

Esperanza Hills Project

2018 Additional Environmental Analysis

Project No. PA120037
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Prepared For:

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1. Introduction

This 2018 Additional Environmental Analysis (2018 AEA) is prepared on behalf of OC Public Works, Development Services/Planning (County) for the Esperanza Hills Project (Project), Planning Application (PA) No. 120037, to analyze and determine whether the Revised Final Environmental Impact Report (RFEIR) 616 requires any further revisions since the ruling by the Court of Appeal in an unpublished decision on October 13, 2017 in Appeal No. G054185 (Appeal Decision). Following the Appeal Decision, the Orange County Superior Court entered a judgment (Amended Judgment) and issued a Supplemental Writ of Mandate (Supplemental Writ) concerning Final EIR 616 (FEIR 616), State Clearinghouse No. 2012121071 on April 3, 2018 in accordance with the Appeal Decision.

The Supplemental Writ mandated that the County vacate certification of the Revised Final Environmental Impact Report, adoption of the Mitigation Monitoring and Reporting Program and Findings of Fact/Statement of Overriding Considerations made in support of the Project, vacate all approvals of the Project, and revise RFEIR No. 616 to resolve the deficiencies identified by the Court of Appeal in the Appeal Decision. The Amended Judgment was not appealed. Instead, the County has chosen to comply with the Amended Judgment and the Supplemental Writ through the revisions in the RFEIR attached to this 2018 AEA.

The revisions to the RFEIR to comply with the Supplemental Writ are attached to this 2018 AEA as set forth below, and the revised RFEIR is entitled Second Revised Final EIR (SRFEIR).

2. Court Proceedings and County Review Process

The County certified FEIR 616 on March 10, 2015 and on June 2, 2015 approved the Project with various entitlements including a General Plan Amendment, a Zone Change, and a Specific Plan. Following the County's certification of FEIR 616 and the County's approval of the Project, a Petition for Writ of Mandate was filed in Orange County Superior Court (Case No. 30-2015-00797300-CU-TT-CXC) on July 7, 2015 by Protect Our Homes and Hills for Everyone, Endangered Habitats League, California Native Plant Society, and Friends of Harbors, Beaches and Park, Inc. (Petitioners), challenging the adequacy of the FEIR, alleging 30 separate deficiencies.

Judge William Cluster issued a Statement of Decision on June 24, 2016 (Statement of Decision), finding that 29 of the 30 alleged deficiencies were "without merit," and deeming the FEIR adequate on every issue but Greenhouse Gas Emissions (GHG) mitigation.

The Court entered a Judgment and Writ on August 24, 2016 (2016 Judgment and Writ), which ordered that the County vacate certification of the FEIR, adoption of the Mitigation Monitoring and Reporting Program and Findings of Fact/Statement of Overriding Considerations made in support of the Project, vacate all approvals of the Project, and revise the FEIR to resolve the deficiencies identified by the Court in its Statement of Decision. Petitioners filed an appeal to the trial court ruling arguing that the trial court erred in not finding the FEIR inadequate in other respects. In accordance with the 2016 Judgment and Writ, the Board of Supervisors vacated all entitlements on December 13, 2016.

To comply with the 2016 Judgment and Writ, Section 5.6, Greenhouse Gas Emissions, of the FEIR was revised, and the RFEIR was certified to incorporate 40 specific GHG mitigation measures and project design features as new mitigation measures to achieve a 7.93% reduction in project-specific construction and operational greenhouse gas emissions. In accordance with the 2016 Judgment and Writ, the new mitigation measures required the County's review of and compliance with the 40 GHG mitigation measures to occur *prior* to the issuance of a precise grading permit instead of *prior* to initial occupancy of any on-site facility. This 7.93% reduction is in addition to the anticipated 23.9% reduction resulting from state regulations developed in compliance with AB 32.

After review of the RFEIR and the amended Specific Plan, which modified proposed Access Option 1 as described in the Project Description of the FEIR into Option 1A, the County, acting in its capacity as Lead Agency, determined that no additional environmental review was required for the modification of the Specific Plan to Access Option 1A, as set forth in an Additional Environmental Analysis Memorandum prepared for the County by CAA Planning dated February 21, 2017.

The County also determined that recirculation of the RFEIR was not required, because the 2016 Judgment and Writ rejected Petitioner's arguments that the FEIR required recirculation (Statement of Decision, pages 32-33) and because the revisions to the GHG section of the FEIR and applicable mitigation measures did not constitute new significant information that demonstrated a new significant impact or a substantial increase in the severity of the impact.

The County certified the RFEIR, and approved the Specific Plan, the Mitigation and Monitoring Program, the Findings of Fact/Statement of Overriding Considerations, and all other approvals for the Project on May 9, 2017. Following the County's submittal of documentation demonstrating that the County had complied with the 2016 Judgment and Writ, the trial court discharged the Writ on October 6, 2017.

However, on October 13, 2017, the Court of Appeal issued the Appeal Decision on Petitioner's appeal of the Judgment, finding that the RFEIR was inadequate in three respects beyond the original GHG deficiency identified by the Orange County Superior Court on June 24, 2016: 1) the project description and the environmental setting relating to Chino Hills State Park (CHSP) were inaccurate, especially as it related to maps identifying the location of CHSP; 2) the Community Evacuation Plan

mitigation measure constituted improper deferral; and 3) water supply and demand analysis did not accurately calculate the total demand for all aspects of the project. The Court of Appeal affirmed the trial court's rulings on the FEIR's emergency evacuation analysis, which included Option 1, biological analysis including gnatcatchers and special plant species, and the County's decision not to recirculate the FEIR.

3. Environmental Analysis

The County will de-certify the RFEIR prior to consideration of the SRFEIR, which consists of the revisions described below in Sections 4, 5, and 6, and which also includes this 2018 AEA. The County reviewed *California Code of Regulations*, Title 14, Chapter 3 (CEQA Guidelines) §15088.5 – Recirculation of an EIR Prior to Certification, to determine whether the revisions made to the RFEIR by the SRFEIR required recirculation. Section 15088.5 provides:

- 15088.5 (a) A lead agency is required to recirculate an EIR when significant new information is added to the EIR after public notice is given of the availability of the draft EIR for public review under Section 15087 but before certification. As used in this section, the term "information" can include changes in the project or environmental setting as well as additional data or other information. New information added to an EIR is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment upon a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect (including a feasible project alternative) that the project's proponents have declined to implement. "Significant new information" requiring recirculation include, for example, a disclosure showing that:
- (1) A new significant environmental impact would result from the project or from a new mitigation measure proposed to be implemented.
 - (2) A substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.
 - (3) A feasible project alternative or mitigation measure considerably different from others previously analyzed would clearly lessen the environmental impacts of the project, but the project's proponents decline to adopt it.
 - (4) The draft EIR was so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded. (Mountain Lion Coalition v. Fish and Game Com. (1989) 214 Cal.App.3d 1043)
- (b) Recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR.
- (e) A decision not to recirculate an EIR must be supported by substantial evidence in the administrative record.

As noted above, both the 2016 Judgment and Writ and the Appeal Decision rejected Petitioners' arguments that recirculation was required on any portion of the FEIR, and all portions of the FEIR and the RFEIR are now deemed adequate with the exception of the three deficiencies noted in the Appeal Decision and identified above. The changes made to the RFEIR by the SRFEIR, which are attached to this 2018 AEA, do not meet the criteria for recirculation under CEQA §15088.5, because no new environmental impacts result and no environmental impacts are made more severe. The Judgment determined the FEIR adequate with the exception of the GHG mitigation section, which was revised in the RFEIR, and the Writ was discharged.

The SFREIR would only be required to be recirculated under §15088.5 if a new significant environmental impact results from the changes to the project or from a new mitigation measure proposed to be implemented, or a substantial increase in the severity of an environmental impact would result unless mitigation measures are adopted that reduce the impact to a level of insignificance.

The revisions now being made as a result of the Appeal Decision, Amended Judgment and Supplemental Writ, consisting of additional analysis and history, clarifications, updated maps, updated tables, amplifications and other corrections to the RFEIR:

- Do not result in new significant environmental impacts, as no new environmental impacts have been identified. The amplification of mitigation measures in the Community Evacuation Plan (CEP) deal with the internal evacuation of the Project site, and will not affect or impact the evacuation analysis or plans for the surrounding community, which was approved by both the original Judgment and the Appeal Decision. The revision of the maps relating to CHSP and the discussion relating to changes made in the Project as a result of meetings with State Park personnel relating to CHSP show that the Project made design changes to accommodate CHSP at the request of State Park personnel, and further demonstrate that the Project's effect on CHSP was fully analyzed in the RFEIR. The detailed water use analysis demonstrates that the Project will use less water than was projected in the Northeast Area Planning Study (NEAPS) approved by the Yorba Linda Water District, and the NEAPS was fully analyzed in the FEIR and RFEIR.
- Do not result in a substantial increase in the severity of an environmental impact requiring mitigation measures that reduce the impact because no new or more significant impacts would result from the revisions made to the FEIR or the RFEIR by the SRFEIR. The CEP Mitigation Measures are project specific and do not result in new or more significant impacts to the evacuation analysis for Option 1 approved in both the Judgment and the Appeal Decision.
- Do not include a feasible project alternative or mitigation measure considerably different from others previously analyzed that the Project's proponents declined to adopt. The SRFEIR does not include a feasible project alternative or any mitigation measures that the Project's proponents have declined to adopt.

- Do not result in a Draft EIR that is so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment were precluded. The FEIR was analyzed by both the Orange County Superior Court and the Court of Appeal; both courts found fault only with specific issues as noted above. In addition, the Orange County Superior Court determined that the revisions to the GHG section of the RFEIR were adequate and that recirculation of the RFEIR was not required. The decisions of the Orange County Superior Court and the Court of Appeal show that the public has been given an opportunity to review both the FEIR and the RFEIR and to respond through the County's public hearing process, which is duly noticed to all agencies and interested parties. The revisions made to the FEIR and the RFEIR by the SRFEIR deal only with the specific sections relating to the description and analysis of CHSP, water use, and the CEP, none of which will result in the SRFEIR being so fundamentally and basically inadequate and conclusory in nature that meaningful public review and comment are precluded.

Therefore, in response to the Appeal Decision and Supplemental Writ requiring clarification and amplification of specific mitigation for the Project's CEP, analysis of CHSP and correction of maps and description, and analysis of water use and demand, revisions to the RFEIR by the SRFEIR do not meet the CEQA criteria for recirculation.

4. Revision to CHSP Analysis in the SRFEIR

The SRFEIR was revised from the FEIR and the RFEIR by expanding the analysis for CHSP in RFEIR Section 4.2 – Existing Conditions as contained in Attachment A hereto that details the revisions. This revised information is inserted at the end of the text at page 4-2 of the RFEIR.

All maps relating to CHSP were revised and are provided in Attachment B hereto. Attachment B provides Table 4.2.2 – References to Chino Hills State Park, which provides a cross reference of the revised maps to the RFEIR chapter and section number.

Table 5-9-19 – Chino Hills State Park General Plan Consistency in Chapter 5, Section 5.9.4 in subsection 10, at page 5-466 was revised as shown on Attachment C hereto.

All emails between the Project Applicant, State Park Personnel, and County personnel referred to in RFEIR Section 4.2 are contained in Attachment D hereto.

5. Revision to Water Demand Analysis in the SRFEIR

The SRFEIR was revised from the FEIR and the RFEIR by including specific analysis of the water use for all aspects of the Project (construction, mitigation, domestic and landscape) added to Chapter 5, Section 5.15.3 in subsection 1(d) at page 5-656 of the RFEIR and contained in Attachment E hereto. The letters from consultants consisting of engineers, landscape architects, residential construction builders and biologists documenting the estimates for the water use are contained on Attachment F hereto.

