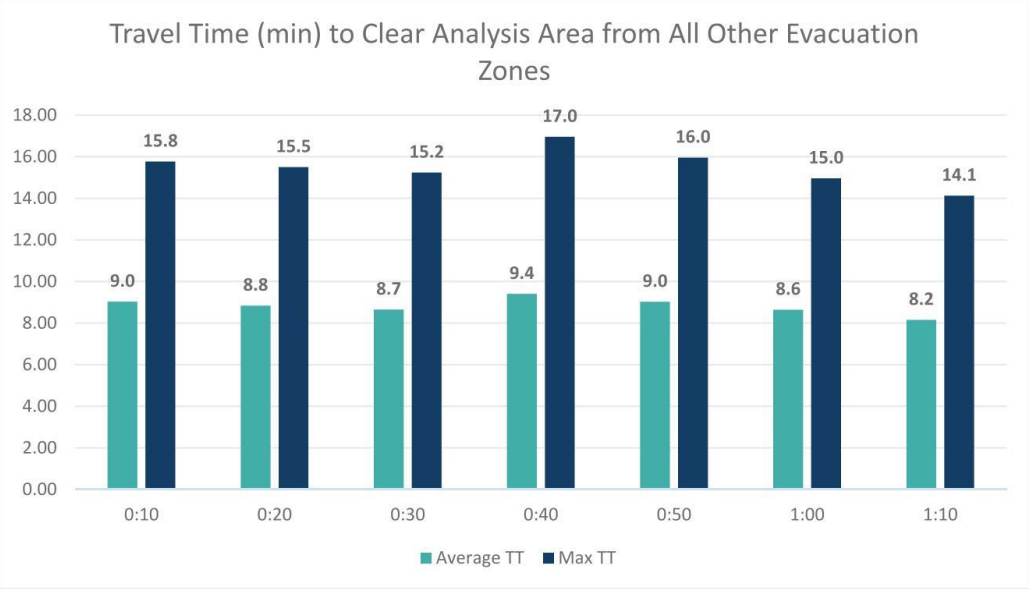
FIGURE 8: 60-MINUTE SCENARIO WITH GENERATIONS CONSTRUCTION: ACCUMULATED PERCENTAGE OF EVACUATED TRIPS BY TIME INTERVALS

Key Observations: 60-Minute – Generations Build Scenario

- Arroyo Vista evacuation trips evacuate west using Malcom Dixon Road directly to Green Valley Road using the Malcom Dixon Cutoff or continue west to Salmon Falls Road. Other evacuation and warning zones access Green Valley Road or Deer Valley Road directly using local streets based on the destination directions described above in the memo.
- The peak evacuation trip demand occurs between 40 and 50 minutes after the start of the Evacuation Order.
- During the peak evacuation time interval, it takes an average of 6.1 minutes and a maximum of 7.2 minutes to clear the analysis area departing from Highland View.
- During the peak evacuation time interval, it takes an average of 9.5 minutes and a maximum of 17 minutes to clear the analysis area from all other evacuation zones.
- These parameters for Highland View are relatively unchanged for the same period between the Build and No Build Scenario. For all other evacuation zones, both the average travel time and maximum travel time increases by around a minute.
- 40 minutes after the start of the Evacuation Order, 56% of the Generations development has evacuated the analysis area, 66% of Highland View, and 58% of all other evacuation trips have also evacuated the area.
- 60 minutes after the start of the Evacuation Order, 95% of the Generations development has evacuated the analysis area, 98% of Highland View, and 96% of all other evacuation trips have evacuated the area.
- 70 minutes after the start of the Evacuation Order 100% of all trips have cleared the evacuation zone, including the Generations zone.
- The construction of the Generations community has minimal impact on the ability of the surrounding area to evacuate within this evacuation scenario.
- The westbound evacuation queue on Green Valley Road from the Silva Valley Parkway traffic signal extends approximately 0.3 miles at 50 minutes after the Evacuation Order (The evacuation zone boundary is 0.9 miles from the traffic signal)
- The eastbound evacuation queue on Green Valley Road from the Silver Springs Parkway traffic signal is minimal throughout the evacuation.
- The southbound evacuation queue exiting the Generations Primary Access from the Green Valley Road traffic signal extends approximately 0.1 miles 20 minutes after the Evacuation Order
- All downstream traffic congestion bottlenecks do not extend into the evacuation zone and do not impede evacuation within the evacuation zone.