6. Revision to Project Community Evacuation Plan in the SRFEIR

The SRFEIR was revised from the FEIR and the RFEIR by expanding the analysis in Chapter 5, Section 5.7.4 Subsection 1(i) at page 5-336 as contained in Attachment G hereto. New Mitigation Measures MM Haz-15 through MM Haz-31 contained in Section 2 of the CEP (Attachment G) are added to the RFEIR in Section 5.7.6 following MM Haz-14 at page 5-356. In addition, the new mitigation measures are added to Chapter 2, Section 2.5 following MM Haz-14 at page 2-20. The Orange County Fire Authority, Fire Master Plans for Commercial and Residential Development, Guideline B-09 is contained in Attachment H hereto, and the Orange County Fire Authority, Fire Safe Development in State Responsibility Areas, Guideline B-09a is contained in Attachment I hereto.

7. Conclusion

The County has analyzed the changes required by the Appeal Decision and other changes made to the FEIR and the RFEIR by the SRFEIR as set forth in this 2018 AEA.

Attachments A, E, G, H, and I to this 2018 AEA are additions and/or revisions to the RFEIR made by the SRFEIR in the sections set forth above. Attachment B comprises map revisions made to the RFEIR and each map is labeled and replaces the map in RFEIR. Attachment C is an updated Table 5-9-19 – Chino Hills State Park General Plan Consistency that replaces Table 5-9-19 in the RFEIR. Attachments D and F are supporting documents that are incorporated into the SRFEIR.

8. Attachments

Included as attachments hereto are:

- Attachment A – Revision to Section 4.2, Existing Conditions, Second Revised FEIR on Chino Hills State Park
- Attachment B – Revised Maps depicting Location of Chino Hills State Park
- Attachment C – Revised Table 5-9-19 - Conformance with Chino Hills State Park General Plan
- Attachment D – Emails Between Applicant and State Park Personnel re Chino Hills State Park
- Attachment E – Revision to Section 5.15, Utilities and Service Systems, Second Revised FEIR on Water Demand Analysis
- Attachment F – Letters from Consultants Regarding Water Use
- Attachment G – Revision to Section 5.7, Hazards and Hazardous Materials, Second Revised FEIR on Community Evacuation Plan
- Attachment H – Orange County Fire Authority, Fire Master Plans for Commercial and Residential Development, Guideline B-09
- Attachment I – Orange County Fire Authority, Fire Safe Development in State Responsibility Areas, Guideline B-09a

Attachment A
Revision to Section 4.2, Existing Conditions,
Second Revised FEIR on Chino Hills State Park

1. Court of Appeal's Decision in *Protect Our Homes and Hills v County of Orange*

The California Court of Appeal, Fourth Appellate District, Division Three, issued an unpublished opinion on October 13, 2017 (Appeal No. G054185) that concluded the original Final Environmental Impact Report (FEIR) certified on June 2, 2015 was deficient with respect to its discussion of Chino Hills State Park (CHSP), which is a surrounding land use to the north and east of the Project.

The Court of Appeal detailed the specific deficiencies with respect to the FEIR's description of CHSP on page 10 of its opinion, stating:

Here, the DEIR identifies the Project site as being "bordered by Chino Hills State Park on the north and east," a description carried forward from the Initial Study and Notice of Preparation for the Project. The same "north" and "east" descriptors are used through the other chapters of the Draft EIR. Occasionally, the Draft EIR uses the inverse description, identifying the Project site as being located to the south and west of CHSP.

Although these directional descriptors are generally accurate in describing the location of the Project site to CHSP, commenters reviewing the Draft EIR noticed the document included inaccurate acreage data and inaccurate maps of CHSP. Specifically, the Draft EIR understated the acreage of CHSP by roughly 2,300 acres, and the inaccurate maps showed CHSP lying north and east of only the northern portion of the Project Site, whereas CHSP actually borders the entire northern and eastern boundaries of the Project. The California Department of Parks and Recreation, the agency responsible for managing CHSP, noted the "incorrect boundary and vital statistics[,] provided the correct park acreage and map, and requested the County "revised all map boundaries and discussions regarding [CHSP]."

In response to the public comments, the County made a global revision to the acreage of CHSP, modifying it from the inaccurate 11,770 acres included in the Draft EIR to the accurate 14,100 acres. However, no similar broad revision was made to the maps. Rather, only two of the maps were modified to update CHSP's boundaries. The majority of the maps in the Final EIR, including the "[p]roject [v]icinity [m]ap," remained unchanged and still inaccurately depicted the area of CHSP lying to the east of the Project site."

The Court of Appeal concluded that:

Failing to identify a significant portion of CHSP as being located immediately to the east of the southern half of the Project site makes it impossible to analyze, for example, the full scope of the Project's potential indirect impacts on CHSP's biological resources. While it may turn out that potential impacts related to the omitted area of CHSP are no different than those revealed in the FEIR, the

investigation, analysis, disclosure and mitigation steps are vital." (*Slip opinion at page 11.*)

To cure the deficiencies identified by the Court of Appeal, Orange County, as lead agency, has revised the FEIR for the Esperanza Hills project (Project) so that the investigation, analysis, disclosure, and mitigation related to CHSP undertaken by the Project Applicant and County are detailed herein. This new text provides detailed historical and background information regarding CHSP and describes the map revisions made in response to the Court of Appeal's decision. The additional information presented herein details meetings and communications with State Park personnel and steps taken relating to mitigating potential impacts on CHSP preceding the County Board of Supervisors' approval of the Project. This discussion makes it clear that, although the FEIR, as the Court of Appeal notes, included a number of inaccurate maps, both the County and the Applicant were fully aware of the correct boundaries of CHSP in relation to the Project's site boundaries long before Project approval. This discussion makes clear that, despite the mapping deficiencies identified by the Court of Appeal, the environmental impact analysis conducted for the project was done with full knowledge of the correct boundaries of CHSP. In particular, the text addresses in detail the reasons the conclusions in this Second Revised Final EIR (SRFEIR) on subjects such as aesthetics, biological resources, and fire hazards remain unchanged, notwithstanding the Court of Appeal's decision and the resulting modifications made to various maps.

2. CHSP Historical Background and Characteristics

After the Spanish founded Mission San Gabriel in 1771, the Chino Hills were used extensively for grazing by mission cattle. During the Mexican Republic era, the Chino Hills were used as spillover grazing from such surrounding Mexican ranchos as Santa Ana del Chino and La Sierra Yorba. After Mexico ceded California to the United States in 1848, the land was still used primarily for grazing.

Private land acquisition began in the 1870s and continued into the 1890s. In 1948, the 1,720-acre Rolling M Ranch was established, and the land was leased to nearby landowners for cattle grazing. Some late nineteenth and early twentieth century oil exploration and mining activity also took place in the northwestern section of what is now the park. A ranch house, a barn, and several windmills and watering troughs serve as reminders of the cattle ranching days.

In 1977, the California Legislature passed a resolution directing California State Parks to conduct a study about acquiring Chino Hills land for park purposes. A local citizens group, Hills for Everyone, worked closely with California State Parks and the Legislature to create the park with an initial acquisition of 2,237 acres. In 1982, Hills for Everyone entered into a lease agreement with the Department of General Services to manage the land involved in the early acquisitions until the Department of Parks and Recreation was ready to assume management responsibility. In 1983, Hills for

Everyone opened the area to the public on a limited basis and managed the property until 1984. In 1984, the State Park and Recreation Commission officially declared the area a unit of the State Park System. Since that date, numerous land acquisitions from various private landowners have expanded the park to its present acreage.¹

CHSP is now an approximate 14,100-acre² unit of the California State Park System situated in the counties of Orange, Riverside, and San Bernardino as shown on revised Exhibit 5-2, Chino Hills State Park Location Map.

The purpose of CHSP, as stated in its General Plan, is to preserve the natural, cultural, and scenic resources of the rolling hills, the wooded canyons, and riparian forests that are representative of the early California landscape, and make them available for public enjoyment and education.

CHSP is within the Puente-Chino Hills, which are at the northern end of the Peninsular Ranges Geomorphic Province. The Chino Hills are part of a group of hills that also includes the Puente Hills to the northwest. The Chino Hills and the Puente Hills form a roughly triangular area of approximately 35 square miles of valleys, canyons, hills, and steep slopes. The hills are bounded on the northwest by the San Gabriel Valley, on the northeast by the San Bernardino Valley, and on the south by the Santa Ana River Canyon and the Los Angeles Basin. The Cleveland National Forest in the Santa Ana Mountains begins two miles south of the CHSP boundary on the south side of the Riverside Freeway (SR-91). It is biologically connected to Chino Hills State Park via the Coal Canyon bio-corridor, which is the only remaining viable link between them.

The CHSP supports 14 vegetation types. The dominant vegetation type in the CHSP is non-native annual grassland. However, walnut woodlands, coastal sage scrub, coast live oak woodland, sycamore woodland, chaparral, and riparian scrub are also important components. In addition, an one-mile-long section of the Santa Ana River and its associated Fremont cottonwood riparian woodland are within CHSP boundaries. This is the only remaining natural stretch of the Santa Ana River in Orange County.

The land for CHSP was acquired by the State of California primarily for the purpose of preserving its natural landscape features, its biological diversity, and the opportunities for solitude and recreation that open space provides for people in densely populated areas. A local conservation organization called Hills for Everyone initiated the Chino Hills Project and worked closely with the Legislature and the California Department of Parks and Recreation (Department) to make CHSP a reality.

1 California State Parks, Park History, https://www.parks.ca.gov/?page_id=21967

2 The acreage varies slightly depending on the source. For example, the CHSP public brochure, published by California State Parks, represents the size as "... more than 14,000 acres ..." The City of Chino Hills website represents the size as 14,102 acres, while the Wikipedia website states the size as 14,173 acres.

3. Regulatory Setting – CHSP General Plan

The CHSP General Plan was adopted by the California State Park Recreation Commission on February 23, 1999 and has not been updated. The General Plan provides guidelines for long-term management, development, and operation of CHSP. It replaces the original CHSP General Plan approved in August 1986.

The CHSP General Plan designates areas within the park as Management Zones. A land use zoning plan for the park that links four general levels of desired resource conditions and visitor experience to geographic areas is depicted on revised Exhibit 5-100 – Chino Hills State Park General Plan, which also identifies the Project location. The Management Zones consist of Natural Open Space Zone, Core Habitat Zone, Historic Zone, and Recreation and Operations Zone. The Core Habitat Zone includes the sub-classification Water Canyon Natural Preserve. The area of CHSP adjacent to the Project site to the east and north is designated as Natural Open Space Zone, as shown on Exhibit 5-100.

This zone is characterized as follows.

The Natural Open Space Zone protects natural, cultural, and aesthetics resources, and at the same time allows for recreational opportunities at the park. The zone generally has less biological sensitivity than the Core Habitat Zone, but contains patches of higher resource sensitivity within its boundaries that will receive greater protection. The boundary of the Natural Open Space Zone is generally delineated by roads and trails, the park boundary, and other management zone boundaries.

Ridges separate the Project from CHSP on the north and eastern Project borders, with the exception of Blue Mud Canyon, which is a canyon in the southernmost section of the Project site that begins to the east of the Project site in CHSP and runs westerly through the southernmost portion of the Project site.

Because the General Plan for the CHSP was adopted in 1999, the boundaries of the CHSP have expanded, as noted earlier. Notably for purposes of this Second RFEIR, the CHSP expanded southward along the area to the east of the site of the proposed Project. Although as of 1999, only the northern portion of Project site bordered CHSP on the east, the CHSP now also borders the southern portion of the Project site on the east. However, the California Department of Parks and Recreation's official maps for CHSP have not been updated to reflect these boundary changes.

The CHSP General Plan was reviewed by the County and the Applicant shortly after the August 23, 2012 public outreach meeting held at Travis Ranch by the Applicant, as a link to the CHSP General Plan was forwarded to the Applicant through Brian Lochrie by Ron Krueper, District Superintendent, Inland Empire District, California State Parks on September 17, 2012. The Project Applicant reviewed the CHSP General Plan and confirmed their review in an email to District Superintendent Krueper on October 22, 2012, and the first meeting with State Park personnel was held on

October 25, 2012. The CHSP General Plan was then referenced as a planning tool and attached as an appendix to all of the following: the DEIR; the FEIR approved by the County on June 2, 2015; and the RFEIR considered for approval at the Board of Supervisors on December 13, 2016 and the Planning Commission in November 2016, January 2017 and March 2017.

Compliance with the CHSP General Plan is detailed in revised Table 5-9-19 – Chino Hills State Park General Plan Consistency. Because the CHSP General Plan was utilized as a planning tool along with the direct requests from State Park personnel, no further revisions or discussion of the CHSP General Plan are necessary.

4. Geographic Relationship of the CHSP to the Project

CHSP is bordered on the north by the City of Chino Hills, on the south by the City of Yorba Linda, and on the west by the City of Brea, and is close to the cities of Chino Hills, on the south by the Yorba Linda, on the west by the Brea, and is close to the City of Chino, and Corona, and the unincorporated communities of Olinda Village, Sleepy Hollow. The City of Riverside is approximately 16 miles to the east of CHSP along the Riverside Freeway (SR 91). Revised Exhibit 5-2 – Chino Hills State Park Location Map depicts the relationship of the Project to CHSP.

5. Map Revisions Related to CHSP

Enrique Arroyo, CHSP District Planner, sent a letter to the County regarding incorrect maps in the DEIR, and after discussion with Project Applicant, sent an email dated February 18, 2015 requesting a change to the description of CHSP along with an updated map of CHSP and a CHSP brochure for 2012. The County changed various exhibits and corrected the acreage for CHSP at the request of State Park personnel. As noted above, the Court of Appeal determined that the changes made by the County in 2015 were not sufficient, so additional changes have been made as detailed below.

A complete inventory of the maps from the FEIR dated June 2, 2015 and the more recent RFEIR dated May 5, 2017 has been taken, and all maps in this SRFEIR have been updated to reflect the location of the current boundaries of CHSP, including the inaccurate maps previously used from various agencies, including the Orange County Local Agency Formation Commission (LAFCO), CHSP, the City of Yorba Linda, the County, the Orange County Fire Authority (OCFA), and other agencies. Because many of these maps were official maps created by other agencies, it was necessary to use various image editing software programs, including Photoshop or Adobe Illustrator to update the maps³ to reflect the most current boundaries for CHSP, as required by the Court of Appeal decision. These updates are for purposes of this SRFEIR only, and the

³ The various agencies' official maps have not been changed, and the maps contained in this SRFEIR should not be referenced as official agency exhibits.

various agencies' official maps themselves have not officially changed, as only those agencies can modify their official maps.

The following Exhibits/Maps have been updated in this SRFEIR to reflect the current boundaries of CHSP in accordance with the Court of Appeal's decision, as explained below:

Exhibit 2-1 – Project Vicinity Map, in Chapter 2 was updated to reflect the current boundaries of CHSP.

Exhibit 3-1 – Project Boundaries, Ownership in Chapter 3 was updated by removing the incorrect property line that showed CHSP only to the east of the Nicholas/Long property.

Exhibit 4-1 – Sphere of Influence Map, City of Yorba Linda, in Chapter 4, Section 4.1, provided by LAFCO, was updated to reflect the current boundaries of CHSP.

Exhibit 4-2 – Photo Locations Key, in Chapter 4, Section 4.2, was updated by removing the incorrect property line that showed CHSP only to the east of the Nicholas/Long property.

Exhibit 4-8 – Physical Characteristics, in Chapter 4, Section 4.2, was updated by removing the incorrect property line that showed CHSP only to the east of the Nicholas/Long property.

Exhibit 4-11 – Planning Areas, in Chapter 4, Section 4.3, was updated by removing the incorrect property line that showed CHSP only to the east of the Nicholas/Long property.

Exhibit 5-1 – Scenic Highway Plan, County of Orange, in Chapter 5, Section 5.1, was updated to reflect the current property boundaries for CHSP.

Exhibit 5-2 – Chino Hills State Park Location Map, CHSP Brochure, in Chapter 5, Section 5.1, was updated to add "CHSP" immediately east of the Project.

Exhibit 5-63 – Transportation Analysis Zones in the City of Yorba Linda (Portion), in Chapter 5, Section 5.6, provided by the Southern California Association of Governments (SCAG) and dated 2008, was updated to reflect the current boundaries of CHSP.

Exhibit 5-65 – Orange County Fire Authority Unincorporated Yorba Linda and La Habra Ember/Fire Hazard Severity Zones, in Chapter 5, Section 5.7, was updated to reflect the current boundaries of CHSP, and CHSP was shown as a State Responsibility Adopted Very High FHSZ.

Exhibit 5-68 – Evacuation Plan, Orange County Sheriff's Department/City of Yorba Linda, in Chapter 5, Section 5.7, was updated the CHSP boundary to east of Project.

Exhibit 5-84 – Esperanza Hills Existing Topography and Drainage Areas, in Chapter 5, Section 5.8, vicinity map portion of the exhibit was updated to show the correct boundaries of CHSP.

Exhibit 5-91 – Esperanza Hills CWQMP Best Management Practices – Option 1, Stonehaven Drive, in Chapter 5, Section 5.8, was updated to reflect the correct boundaries of CHSP in the vicinity map portion of the exhibit.

Exhibit 5-92 – Esperanza Hills CWQMP Best Management Practices – Option 2, Aspen Way, in Chapter 5, Section 5.8, was updated to reflect the correct boundaries of CHSP in the vicinity map portion of the exhibit.

Exhibit 5-95 – FIRM - Flood Insurance Rate Map, Orange County, in Chapter 5, Section 5.8.4, was updated to reflect that the City of Yorba Linda city limits had been updated due to its transfer of property to CHSP; therefore, the reference to “City of Yorba Linda” was removed.

Exhibit 5-96 – Surrounding Land Uses, in Chapter 5, Section 5.9.1, was updated by removing the incorrect property line that showed CHSP only to the east of the Nicholas/Long property.

Exhibit 5-97 – Orange County Land Use Map of Site Area, in Chapter 5, Section 5.9.2, was updated to reflect the current property boundaries of CHSP, and the updated boundaries were shown as Open Space Reserve.

Exhibit 5-98 – Orange County Zoning Map of Site Area, in Chapter 5, Section 5.9.2, was updated to reflect the current property boundaries of CHSP.

Exhibit 5-99 – Chino Hills State Park Trails Map in Chapter 5, Section 5.9.2, was updated to reflect the current property boundaries of CHSP, as shown on the most recent brochure emailed from CHSP.

Exhibit 5-100 – Chino Hills State Park General Plan in Chapter 5, Section 5.9.2, was updated to reflect the current property boundaries of CHSP. The management zone to the east of the Project Site was shown as Natural Open Space Zone as State Park personnel confirmed that the management zones had not changed.

Exhibit 5-101 – Sphere of Influence Map, from LAFCO, dated 2008, in Chapter 5, was updated to reflect the current boundaries of CHSP.

Exhibit 5-108 – Public Facilities Recreation Locations, in Chapter 5, Section 5.12.1, was updated to show the proper boundaries of CHSP to the north and east of the Project Site.

Exhibit 5-125 – Conceptual Trails Plan, Option 1 – Stonehaven Drive in Chapter 5, Section 5.13, was updated by adding the text “Chino Hills State Park” above the connection for a trail to the Existing Old Edison Trail just to make it clearer as to the location of CHSP.

Exhibit 5-126 – Conceptual Trails Plan, Option 2 – Aspen Way, in Chapter 5, Section 5.13, was updated by adding the text “Chino Hills State Park” above the connection for a trail to the Existing Old Edison Trail just to make it clearer as to the location of CHSP.

Exhibit 5-127 – Key Intersection Map, from Thomas Brothers, in Chapter 5, Section 5.14, was updated to show that the grading for Esperanza Hills did not intrude into CHSP.

Exhibit 5-163 – Physical Characteristics, in Chapter 5, Section 5.15, a map showing site physical characteristics was updated by removing the incorrect property line that showed CHSP only to the east of the Nicholas/Long property.

Exhibit 6-6 – CWQMP BMPs – Option 2A, San Antonio Road, Chapter 6, Section 6.6.1 was updated in the vicinity map portion to reflect the current boundaries of CHSP.

Exhibit 6-34 – Planning Areas, in Chapter 6, Section 6.8.1, was updated by removing the incorrect property line that showed CHSP only to the east of the Nicholas/Long property.

6. Meetings with State Park Personnel Regarding CHSP Prior to Project Approval

Going back to as early as 2012, a history of the interaction between the Project Applicant, State Park personnel, County staff, and the County's environmental consultant demonstrates that, despite the mapping flaws identified by the Court of Appeal, the individuals who prepared the EIR did so with full knowledge of the correct boundaries of CHSP. In 2012 and 2013, State Park personnel identified issues of concern to them, and those issues were addressed on a methodical and consistent basis.

The Project Applicant met on numerous occasions with various State Park personnel responsible for the management of CHSP, including Ron Krueper, District Superintendent for California State Parks, Inland Empire District; Kelly Elliot, Chino Sector Superintendent; Enrique Arroyo, District Planner; and Ken Kietzer, Sr. Environmental Scientist, Inland Empire District. Mr. Krueper attended the August 23, 2012 Neighborhood Outreach Hearing held at Travis Ranch, and requested that the Project Applicant review the CHSP General Plan. The Project Applicant was unable to find a copy of the CHSP General Plan on the CHSP website, so they requested one via email. District Superintendent Krueper sent a link to the CHSP General Plan (showing the 1999 boundaries) in an email dated September 17, 2012. Project Applicant met with Mr. Krueper, Ms. Elliot, Mr. Arroyo, Mr. Kietzer, and other personnel at the Brea Interactive Center in CHSP on the Project's potential effects on CHSP on October 25, 2012 and March 7, 2013, and the Project Applicant was requested to do the following:

1. Remove any potential trails into CHSP from the Project, with the exception of the existing entry to the Old Edison Trail.
2. Include photographs from San Juan Peak showing the projected view of the Project once it was constructed into the View Study to be included in the EIR.

3. Remove any fuel modification that intruded into CHSP.
4. Provide additional information on the status of a Golden Eagle's nest found by biologists working for Glenn Lukos & Associates that was located in CHSP outside of the Project area, but within one mile of the Project site.
5. Include analysis of the effects of the Project on potential wildlife movement from the Project site to CHSP, and a discussion of CHSP in the biological analysis for the Project.
6. Review the fire management plan for CHSP once it was completed.
7. Review the February 1999 CHSP General Plan and include a description of CHSP and reference its General Plan as a document considered as part of the Project planning.
8. Do not develop homes on the ridges that separate the Project site from CHSP.
9. Continue to provide limited vehicular access to CHSP from the Project site to the Old Edison trail for use by CHSP service personnel and other authorized users, including OCFA and Southern California Edison, without expanding vehicular access to the public, limiting public access to equestrian, hiking and biking.
10. Ensure that the telephone cell towers planned for the Project site could supply additional service for the areas in CHSP surrounding the Project site as there were dead zones that prevented communication by CHSP personnel for public safety and other purposes without installing the cell towers on the ridges.

After the meeting on October 25, 2012, Project Applicant sent an email to District Superintendent Krueper, Kelly Elliot and Enrique Arroyo summarizing the topics discussed at that meeting, with a copy to CAA Planning, the County's EIR preparation consultant. To confirm that the concerns of State Park personnel were being addressed, the Project Applicant sent a series of emails on various subjects, which are detailed under the specific heading topics below.