60-MINUTE SCENARIO – WITH LIMA WAY ACCESS





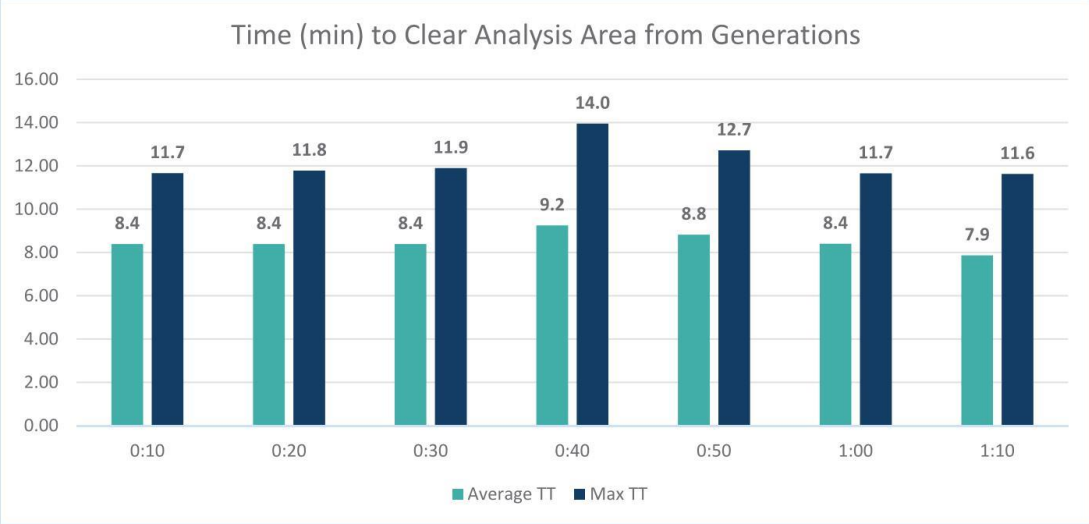


FIGURE 9: 60-MINUTE LIMA WAY ACCESS SCENARIO TRAVEL TIME

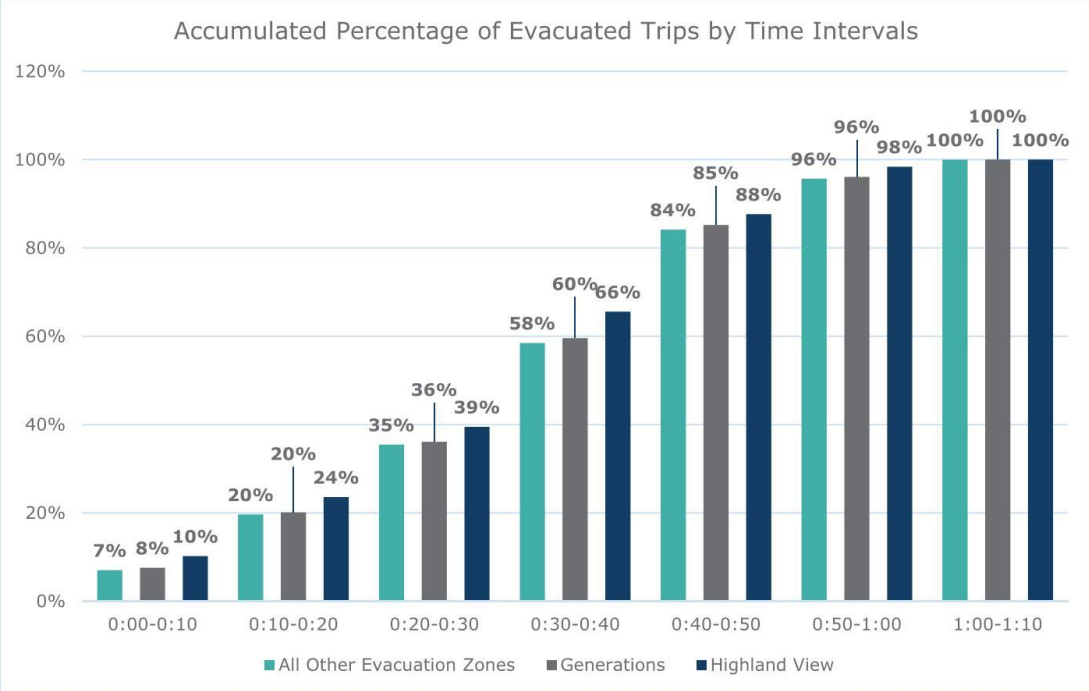
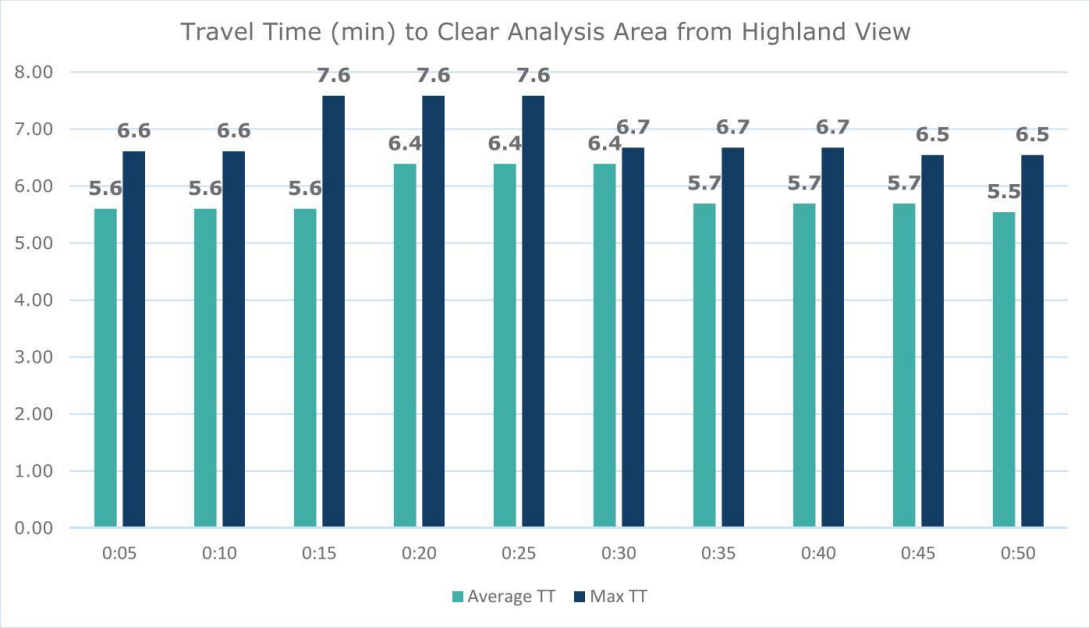