The next meeting with State Park Personnel occurred on March 7, 2013, and view studies were discussed, as well as the possibility of touring CHSP by vehicle if necessary. At the March 7, 2013 meeting, it was determined that a tour of CHSP was not necessary at that time.

Project Applicant sent another email on July 13, 2013, asking when State Park personnel wanted to "meet and go over the latest developments" on the Project. CHSP Chino Sector Superintendent Kelly Elliot sent an email dated July 16, 2013 indicating that they were not available to meet until late August or early September. Project Applicant responded with an email dated July 16, 2013 indicating that the development was proceeding forward and a screencheck Draft EIR would be submitted to the County shortly. The email also asked the question: "Aside from the matters we have already discussed, is there anything else that Chino Hills State Park is concerned about?" The email also confirmed that State Park personnel were free to directly contact Tony Bomkamp, the lead biologist for Glenn Lukos & Associates, with

respect to any his biological studies or analysis. The email confirmed that State Park personnel would contact the Project Applicant if further meetings were desired.

State Park personnel never contacted the Project Applicant for any subsequent meetings.

7. Project Biological Resources Analysis Relating To CHSP

Glenn Lukos & Associates prepared a Biological Report dated March 2013, and revised it in November 2013, which was attached to the Draft EIR as Exhibit D (Biological Report). The Biological Report noted the correct location of CHSP, stating, in Section 1.1, pages 2-3: "The Study Area is bordered by Blue Mud Canyon and Stonehaven Drive to the south, Chino Hills State Park to the north and east, and the proposed Cielo Vista project and residential areas adjacent to San Antonio Road to the west." The Biological Report also correctly noted that CHSP was 14,102 acres, on page 97.

The Biological Report specifically analyzed CHSP with respect to wildlife movement, noting in Section 4.8 on page 54, stating: "From a regional perspective, the Study Area abuts an area of privately owned open space along the western boundary of the Study Area, and is contiguous with open space connecting to Chino Hills State Park (to the north and east)." Draft EIR Section 5.11 on page 89 noted the correct location of CHSP to north and east in its discussion of indirect impacts to native habitats and specifically discussed CHSP with respect to human intrusion (p. 89) and impacts from domestic cats (p. 90).

After meeting with State Park personnel as noted above, the Biological Analysis was drafted to consider the CHSP General Plan (pp. 54-55), and the surrounding area by reviewing the California Natural Diversity Database (CNDDDB), the California Native Plant Society Inventory, and the U.S Department of Agriculture (USDA) soil maps for the Prado Dam and Yorba Linda quadrangles, which cover large parts of CHSP (page 4). Section 2.2.3 noted that the CNDDDB was searched to determine well-known occurrences of special status plant species "in the region." (p. 9)

The Biological Report noted, on page 54, that "Due to the past urbanization of the region, large open space areas in the immediate vicinity of the Study Area are limited to Chino Hills State Park and the Santa Ana River."

The Biological Report, at page 54, concluded that due to residential development to the east and northwest, the Study Area was not an important wildlife corridor, stating:

Thus, the Study Area serves as a "dead end" or "cul-de-sac" for the movement of larger mammals that require larger home ranges and dispersal distances or dense vegetative cover from the north and east through the Study Area, but no movement of large species with large ranges would occur to/from the south and west due to existing urban development. However, smaller, urban-adapted species (e.g., raccoon, skunk, coyote, birds) are expected to move through the Study Area. Although the Study Area

provides habitat for small wildlife and may support movement on a local scale, it does not function as a regional wildlife movement corridor because it does not connect two or more habitat patches due to the surrounding development.

The Biological Report, at pages 54-55, considered the CHSP General Plan and its lengthy discussion of wildlife corridors north of the Study Area, and noted that none of the three important wildlife corridors that connected CHSP with adjacent projected open space either traversed or connected to the Study Area.

In Section 5.8, the Biological Report again discussed the three important corridors that connected CHSP with adjacent open space, and concluded:

As such, none of the three Project alternatives would interfere substantially with the movement of any native resident or migratory wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. Therefore, under Alternative 1, Alternative 2, and Alternative 3 impacts to wildlife movement would be less than significant.

Glenn Lukos & Associates also researched the issue of the location and status of the Golden Eagle nest located within CHSP and within a one mile of the site and concluded that it had either been abandoned or destroyed prior the 2008 Freeway Complex Fire and was no longer occupied. Confirmation of this conclusion was sent via email from the Project Applicant to Ken Kietzer, Scott Eckardt, and Kelly Elliot on July 13, 2013, and noted in the Biological Report at Section 4.5.3 on page 49. Previously, in an email to Ron Krueper, Enrique Arroyo, Kelly Elliot, and Ken Kietzer on March 1, 2013, the Project Applicant sent a constraints map for the Project that noted the location of the Golden Eagle nest as being north of the site based on a biological study performed prior to 2008. The email was in response to an email request dated March 1, 2013 from CHSP District Superintendent Krueper for additional information on the view studies and also for permission to talk directly with Tony Bomkamp, the lead biologist for Glenn Lukos & Associates with regard to the Golden Eagle. The Biological Report also noted, at Table 4-3, on page 44, that the Golden Eagle was observed breeding north of the Project site within CHSP, but not on-site. Instead, the Biological Report noted in Section 4.6 on page 53 that the Study Area “does not provide an important location for raptor foraging, especially given that raptors can utilize the extensive habitat in the adjacent Chino Hills State Park.”

Glenn Lukos & Associates also noted on page 3 of its protocol gnatcatcher survey dated May 8, 2017 that “no observations of golden eagles, including foraging or fly-overs were made during the 2017 surveys.”

The Biological Report also analyzed the potential occurrence of gnatcatchers on the Project site, as both the Project and a large portion of CHSP are located within Unit 9 of the existing final critical habitat for gnatcatchers as designated by the U.S. Fish and Wildlife Service (USFW). The CHSP General Plan noted on page 23: “As of 1998, the California gnatcatcher had been documented as nesting within park boundaries only in the California Sagebrush Series habitat along the park’s southern boundary.”

The Biological Report concluded that, prior to the Freeway Complex Fire, marginally suitable gnatcatcher habitat existed on the Project site (p. 11) but protocol gnatcatcher surveys performed in 2010, 2013 and 2017 concluded that suitable gnatcatcher habitat did not occur on-site, and no gnatcatchers occupied the site. The May 8, 2017 California Gnatcatcher (“CAGN”) survey noted, on page 3: “No CAGN were observed within or adjacent to the Survey Area during the 2017 breeding season.”

A map prepared by USFW dated March 8, 2017 in connection with the investigation by the USFW of the Project site was sent to the County by Jonathan Snyder, based on a complete study of all databases. The map confirmed that no gnatcatchers were observed on the Project site or within CHSP immediately adjacent to the Project site.

As detailed above, the Biological Report correctly analyzed the full acreage and proper location of CHSP, so no additional biological surveys are required to demonstrate that the entirety of CHSP, including the areas along the northern and eastern boundaries of the Project site, was considered in evaluating biological impacts. The biological analysis therefore need not be modified in response to the Court of Appeal decision.

Section 5.3 – Biological Resources of the RFEIR fully analyzed the biological aspects of CHSP, discussing it under the headings Existing Conditions, Impacts to Special Status Wildlife Resources Special Status Wildlife Observed, Cumulative Impacts - Wildlife Movement – Existing Conditions, Chino Hills Wildlife Corridors, Indirect Impacts, Impacts from Domestic Cats, Indirect Impacts from Noise and Lighting, and Project Design Features.

Revised Table 5-9-19 details the Project’s compliance with the CHSP General Plan, including vegetation management, bio-corridor management, wildlife management and preservation of ridgelines as buffers.

Because the Biological Report fully analyzed CHSP, and the analysis of Section 5.3 of the RFEIR fully analyzed the biological considerations of the Project with respect to CHSP, no further revisions to the RFEIR are required.

8. Fuel Modification in Relation to CHSP

After consulting with State Park personnel as detailed above, the Project was designed so that the fuel modification plans approved by the County and conceptually approved by OCFA do not include any fuel modification within CHSP. In addition, access to or from CHSP will not be required to maintain the fuel modification on the Project site. In the email from Project Applicant to State Park personnel and CAA Planning dated October 26, 2012, Project Applicant confirmed that no part of CHSP would be used for fuel modification.

Exhibit 5-7 of the RFEIR shows the fuel modification for Option 1, and correctly shows that CHSP is located directly east and north of the Project site. It shows no fuel modification within the boundaries of CHSP, as requested by State Park personnel.

Revised Table 5-9-19 noted that the lack of fuel modification within the borders of CHSP was consistent with the CHSP General Plan.

Therefore, the analysis for the effect of fuel modification on the Project site on CHSP was fully analyzed and does not need to be studied further in response to the Court of Appeal decision.

9. Aesthetics

View Study from CHSP

Section 5.1 of the RFEIR detailed the aesthetic considerations of the Project. Section 5.1.1 noted that the Project was adjacent to CHSP, to the east and north, and discussed the San Juan Hill lookout and the fact that the ridges between CHSP and the Project would remain undeveloped.

Section 5.1.1 also noted that there would be potential views of the Project from the South Ridge Trail, the Old Edison Trail, and the San Juan Hill lookout.

Section 5.1.3 discussed the aesthetic value of long range views and other aspects of the CHSP General Plan, including the retention of the ridgelines that separate the Project and CHSP.

State Park personnel requested that Project Applicant do a view study from CHSP, including views from San Juan Peak, Blue Mud Canyon, and the Old Edison Trail. Project Applicant sent a view study via email on March 7, 2013 to State Park personnel and brought printed copies to the meeting with State Park personnel on March 7, 2013, as confirmed in the emails between Project Applicant and on March 7, 2013.

At the suggestion of Park personnel, photographs taken from San Juan Peak of the Project site (View 12) were included in the View Study in the FEIR and the Revised FEIR. Views 10 and 11 were taken from the Hidden Hills subdivision just east of the western border of CHSP in the Blue Mud Canyon area, near or at the eastern border of the Project bordering CHSP. View 9 was taken at the western boundary of the Hidden Hills subdivision, as shown on Exhibit 5-10, again overlooking Blue Mud Canyon looking toward the Project Site. The view study shows that the structures associated with the 22-acre estate lot will be visible from San Juan Peak, but they will be viewed against the distant ridgelines of the Santa Ana Mountains. In addition, a few residential structures located in Planning Area 1 below the ridge at the intersection of "S" and "U" Streets at an elevation of 1,039 above mean sea level (AMSL) will also be visible. The Project will not be visible from Blue Mud Canyon, as shown on Views 9, 10 and 11, because there are ridges that block the Project site from CHSP.

Lighting

The effect of indirect lighting on land surrounding the Project site, including CHSP, was also addressed to minimize impacts; and various Project Design Features and Mitigation Measures were incorporated into the Project approvals to minimize light pollution.

Mitigation Measure AE-1 states: "Prior to issuance of building permits, the Project Applicant shall demonstrate that all exterior lighting has been designed and located so that all direct rays are confined to the property in a manner meeting the approval of Manager, OC Planning, or designee. Lighting shall be designed to minimize visibility of light sources by directing lighting toward on-site structures and not illuminating areas outside property boundaries."

Mitigation Measure GHG-38 states: "Prior to Precise Grade grading permits, the County of Orange shall ensure that the Project site improvement plans reflect a performance specification for use of solar powered LED lighting for monument lights and main access lighting."

Mitigation Measure GHG-40 states: "Prior to issuance of Precise Grading permit, the County of Orange shall ensure that lighting for the park areas will be programmed to be turned off no later than 10:00 p.m. and motion detectors shall be installed on lighting on pedestrian pathways."