FIGURE 10: 60-MINUTE SCENARIO WITH LIMA WAY ACCESS ACCUMULATED PERCENTAGE OF EVACUATED TRIPS BY TIME INTERVALS

Key Observations: 60-Minute – Lima Way Access Scenario

- Arroyo Vista evacuation trips evacuate west using Malcom Dixon Road directly to Green Valley Road using the Malcom Dixon Cutoff or continue west to Salmon Falls Road. Other evacuation and warning zones access Green Valley Road or Deer Valley Road directly using local streets based on the destination directions described above in the memo.
- The peak evacuation trip demand occurs between 40 and 50 minutes after the start of the Evacuation Order.
- During the peak evacuation time interval, it takes an average of 9.2 minutes and a maximum of 14 minutes to clear the evacuation zone departing from the Generations development area.
- During the peak evacuation time interval, it takes an average of 7.5 minutes and a maximum of 9.3 minutes to clear the evacuation zone from Highland View and an average of 9.4 minutes and a maximum of 17 minutes to clear all other evacuation zones.
- 40 minutes after the start of the Evacuation Order, 60% of the Generations development has evacuated the analysis area, 66% of Highland View, and 58% of all other evacuation trips have also evacuated the area.
- 60 minutes after the start of the Evacuation Order, 96% of the Generations development has evacuated the analysis area, 98% of Highland View, and 96% of all other evacuation trips have evacuated the area.
- 70 minutes after the start of the Evacuation Order 100% of all trips have cleared the evacuation zone, including the Generations zone.
- The construction of the Generations community and its ability to access Lima Way for evacuation purposes has minimal impact on the ability of the surrounding area to evacuate within this evacuation scenario.
- The westbound evacuation queue on Green Valley Road from the Silva Valley Parkway traffic signal extends approximately 0.2 miles at 50 minutes after the Evacuation Order (The evacuation zone boundary is 0.9 miles from the traffic signal)
- The eastbound evacuation queue on Green Valley Road from the Silver Springs Parkway traffic signal is minimal throughout the evacuation.
- The northbound evacuation queue exiting the Generations Primary Access from the Green Valley Road traffic signal extends approximately 0.1 miles 20 minutes after the Evacuation Order
- All downstream traffic congestion bottlenecks do not extend into the evacuation zone and do not impede evacuation within the evacuation zone.