PDF (Project Design Feature) 11 requires that: "Homeowners will be required through the HOA's CC&Rs, to use only hooded and shielded down-lighting for all exterior lights, including landscape lighting."

PDF 14 requires that "All lighting shall be hooded, shielded and pointed away from the sensitive habitat areas with ambient light levels to be minimized to the maximum extent possible. "

All of the requirements above are designed to preserve views of the night sky, and to prevent light spill (aka, light trespass) onto the adjacent open space/habitat areas. The natural ridgelines on the north and east of the Project Site also act as a buffer between CHSP and the Project to minimize light pollution to CHSP.

As a result, the ambient light level affecting CHSP from the Project will be minimal if measureable at all, as the Hidden Hills subdivision to the east likely results in more light pollution to CHSP than the Project. The ambient light level within open space on and adjacent to the Project site is being minimized and is less than significant with mitigation measures.

In addition, revised Table 5-9-19 which appeared at pages 5-466-7 in the RFEIR was revised to reflect compliance with the Aesthetics Resources Goal of the CSHP General Plan. Revised Table 5-9-19 is Attachment C to the 2018 AEA.

As set forth above, Section 5.1 of the Revised FEIR fully analyzed CHSP with respect to Aesthetics, including the views requested by State Park personnel and additional views

from Blue Mud Canyon and with respect to lighting. Therefore, Section 5.1 fully analyzed CHSP and no further study or revisions are necessary.

10. Preservation of Ridges Between CHSP and the Project

As discussed extensively in the meetings and emails between the Project Applicant and State Park personnel, and as confirmed in earlier meetings with Hills for Everyone prior to submission of the application for the Project, the Project was designed to avoid residential development on the ridges that separate the Project site from CHSP; and RFEIR Chapter 4, Section 4.9, Project Goals and Objectives, included preservation of the northern and eastern ridgelines adjacent to CHSP as a goal.

Section 5.9 of the Revised FEIR, Land Use and Planning, analyzed the Project's land use plan, and correctly noted at Section 5.9.1 that CHSP bordered the Project on the north and east. Section 5.9.7 discussed land use aspects of the Project with CHSP, correctly noting that CHSP was 14,100 acres. Exhibit 5-99 correctly showed the location of CHSP with relation to the Project, showing that CHSP bordered the Project to north and east. Section 5.9.7 also discussed the fact that Blue Mud Canyon was located in CHSP, detailed the various management zones of CHSP, and discussed San Juan Hill and the Old Edison Trail.

Table 5-9-5, Resources Policy 5 also notes that: "The project design is sensitive to the existing topography through preservation of Blue Mud Canyon on the southern boundary of the Project site, the preservation of the northern and eastern ridgelines adjacent to Chino Hills State Park and use of contour grading and natural appearing retaining structures."

The site plans submitted to the County (and previously approved on June 2, 2015 and May 9, 2017) have no residential development on the ridges that separate the Project from CHSP, with the exception of a road to the 22-acre estate lot.

Exhibit 5-100 showed the management zones for CHSP and was derived from the CHSP General Plan, the map from which has never been changed to reflect additions to the CHSP acreage made subsequently. In connection with this Second RFEIR, however, Exhibit 5-100 was updated to show the correct boundaries of CHSP to the east of the Project site.

In addition, Table 5-9-19, Consistency with CHSP General Plan, was revised to reflect the Project's compliance with the Buffers goal for CHSP due to preservation of the ridgelines separating the CHSP from the Project.

The preservation of the ridges requested by Hills for Everyone and State Park personnel was incorporated into the Specific Plan for the Project and the vesting tentative tract map (VTTM) that was ultimately approved by the County. Consequently, there is no need to revise Section 5.9 of the RFEIR, as it fully analyzed the Project's effects on CHSP with respect to preservation of the ridgelines.

11. Recreation – Trails to CHSP

As set forth under Section 4.9, Project Goals and Objectives, the Project was designed to provide recreational opportunities for residents in the Project vicinity for access to CHSP, and it was initially planned to provide access to CHSP in three different locations – 1) to the east through Blue Mud Canyon, 2) to the north through the canyon between the Project and the Casino Ridge subdivision to the west, and 3) to Old Edison Trail.

The CHSP General Plan provides guidelines for coordination between State Park personnel and Project developers at page 71, stating: “On the other hand, when development occurs adjacent to the park, coordination and advance planning should avoid the creation of de facto trailheads that cause damage to park resources.”

The Trail Plan was revised by the Project Applicant after the meetings with State Park personnel so that the only trail connection to CHSP was to the Old Edison Trail, and the proposed trail plan was shared with State Park personnel during the meetings in 2012 and 2013. Kelly Elliot, of State Parks, provided the GIS coordinates for the site that the State Park Service wanted the trail from the Project site to connect to the Old Edison Trail in an email dated October 29, 2012, and the Project Applicant then designed their trail to connect to the Old Edison Trail at those coordinates. Project designer Gary Lamb confirmed that the trail design would be changed to allow a trail connection to CHSP only through the Old Edison Trail in a response email dated October 29, 2012 and a follow-up email dated January 25, 2013. The revised trail design was sent to Ms. Elliot in an email dated January 28, 2013, and Ms. Elliot confirmed receipt in an email dated January 28, 2013. Section 4.9 Project Goals and Objectives was changed to provide that access to CHSP was only from the west to the Old Edison Trail, prior to the County’s original approval for the Project.

Table 5-9-19 was revised to reflect consistency with the CHSP General Plan on the issue of trails and pedestrian access.

Section 5.13, Recreation, discussed the trail connection to CHSP at 5.13.4.2, Trails, noted that California Department of Parks and Recreation had authority to formalize the connection to Old Edison Trail in CHSP, and noted that the California Department of Parks and Recreation required that the trail connection be designed to the Old Edison Trail.

Because the Trail Plan provided for only one access to CHSP, at the Old Edison Trail, at a specific location detailed on GPS coordinates, the original trails plan was adequate, and no further study or revisions are required in response to the Court of Appeal decision.

12. Preservation of Restricted Vehicular Access to CHSP

Vehicular access to CHSP through the Project site occurs over existing roads that connect to the Old Edison Trail in CHSP. There is a locked gate on the Project's southern property line on a paved road from Stonehaven Drive, which has locks for the Project owner, OCFA, CHSP, City of Yorba Linda, Metropolitan Water District, and Orange County Sheriff's Department. When the Project is developed, locking gates will be installed on the eastern property line of the Project where it connects into CHSP, as was confirmed in an email from Project Applicant to District Superintendent Krueper dated October 26, 2012, so that the gates would prohibit unauthorized vehicular access except for already grandfathered users identified above.

State Park personnel requested that vehicular traffic for the CHSP, OCFA and Southern California Edison would be preserved for historic access, and the project was designed to maintain that access prior to approval of the FEIR.

Table 5-9-19 was updated to reflect that retaining access for vehicular traffic was consistent with the CHSP General Plan Goal of preserving historic roads and trails and at the same time providing for visitor, State Park personnel and utility company access.

Because the request of State Park personnel to preserve vehicular access to CHSP was provided for as part of the approved Project design, no changes are required to the Revised FEIR as a result of the Court of Appeal decision.

13. Installation of Cell Towers

Two potential cell tower sites will be located near the proposed underground water reservoirs, camouflaged as landscape features. Neither tower site is located on the ridges that separate the Project site from CHSP. These cell towers should provide additional service into CHSP that can be used by CHSP personnel once constructed, and will enhance cell phone service for OCFA, Orange County Sheriff's Department (OCSD), and other agencies and residents.

The discussion on the location of the cell towers and the fact that they were camouflaged was discussed in Section 4.3 of the Revised FEIR under the heading "Infrastructure".

Both the FEIR and Revised FEIR provided the detailed discussion of cell towers requested by State Park personnel, so no further revisions to this discussion are necessary.

14. Fire Management for Project and CHSP

The CHSP General Plan, on page 61, states as a goal: “Plan for the occurrence of wildfires in order to preserve sensitive park resources and protect human lives and structures.” The guideline to accomplish this goal is also stated on page 61 and it provides that:

State Parks will work with appropriate agencies such as the California Department of Forestry and Fire Protection, county and city fire Departments, and Metropolitan Water District of Southern California to develop and implement a wildfire management plan for Chino Hills State Park. This plan will address all aspects of wildfire planning, including prevention, pre-suppression, and suppression. The plan will identify modified fire suppression methods and ways to protect sensitive park resources.

On page 62, the General Plan provides for prescribed fires, stating: “Over time, fire plays an important role in the development of native plant communities. The near-elimination of wildfires has stressed the ecological balance, thereby allowing non-native plant pest species to establish and, in some cases, dominate the landscape. Fire suppression also results in the increased build-up of dry fuels, which can then lead to large-scale, catastrophic fires.” The General Plan concluded, at page 72, that the goal to resolve this issue is: “Restore the role of fire in the natural ecological processes of Chino Hills State Park.”

In the meetings with State Park personnel dated October 25, 2012 and March 7, 2013, the fire management plan for CHSP was discussed, but the Project Applicant was told that the plan was still in draft form and not ready for release. District Superintendent Krueper confirmed that a copy of the draft would be sent to Project Applicant in an email dated October 26, 2012.

Because CHSP was not able to deliver a completed or approved fire management plan, the Project’s fire safety was analyzed by Dudek Engineering with the assumption that CHSP’s practices for fire management would not change from those followed in connection with the 2008 Freeway Complex Fire, which burned the Project site and most of CHSP to the east of the Project site. Dudek completed its Fire Protection and Emergency Evacuation Plan (FPEP) in June 2013.

The FPEP correctly noted, on page 1, that the Project was south and west of CHSP and had been recently burned during the Freeway Complex Fire, stating: “The project site encompasses nearly 469 acres south and west of Chino Hills State Park, north of the 91 corridor, and within the Yorba Linda sphere of influence. The site currently includes steep terrain, wildland fuels, and a landscape that is vulnerable to periodic wildfire, as most recently experienced during the 2008 Freeway Complex Fire, which burned most of Chino Hills, including the Esperanza Hills site.”

The FPEP also properly noted the location of CHSP in Section 1.3.1 on page 9, Section 2.3, page 20, and noted, on page 10: “The proposed Option 1 improved fire apparatus

access road would align with an existing dirt road which has been historically used by oil well operators, OCFA, City of Yorba Linda Water District, Southern California Edison, Chino Hills State Park, and neighboring residents for vehicular and foot access into the project area." A map for the Esperanza Hills Fire Protection and Emergency Evacuation Plan for Option 1 that properly noted the location of CHSP to the north and east of the Project Site was contained on Figure 3 of the FPEP.

The FPEP concluded, on page 31, that bordering CHSP and the lack of a fire management plan for CHSP increased the risk of wildfire hazard, stating:

Further, the proximity of the Project property to large expanses of open space to the north and east in Chino Hills State Park and potential ignition sources along Highway 91, Highway 71, La Palma Avenue, Carbon Canyon Road and portions of Yorba Linda Boulevard contribute to increased wildfire hazard on the project site. The open space areas preserved within the Chino Hills State Park are not currently managed under an approved, directed fire management plan. Type conversion of native sage and chaparral communities will likely continue, converting to grasslands as the shrub layers is degraded from too frequent fire. This will have the benefit of reducing the fire intensity associated with wildfires, but is not a preferred situation because grasses are more readily ignited and will result in more frequent fires.

The Dudek FPEP noted that other major fires had spread from CHSP to the Project site, including the Owl Fire in 1980 and the Santa Ana fire in 1943. A Fire History exhibit was attached to the FPEP as Appendix B, which covered nearly the entirety of CHSP.

Dudek then constructed a fire modeling study based on there being no fire management plan in CHSP and concluded at pages 43-44: "Yorba Linda areas located adjacent to the Esperanza Hills project will directly benefit from reduced wildfire risk with the construction of the project. The project will act as a large wildfire buffer for these communities, as described in the next section."

On page 44, the FPEP outlined the reasons why the project would act as a wildfire buffer, stating:

The project converts fuels that carried fire and produced significant embers during the Freeway Complex Fire that ultimately resulted in structure losses to managed landscapes. The significant canyons (particularly Blue Mud Canyon) which helped funnel the fire toward Yorba Linda will be significantly improved (from a fire and habitat perspective) through restoration activities to remove non-native, flammable vegetation and provide native, riparian vegetation and also, in key areas, to create large fuel modification areas (fuel breaks) that were strategically located with the assistance of OCFA and that will result in reduced fire intensity and spread rates along the southern project boundary in Blue Mud Canyon (FPEP Figures 7, 8, and 9).

The fire modeling analysis for Option 1, Figure 7 of the FPEP, appeared at Exhibits 5-80 and 5-81 in the Revised EIR.

An electronic link to the FPEP was sent to the State Park personnel in an email dated July 12, 2013 and written receipt was confirmed by State Park personnel that same day.

On July 16, 2013, Chief Scientist Ken Kietzer confirmed that a completed draft of the CHSP wildfire management plan was still not available. However, Mr. Kietzer did indicate that he would review the Project's wildfire management plan as soon as his schedule allowed.

No further comment on the Project's analysis of the fire hazard was received from State Park personnel.

The fire hazards analysis in both the FEIR and Revised FEIR correctly identified the location of CHSP and correctly modeled the fire hazards arising from CHSP.

Both the trial court and Court of Appeal determined that the fire hazard analysis in the FEIR was adequate, so no further revisions are required.

15. Creation of Project Buffer Zones

As set forth under Project Goals and Objectives, Section 4.9, and referenced again under consistency with Table 5-9-2, Orange County Land Use Element Consistency, Policy 6 requires new development to be compatible with adjacent areas. The County found that the Project was consistent with Policy 6, stating "The project has been designed to be sensitive to the adjacent open space areas, minimizing off-site views from Chino Hills State Park and providing open space buffers that provide a transition between land uses."

Section 4.3, Project Description, also noted: "The Proposed Project is designed to cluster residential pads to maximize open space preservation and preserve the natural ridgelines and topography to the greatest degree possible, including all ridgelines bordering Chino Hills State Park."

Because the Project was designed to mitigate its impact on CHSP by avoiding development of the ridgelines and creation of open space, it reduced its impact on CHSP as discussed in Section 5.1.1 Aesthetics – (discussion of views from CHSP) and Section 5.1.2(3) Aesthetics – Chino Hills State Park General Plan.

Table 5-9-19 was revised to show that the Project was consistent with the CHSP General Plan through the preservation of ridgelines that create buffer zones between the Project and CHSP.

No further analysis or mitigation measures are required.

16. Geology

Exhibit 5-39, Project Geology, showed the Project geology extending into CHSP to the east and north. A Regional Geomorphology Map, Exhibit 5-45, showing the Project site and surrounding area, which included CHSP to the north and east of the site, was studied, as shown as Exhibit 5-45. A Regional Shaded Relief Map showing a large area around the Project site that included CHSP to the north and east was studied as well, at Exhibit 5-46. Other regional Geology Maps were studied, at Exhibit 5-53 and 5-54, which again showed geology in CHSP to the north and east.

The Project's effect on the geology within CHSP was fully studied, and because there is no grading in CHSP or immediately adjacent to CHSP that will affect the geology of CHSP, there is no potential geological environmental effects of the Project on CHSP.

The analysis in the FEIR and the Revised FEIR in Section 5.5 on geology were adequate and no revision is necessary.

17. Paleontology

Section 5.4.1.2(b) of the Revised FEIR noted that a record search was conducted by staff at the Natural History Museum of Los Angeles for resources within the Project Area and a 1-mile radius, which extended into CHSP to the east and north. In addition, known records within 10 miles from other sources were also checked, including records held by Chino Hills Historical Museum, Loma Linda University, California State University San Bernardino, and the San Bernardino County Museum. No fossils are known with the Project Area or within a one-mile radius, extending into CHSP.

Section 5.4.1.2(b) noted that fossils occurring from the same rock that occurs in the Project Area were recovered in development of the City of Chino Hills. Since no grading will occur in CHSP, no fossils or other paleontological resources will be disturbed the CHSP, and mitigation measures CR-1 and CR-2 remain adequate.

No changes are necessary for Section 5.4 with respect to paleontology as a result of the Court of Appeal decision.

18. Cultural and Historic Resources

Section 5.4.1 noted the correct location of CHSP as being south and west of the Project site.

Exhibit 5-38 noted that the Project and surrounding area, including what is now CHSP, was part of Canon De Santa Ana, a land grant issued to Bernardo Yorba in 1834. Section 5.4.1.1(c) also noted that the Project Area has mostly been used for cattle ranching in the past, with 20th century oil drilling and exploration.

Section 5.4.1.1(d), Existing Cultural Resources, noted that an archaeological and historic records search determined that there are no known cultural or historic resources within the Project site boundaries. Even so, the surrounding area within one mile was also surveyed, including CHSP to the east and north of the Project site. Table 5-4-2 details all known sites, none of which were determined eligible to the National Register of Historic Places, and none are therefore considered significant. Because no grading or other site work will be conducted within CHSP, no cultural resources existing within CHSP will be affected by development of the Project, so there is no reason to adopt any mitigation measures other than CR-1 and CR-2. No changes are required in Section 5.4 with respect to Cultural and Historic Resources.

19. Air Quality

Both the Project site and CHSP are located in the South Coast Air Basin (SCAB). The Project's proximity to CHSP does not affect the Air Quality Analysis analyzed in Section 5.2 and all maps and other references showing the location of the Project to CHSP have been revised. The Revised FEIR did include, and the Board of Supervisors ultimately adopted, GHG-2, which requires that prior to issuance of building permits the County will ensure that improvement plans reflect that multi-use trails with the Project had connections to both municipal and CHSP trails.

No further analysis is required, and Section 5.2 Air Quality requires no revisions relating to CHSP.

20. Hydrology and Water Quality

Section 5.8 of both the FEIR and Revised FEIR showed that the Project site generally drains from northeast to southwest and includes three U.S. Geological Survey (USGS) designated drainage areas (canyons), with flows draining away from CHSP. No grading is proposed within CHSP and no grading within the Project site will affect any drainage into CHSP. The Project includes best management practices (BMPs) for sediment and erosion control, non-storm water and waste management during construction, hydromodification BMPs, bio-treatment BMPs and source control BMPs to ensure that the potential for storm water runoff and pollutants are controlled.

No further review or changes are necessary to the Hydrology and Water Quality section.

21. Hydrology and Water Quality

To comply with the decision from the Court of Appeal, the FEIR and RFEIR were reviewed to ensure that the proper description of CHSP was reflected in the various maps for the Project, and that the analysis for each section of the Revised FEIR

accurately analyzed CHSP. Even if a map was originally correct, it was revised if it could be made clearer by adding the label for CHSP. Table 5-9-19 was also revised to reflect compliance with the CHSP General Plan. In addition, the various emails between Project Applicant and State Park personnel were discussed and are attached to the 2018 AEA as Attachment D. A discussion of the concerns of State Park personnel was included, as well as detail as to how each of their concerns was addressed in the Second Revised EIR.

In summary, although many of the maps in the FEIR included inaccurate boundaries consistent with the 1999 CHSP General Plan map supplied to Project Applicant by State Park personnel and other inaccurate maps by other agencies, the environmental analysis in the FEIR consistently reflected a correct understanding of correct boundaries of the CHSP in relation to the Project site. In no instance did an inaccurate map result in an incomplete or inaccurate impact analysis.

Table 4-2-2 below identifies those locations where CHSP is discussed in relation to the environmental analysis of the Project in each section of this SRFEIR.

Table 4-2-2 References to Chino Hills State Park in the SRFEIR

Chapter	Sections	Exhibits Referencing or Showing CHSP Property
Introduction	1.3, 1.4, 1.5	
Executive Summary	2.1, 2.5	Summary Table, GHG Section; 2-1
Project History and Background	3.0	
Project Description	4.1, 4.2, 4.3, 4.4, 4.9	4-1, 4-8, 4-9, 4-10; 4-11, Table 4-2-1
Aesthetics	5.1.1, 5.1.2, 5.1.3, 5.1.4, 5.1.7, 5.1.8	5-1, 5-2, 5-3, 5-4, 5-7, 5-8, 5-10, 5-12, 5-19, 5-20, 5-21, 5-22
Biological Resources	5.3.1, 5.3.2, 5.3.3, 5.3.4, 5.3.5, 5.3.8	5-23,
Cultural Resources	5.4.1	Table 5-4-2
Geology and Soils	5.5.1	5-39, 5-43, 5-44, 5-45, 5-46, 5-52, 5-53, 5-54, Table 5-5-1
Greenhouse Gas Emissions	5.6.5	Table 5-6-10
Hazards and Hazardous Wastes	5.7.1, 5.7.4, 5.7.8	5-67, 5-70, 5-71, 5-72, 5-73, 5-74, 5-75, 5-80, 5-81
Hydrology & Water Quality	5.8.1	5-82
Land Use and Planning	5.9.1, 5.9.2, 5.9.4	5-83, 5-84, 5-86, 5-87, 5-91, 5-92, 5-96, 5-97, 5-98, 5-99, 5-100, 5-101, Table 5-9-2, Table 5-9-3, Table 5-9-5, Table 5-9-7, Table 5-9-11, table 5-9-12, Table 5-9-19
Noise	5.10.1	
Population and Housing	5.11.2	
Public Services	5.12.1, 5.12.3, 5.12.5	5-108, 5-109, 5-110
Recreation	5.13.1, 5.13.4	5-111, 5-112, 5-113, 5-125, 5-126
Transportation & Traffic	5.14.1, 5.14.3	5-127, 5-130
Alternatives	6.1, 6.5, 6.6, 6.7, 6.8, 6.9	6-1, 6-3, 6-4, 6-6, 6-9, 6-10, 6-11, 6-12, 6-13, 6-19
Summary of Cumulative Impacts	7.0	7-1, Table 7-1-2
Growth Inducing Impacts	8.0	
Inventory of Mitigation Measures	9.0	
DEIR Errata	12.0	