45-MINUTE SCENARIO – WITHOUT GENERATIONS DEVELOPMENT



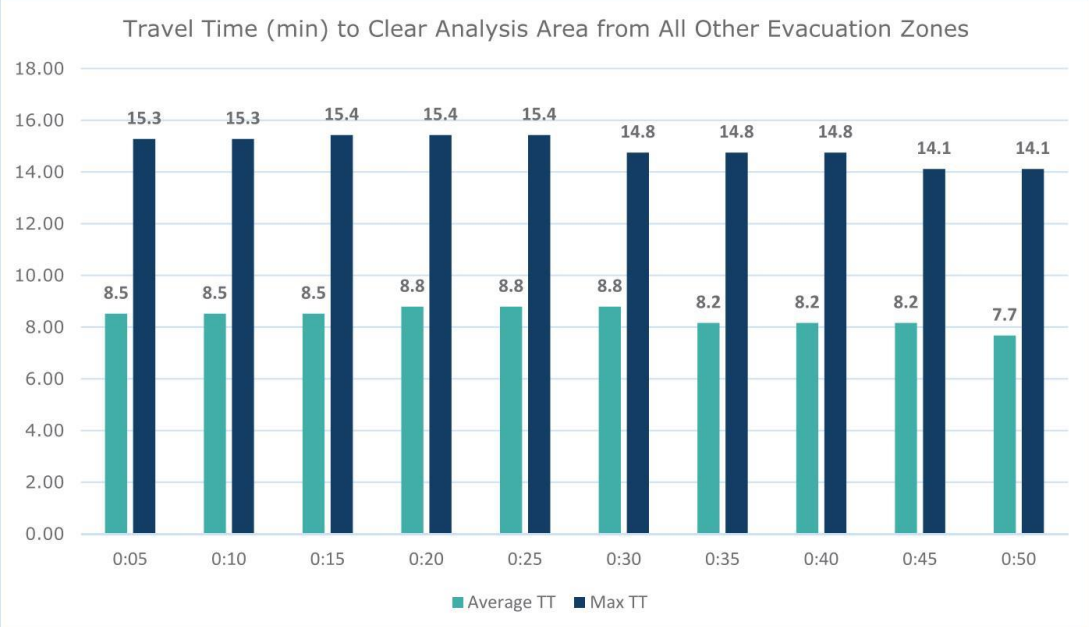


FIGURE 11: 45-MINUTE WITHOUT GENERATIONS CONSTRUCTION

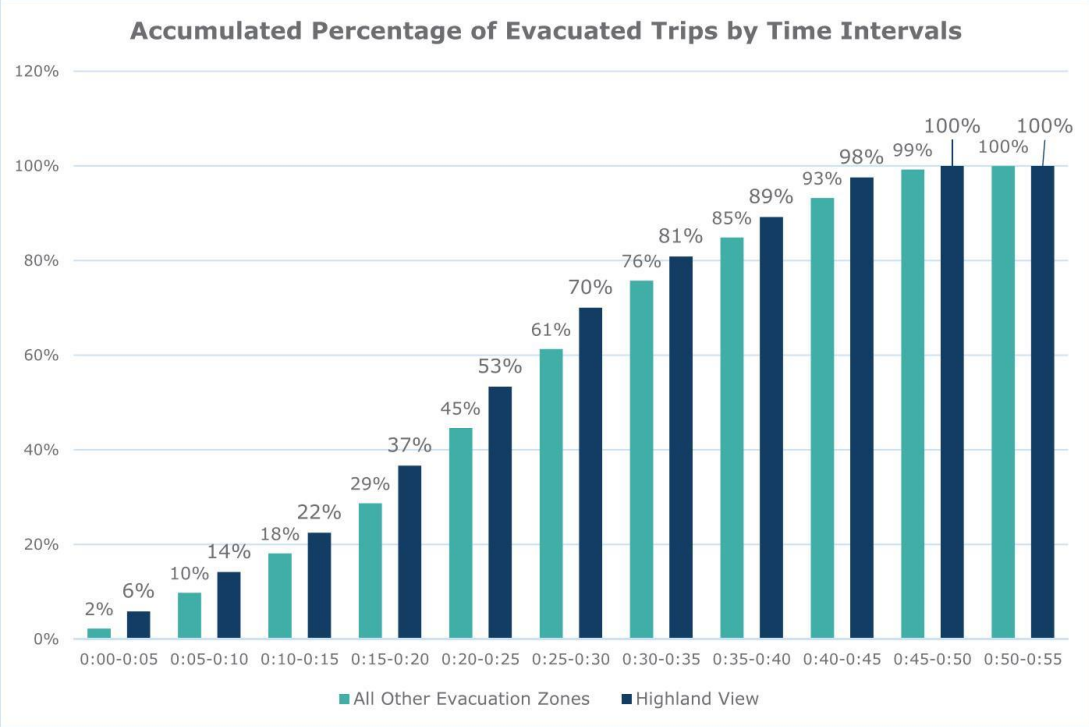
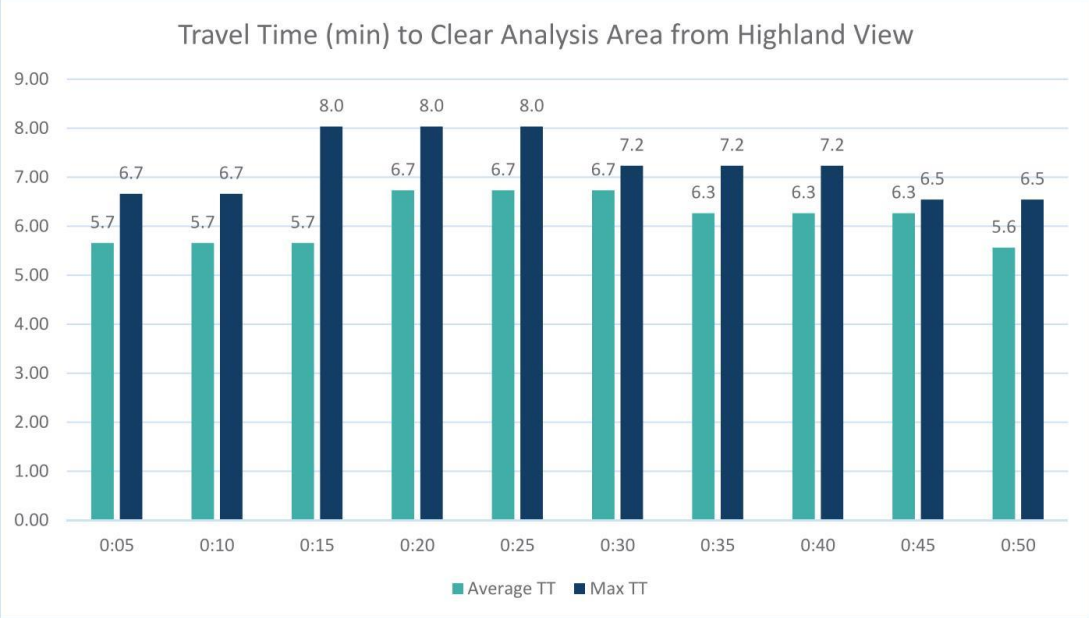


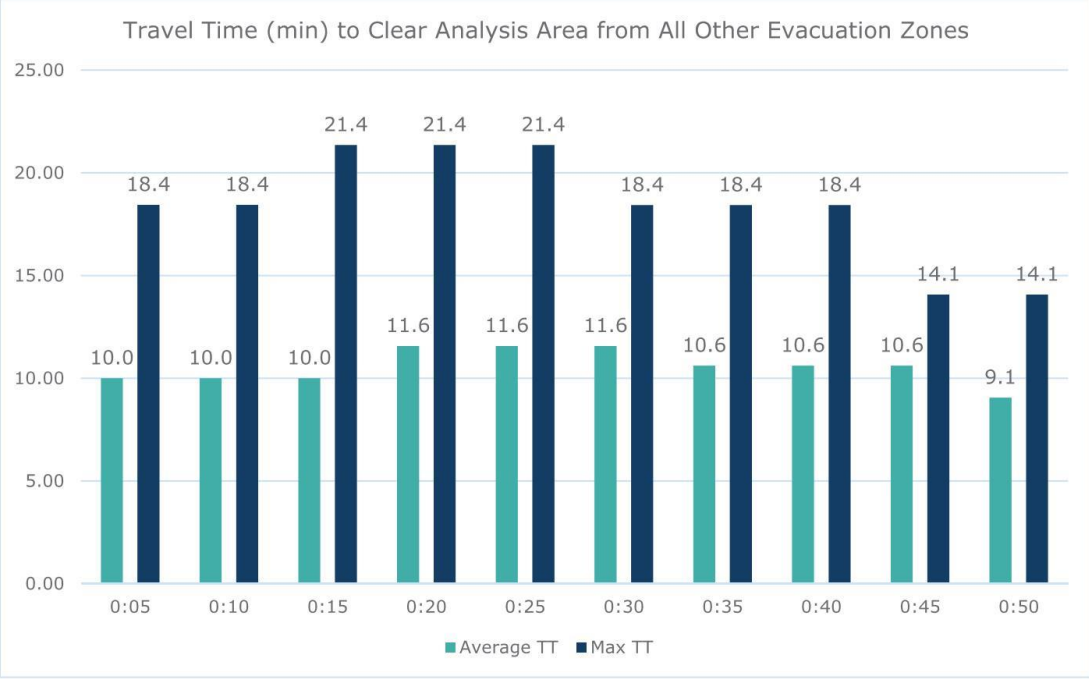
FIGURE 12: 45-MINUTE SCENARIO WITHOUT GENERATIONS CONSTRUCTION: ACCUMULATED PERCENTAGE OF EVACUATED TRIPS BY TIME INTERVALS

Key Observations: 45-Minute – Without Generations Construction

- Arroyo Vista evacuation trips evacuate west using Malcom Dixon Road directly to Green Valley Road using the Malcom Dixon Cutoff or continue west to Salmon Falls Road. Other evacuation and warning zones access Green Valley Road or Deer Valley Road directly using local streets based on the destination directions described above in the memo.
- The peak evacuation trip demand occurs between 20 and 25 minutes after the start of the Evacuation Order.
- During the peak evacuation time interval, it takes an average of 6.4 minutes and a maximum of 7.6 minutes to clear the analysis area departing from Highland View.
- During the peak evacuation time interval, it takes an average of 8.8 minutes and a maximum of 15.4 minutes to clear the analysis area from all other evacuation zones.
- 30 minutes after the start of the Evacuation Order, 70% of Highland View has evacuated the analysis area and 61% of all other evacuation trips have evacuated the same area.
- 45 minutes after the start of the Evacuation Order, 98% of Highland View has evacuated the analysis area and 93% of all other evacuation trips have evacuated the same area.
- 55 minutes after the start of the Evacuation Order 100% of all trips have cleared the evacuation zone.
- The westbound evacuation queue on Green Valley Road from the Silva Valley Parkway traffic signal is the longest at approximately 0.2 miles 20 minutes after the Evacuation Order (The evacuation zone boundary is 0.9 miles from the traffic signal)
- The eastbound evacuation queue on Green Valley Road from the Silver Springs Parkway traffic signal is minimal throughout the Evacuation Order (The evacuation zone boundary is 0.75 miles from the traffic signal)
- All downstream traffic congestion bottlenecks do not extend into the evacuation zone and do not impede evacuation within the evacuation zone.