Attachment B
Revised Maps Depicting Location of Chino Hills State Park

Exhibit 2-1

Project Vicinity Map

Chino Hills State Park

Yorba Linda
Land, LLC

Bridal Hills, LLC

Esperanza Hills Project

CHSP

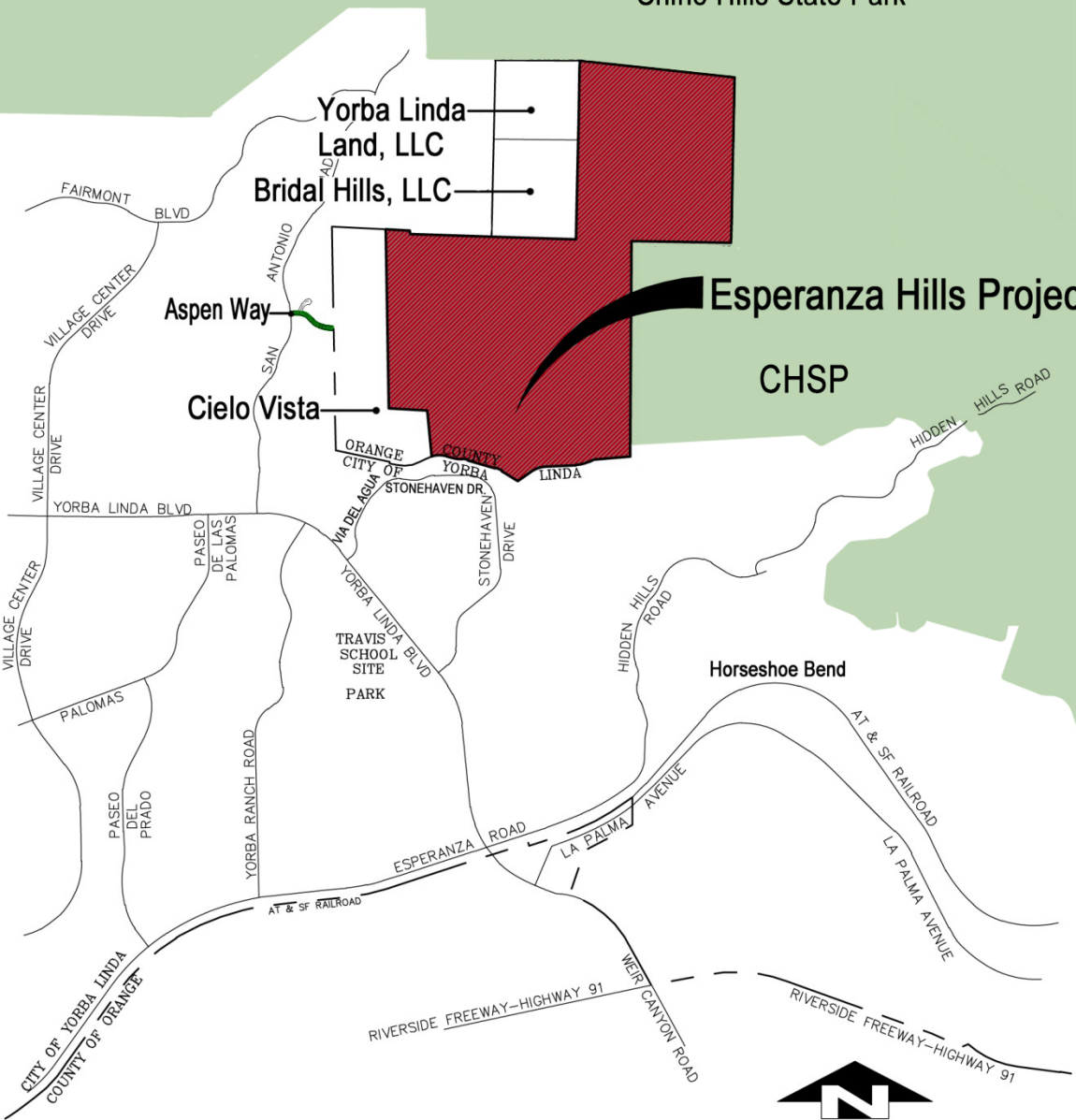
Aspen Way

Cielo Vista

ORANGE COUNTY
CITY OF YORBA LINDA

TRAVIS
SCHOOL
SITE
PARK

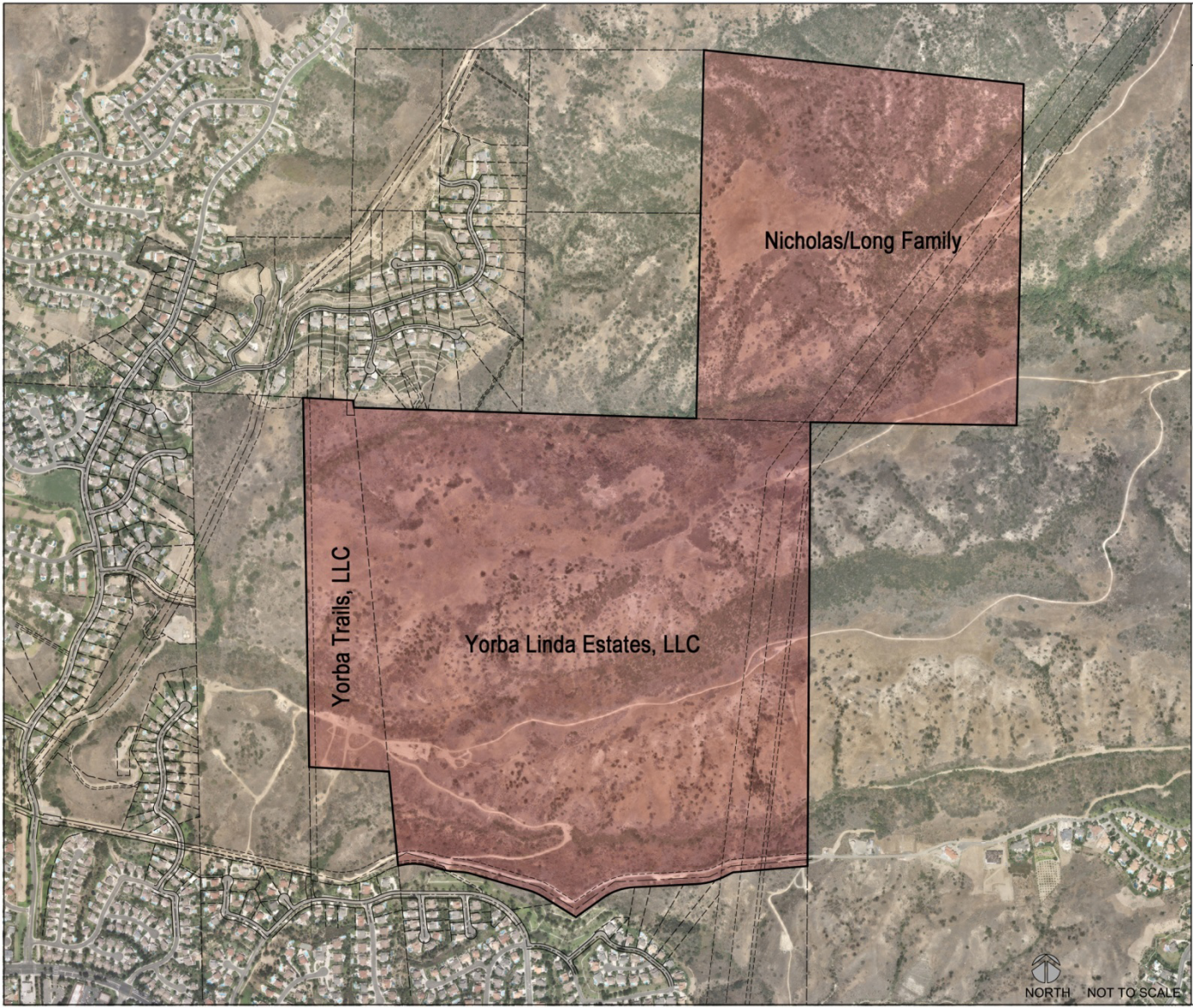
Horseshoe Bend



**Esperanza Hills
Vicinity Map**

Exhibit 3-1

Project Boundaries, Ownership



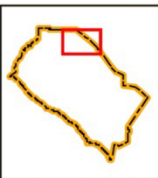
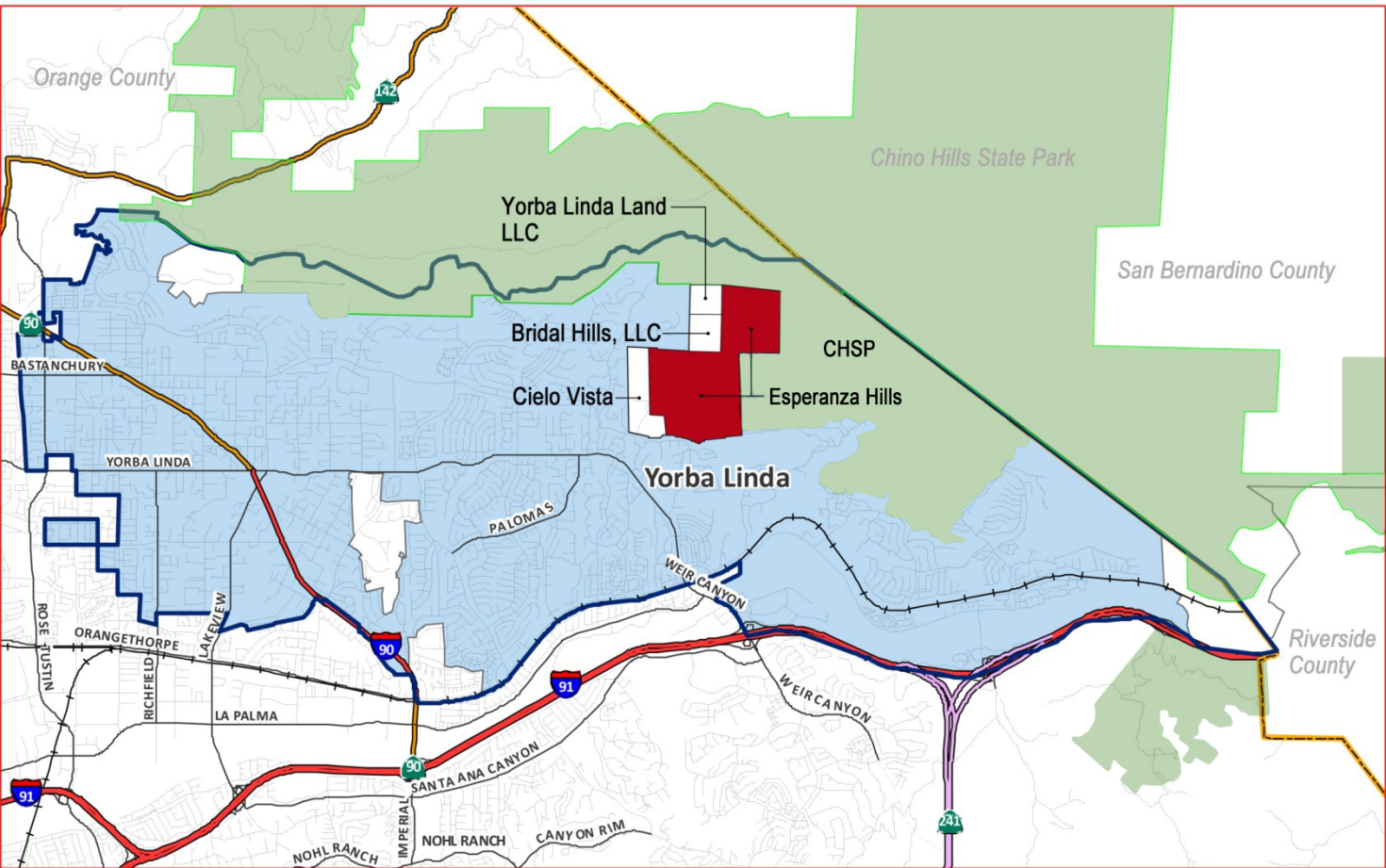
Nicholas/Long Family