45-MINUTE SCENARIO – WITH GENERATIONS CONSTRUCTION





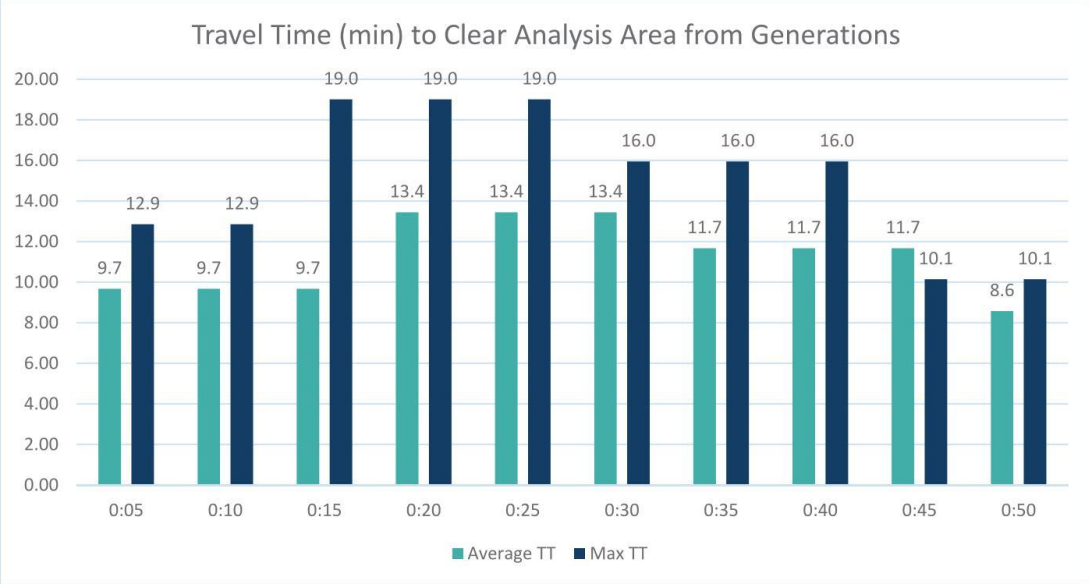


FIGURE 13: 45-MINUTE WITH GENERATIONS CONSTRUCTION

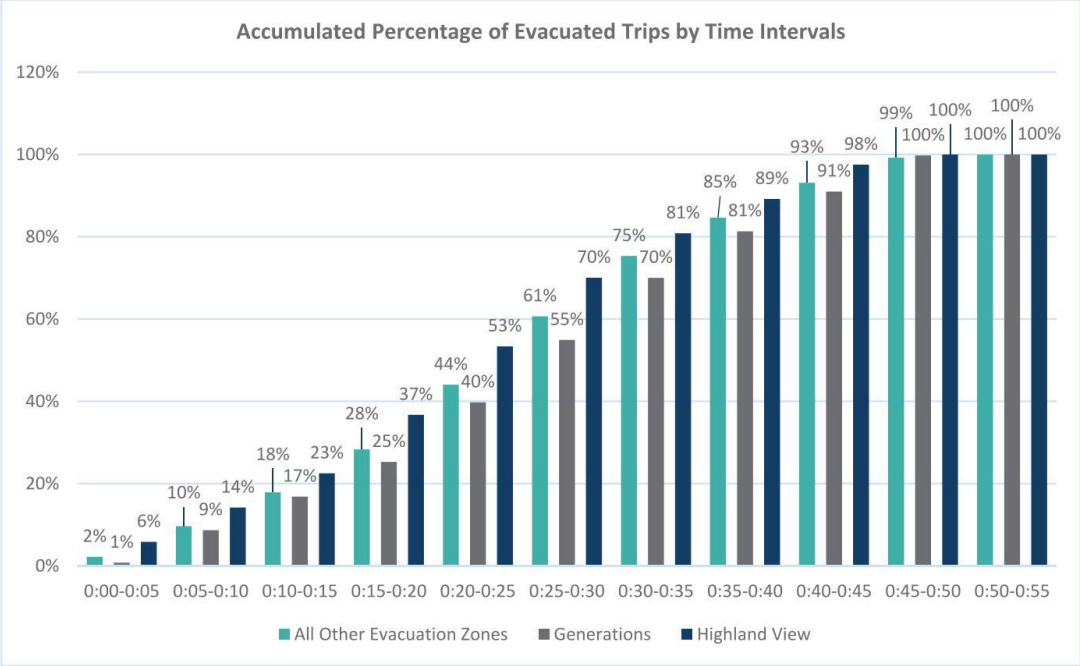
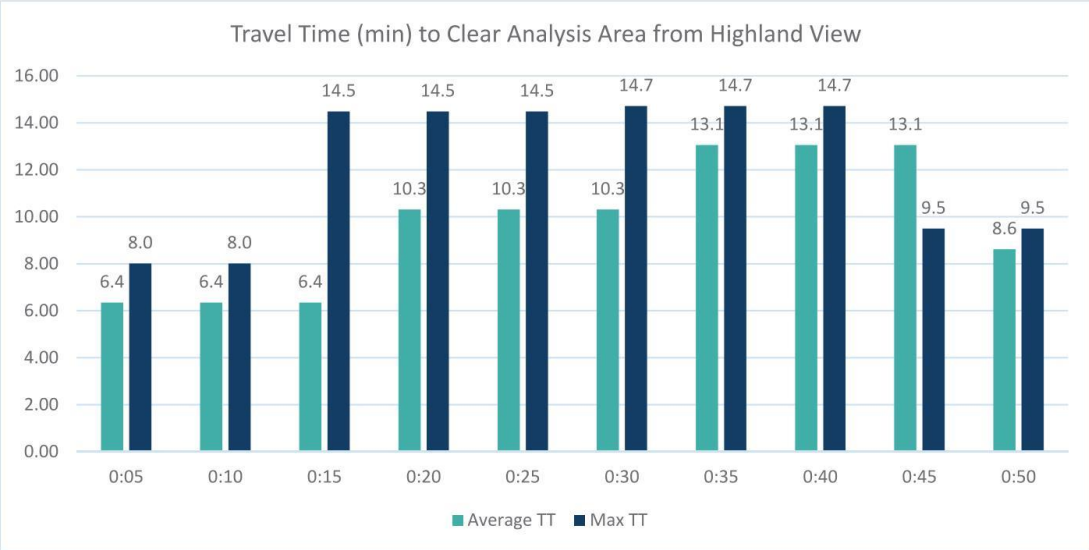


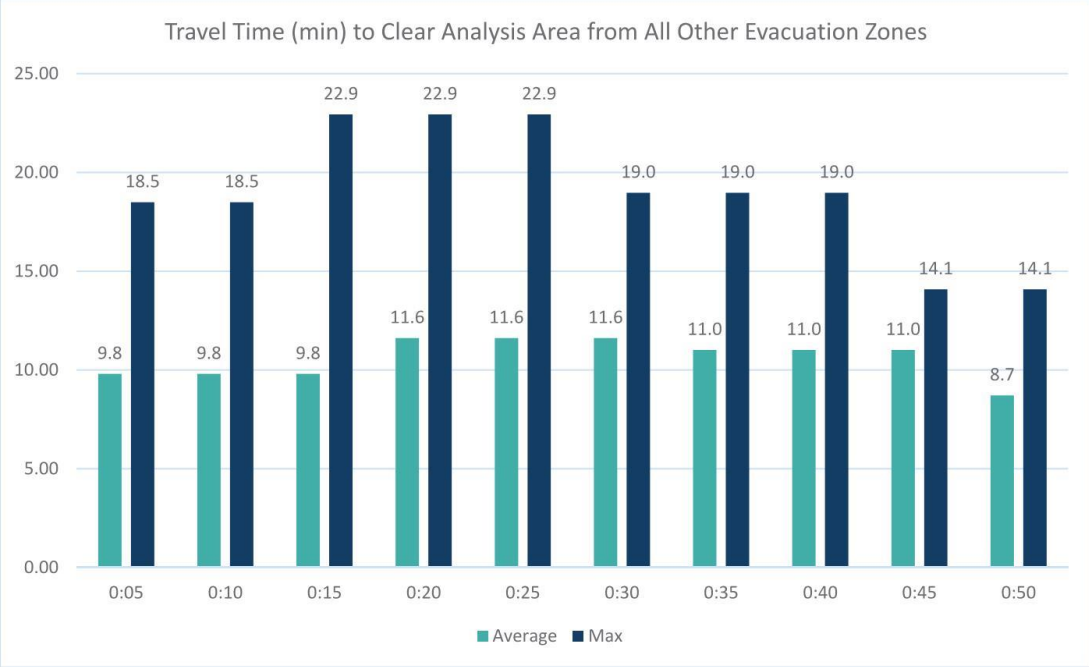
FIGURE 14: 45-MINUTE SCENARIO WITH GENERATIONS CONSTRUCTION: ACCUMULATED PERCENTAGE OF EVACUATED TRIPS BY TIME INTERVALS

Key Observations: 45-Minute – With Generations Construction

- Arroyo Vista evacuation trips evacuate west using Malcom Dixon Road directly to Green Valley Road using the Malcom Dixon Cutoff or continue west to Salmon Falls Road. Other evacuation and warning zones access Green Valley Road or Deer Valley Road directly using local streets based on the destination directions described above in the memo.
- The peak evacuation trip demand occurs between 20 and 25 minutes after the start of the Evacuation Order.
- During the peak evacuation time interval, it takes an average of 13.5 minutes and a maximum of 19 minutes to clear the analysis area departing from Generations.
- During the peak evacuation time interval, it takes an average of 6.7 minutes and a maximum of 8 minutes to clear the analysis area departing from Highland View.
- During the peak evacuation time interval, it takes an average of 11.6 minutes and a maximum of 21 minutes to clear the analysis area from all other evacuation zones.
- 30 minutes after the start of the Evacuation Order, 55% of Generations and 70% of Highland View have evacuated the analysis area and 61% of all other evacuation trips have evacuated the same area.
- 45 minutes after the start of the Evacuation Order, 91% of Generations and 98% of Highland View have evacuated the analysis area and 93% of all other evacuation trips have evacuated the same area.
- 55 minutes after the start of the Evacuation Order 100% of all trips have cleared the evacuation zone.
- The westbound evacuation queue on Green Valley Road from the Silva Valley Parkway traffic signal is the longest at approximately 0.8 miles 35 minutes after the Evacuation Order (The evacuation zone boundary is 0.9 miles from the traffic signal)
- The eastbound evacuation queue on Green Valley Road from the Silver Springs Parkway traffic signal is approximately 0.3 miles 30 minutes after the evacuation order throughout the Evacuation Order (The evacuation zone boundary is 0.75 miles from the traffic signal)
- The southbound queue exiting the Generations Primary Access point is around 0.25 miles long 30 minutes after the evacuation order.
- All downstream traffic congestion bottlenecks do not extend into the evacuation zone and do not impede evacuation within the evacuation zone.

45-MINUTE SCENARIO – WITH ACCESS TO LIMA WAY





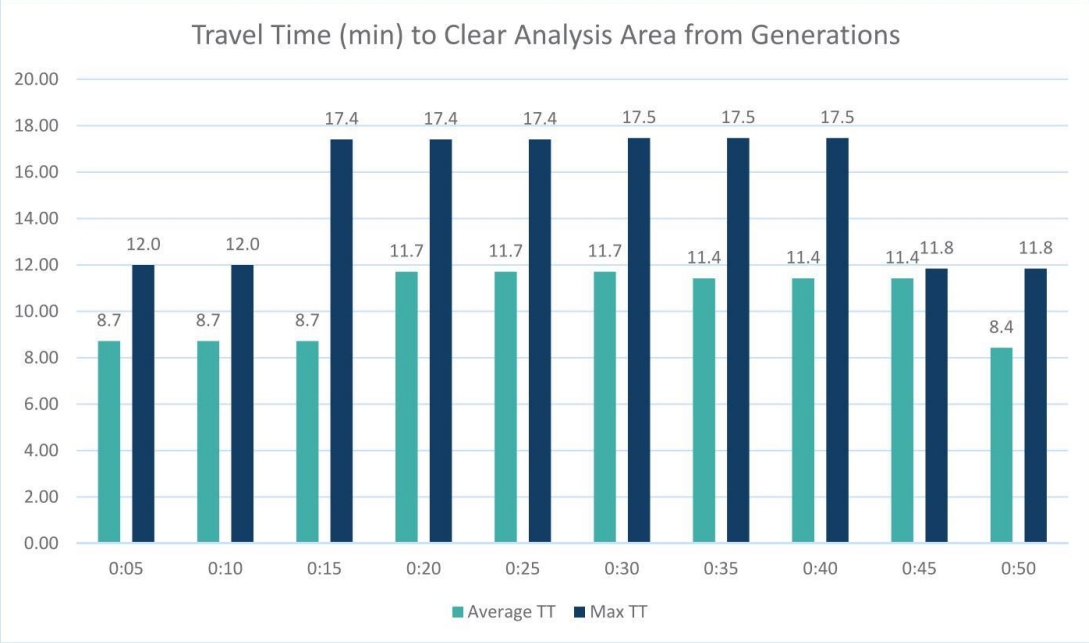


FIGURE 15: 45-MINUTE WITH LIMA WAY ACCESS

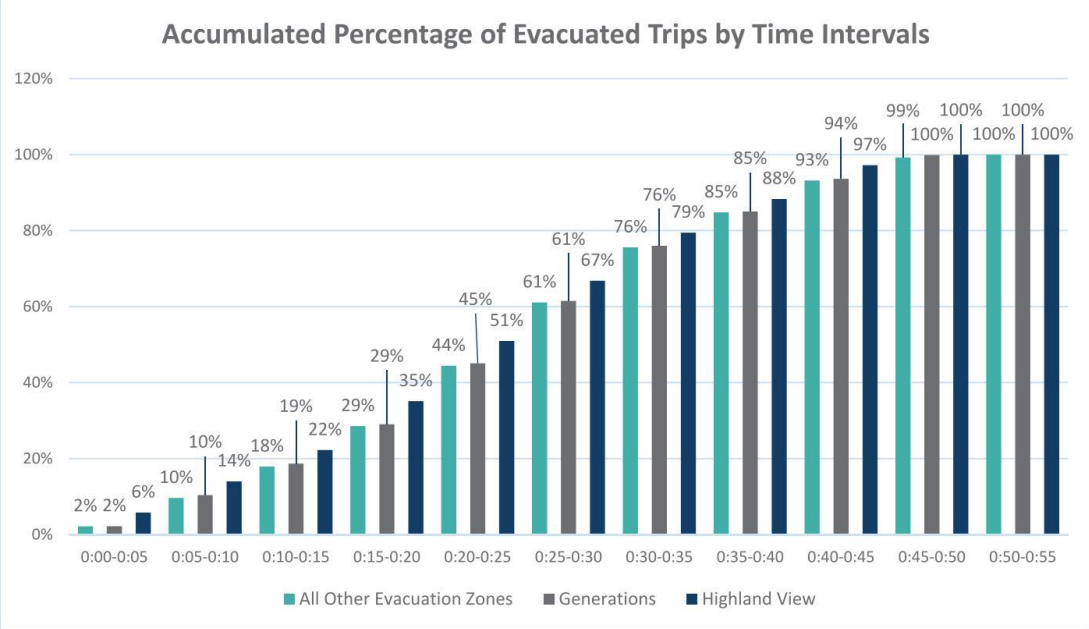


FIGURE 16: 45-MINUTE SCENARIO WITH LIMA WAY ACCESS: ACCUMULATED PERCENTAGE OF EVACUATED TRIPS BY TIME INTERVALS

Key Observations: 45-Minute – With Lima Way Access

- Arroyo Vista evacuation trips evacuate west using Malcom Dixon Road directly to Green Valley Road using the Malcom Dixon Cutoff or continue west to Salmon Falls Road. Other evacuation and warning zones access Green Valley Road or Deer Valley Road directly using local streets based on the destination directions described above in the memo.
- The peak evacuation trip demand occurs between 20 and 25 minutes after the start of the Evacuation Order.
- During the peak evacuation time interval, it takes an average of 11.7 minutes and a maximum of 17.4 minutes to clear the analysis area departing from Generations.
- During the peak evacuation time interval, it takes an average of 10.3 minutes and a maximum of 14.5 minutes to clear the analysis area departing from Highland View.
- During the peak evacuation time interval, it takes an average of 11.6 minutes and a maximum of 23 minutes to clear the analysis area from all other evacuation zones.
- 30 minutes after the start of the Evacuation Order, 61% of Generations and 67% of Highland View have evacuated the analysis area and 61% of all other evacuation trips have evacuated the same area.
- 45 minutes after the start of the Evacuation Order, 94% of Generations and 97% of Highland View have evacuated the analysis area and 93% of all other evacuation trips have evacuated the same area.
- 55 minutes after the start of the Evacuation Order 100% of all trips have cleared the evacuation zone.
- The westbound evacuation queue on Green Valley Road from the Silva Valley Parkway traffic signal is the longest at approximately 0.5 miles 30 minutes after the Evacuation Order (The evacuation zone boundary is 0.9 miles from the traffic signal)
- The eastbound evacuation queue on Green Valley Road from the Silver Springs Parkway traffic signal is approximately 0.3 miles 30 minutes after the Evacuation Order (The evacuation zone boundary is 0.75 miles from the traffic signal)
- The southbound queue exiting the Generations Primary Access point is around 0.2 miles long 25 minutes after the evacuation order.
- All downstream traffic congestion bottlenecks do not extend into the evacuation zone and do not impede evacuation within the evacuation zone.

CONCLUSIONS AND RECOMMEDNATIONS

- The proposed Generations development does not result in significant impact that impedes the evacuation of the development site or increase the total evacuation time estimates of the surrounding evacuation and warning zones as assessed under the parameters defined in this study.
- The use of the Generations Lima Way Evacuation Access/Egress with 30% of the development using the egress through the Highland View Neighborhood does not increase the total evacuation time to clear the Highland View Neighborhood but does slow the evacuation clearance percentage by 3% at the peak evacuation time interval at 30 minutes into the evacuation during the conservative 45-minute scenario.
- Restricting background through traffic on Green Valley Road between Silva Valley Parkway and Silver Springs Parkway during an evacuation event for the Generations and Arroya Vista areas is critical to minimize congestion spilling into the evacuation zone. It is recommended that an emergency traffic control closure be in-place no later than 20 minutes after the start of the evacuation order.
- Evacuation traffic congestion bottlenecks downstream of the evacuation zone stem from capacity limitations at the traffic signals. While these bottlenecks do not result into queuing into the evacuation zone, El Dorado County could further reduce evacuation travel times and or allow additional time before emergency traffic control is in place by investment in a central traffic signal system and communications infrastructure to remotely adjust signal timing parameters for increased vehicle capacity along evacuation routes.
- Additionally Intelligent Transportation System infrastructure improvements that can assist in many different wildfire evacuation scenarios are Pan-Tilt-Zoom (PTZ) installed at traffic signals with remote access to assist agencies and emergency operator monitor and respond to conditions.
- Public Safety Power Shutoffs (PSPSs) can be a strategy used by the utility provider to reduce wildfire risks under extreme weather conditions. These outages can impact traffic signals that have no battery backup system or limited duration systems, resulting in impacts to evacuation operations. Installing traffic signal battery backup systems with sufficient capacity to operate during multi-hour power outages is recommended for traffic signals along evacuation routes.

Appendix M: About the Author

This Fire Safe Plan was prepared in 2023 by Phillips Consulting Services of Georgetown, CA. The author, Ronald A. Phillips, has over 40 years of experience in both fire safety and emergency preparedness. Mr. Phillips served in a variety of positions within the California Fire Service including the position of Fire Chief for the City of Folsom between 2010 - 2016. He has a Bachelor of Science degree in Fire Administration along with several state and national program certificates in specialties such as the emergency management, fire prevention, arson & fire investigation, and the incident command system.

Phillips Consulting Services aids both public and private partners in the following areas of expertise:

Δ POST Incident Analysis & After-Action Reviews
Δ Homeland Security Exercises / Improvement Plans
Δ Emergency Management Planning & Documents
Δ Community Fire & Rescue Master Planning
Δ Special Event Planning
Δ Firewise™ Community Assessments & Plans
Δ WUI Site Assessments
Δ Pre-Incident Planning for First Responders
Δ Fire Code Inspections
Δ Emergency Evacuation Planning & Training