Yorba Trails, LLC

Yorba Linda Estates, LLC

Exhibit 4-1

Sphere of Influence Map, City of Yorba Linda



City of Yorba Linda Sphere of Influence Map

SOI Originally Adopted: 02/14/73
Last Reviewed: 11/12/08

Orange County
LAFCO

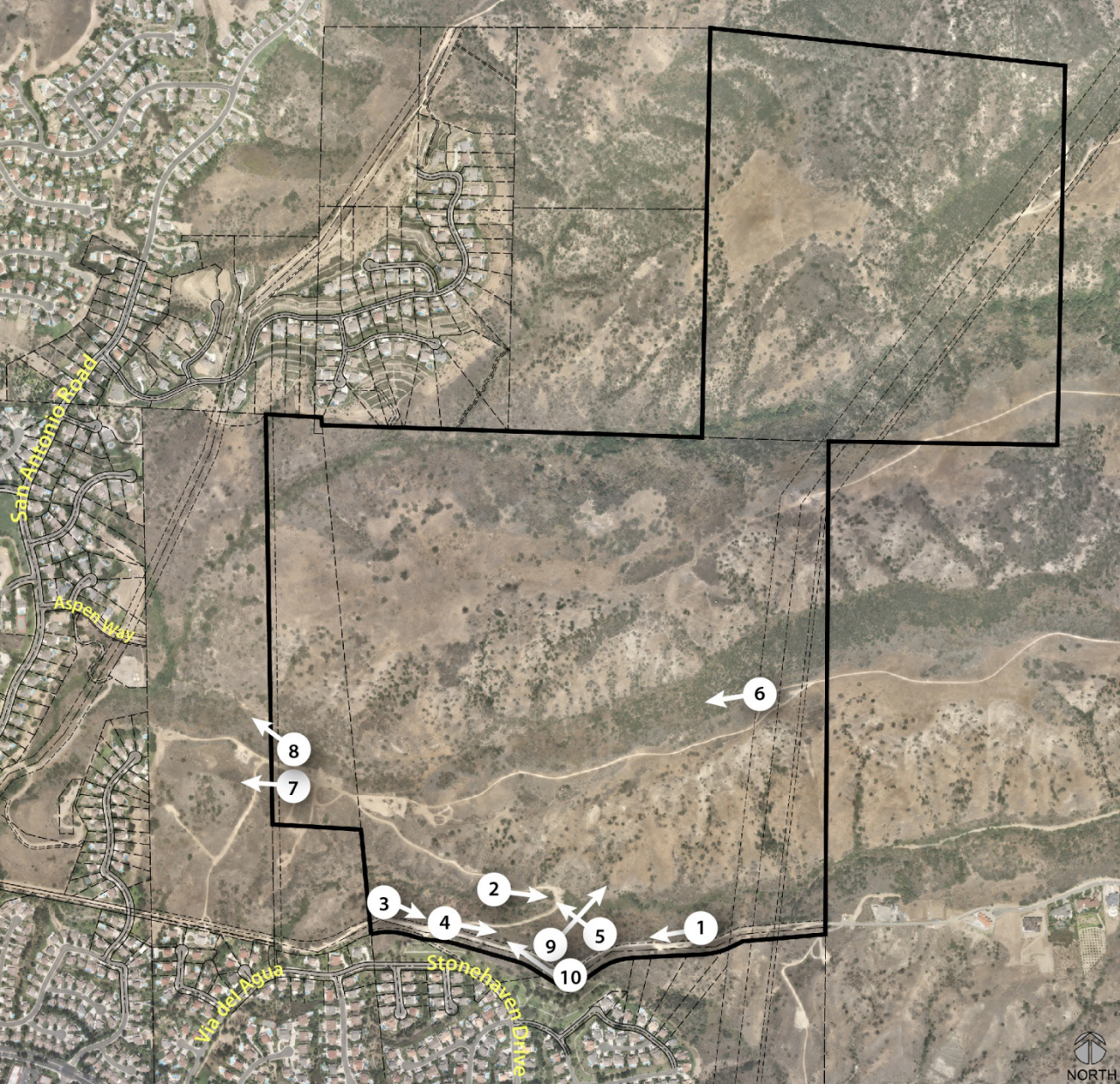
December 4, 2008

- Yorba Linda Sphere
- City of Yorba Linda
- Orange County Boundary
- Chino Hills State Park

F:\OCLAFCO SPHERE MAPS\Current Sphere Maps\District Sphere Maps\YorbaLinda.pdf

Exhibit 4-2

Photo Locations Key



San Antonio Road

Aspen Way

Via del Agua

Stonehaven Drive








- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10

Exhibit 4-8

Physical Characteristics

ESPERANZA HILLS PHYSICAL CHARACTERISTICS

The location of these graphics is a generalization and approximation only, and as such is not intended to be exact.

-  Intermittent Drainage Area
Source: Glenn Lukos Associates
(Preliminary Delineation)
-  Alquist Priolo Fault Line
(Whittier Fault)
Located by American Geotech
-  SCE Easement
(Southern California Edison)
-  Yorba Linda Water District Easement
-  Metropolitan Water District Easement
-  Southern California Gas Co. Easement
-  Oil Well Location

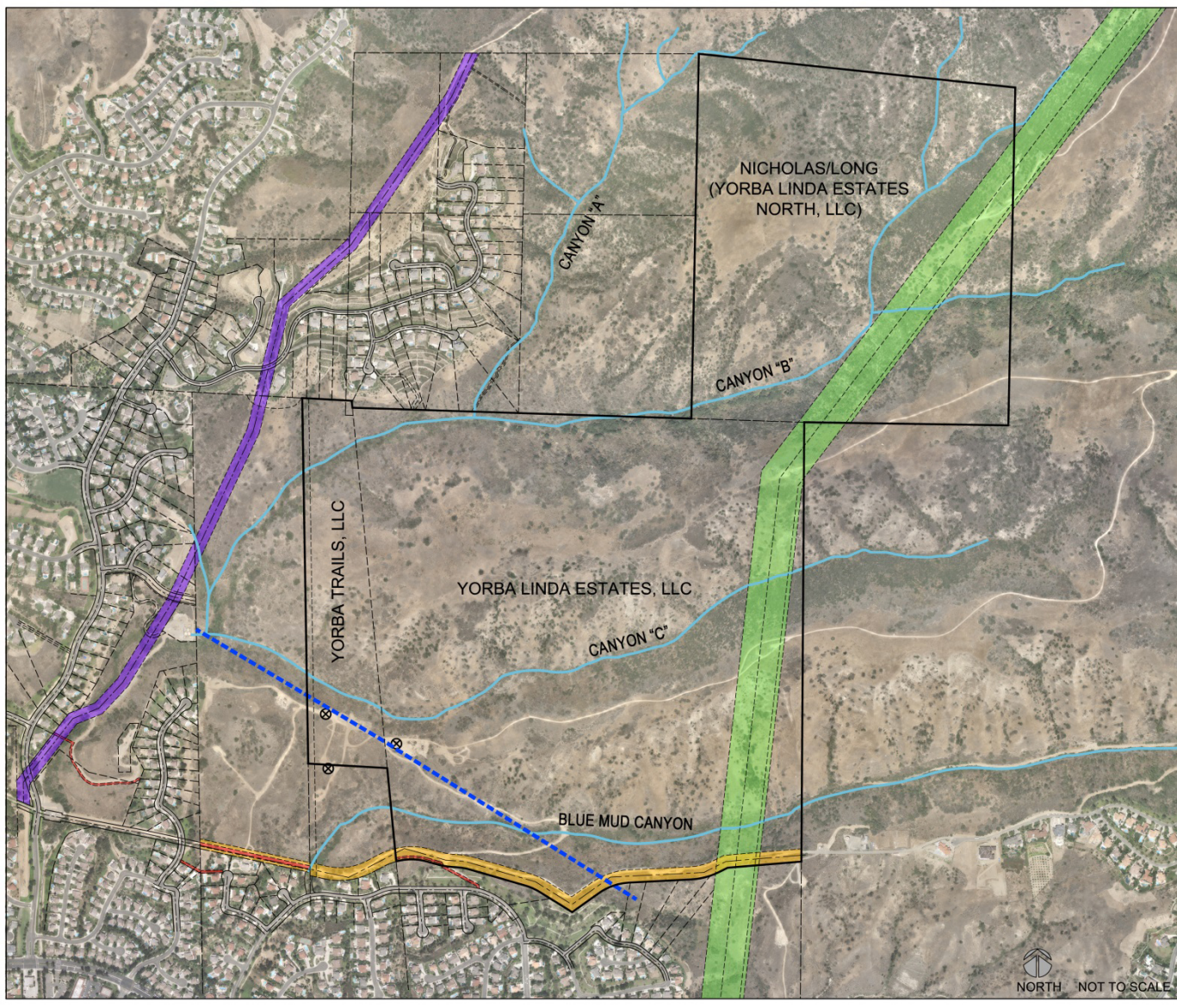


Exhibit 4-11
Planning Areas

ESPERANZA HILLS PLANNING AREAS



Esperanza Hills Phase 1
Large lot, low-density residential
neighborhood



Esperanza Hills Phase 2
Large lot, low-density residential
neighborhood

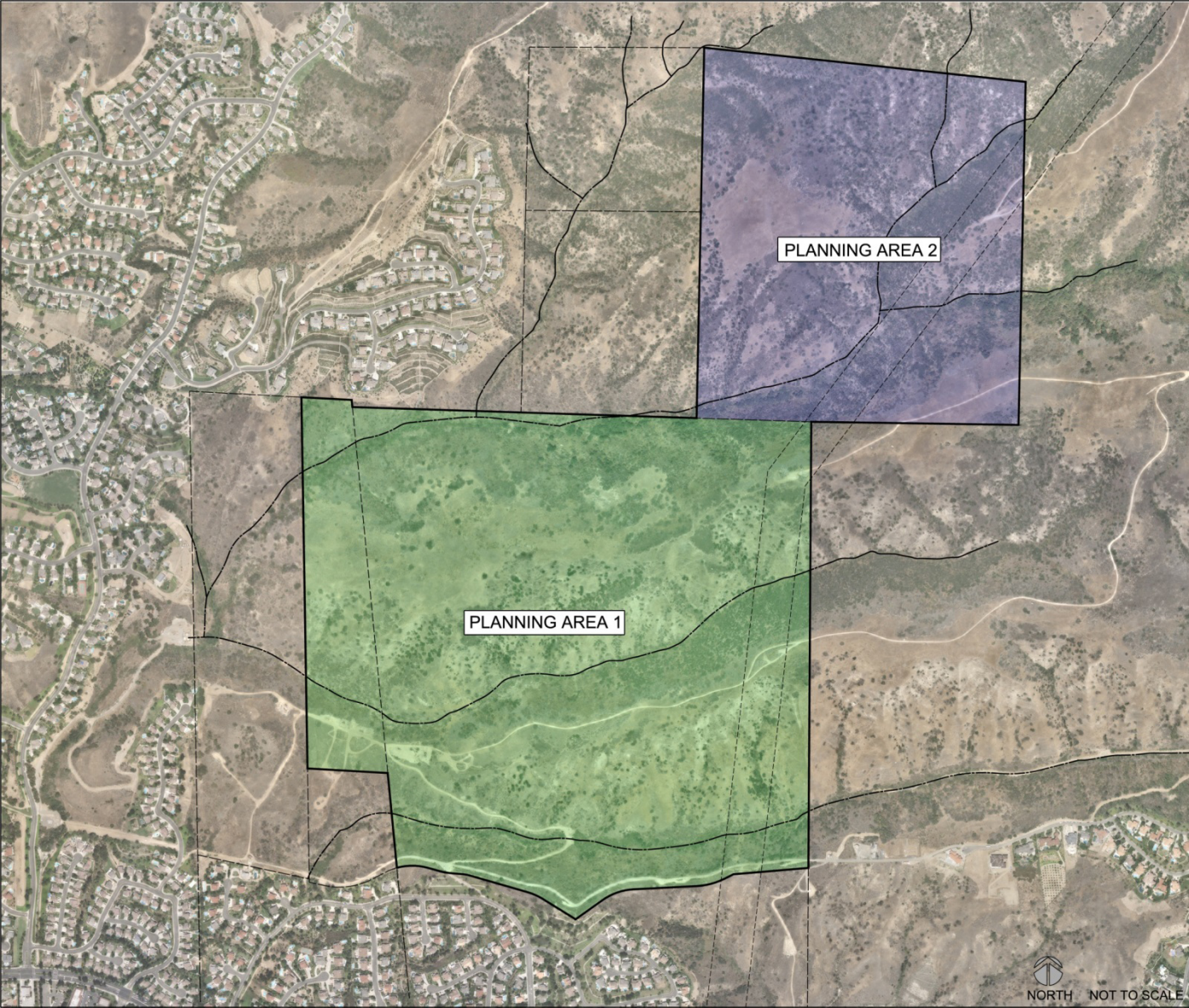


Exhibit 5-1
Scenic Highway Plan

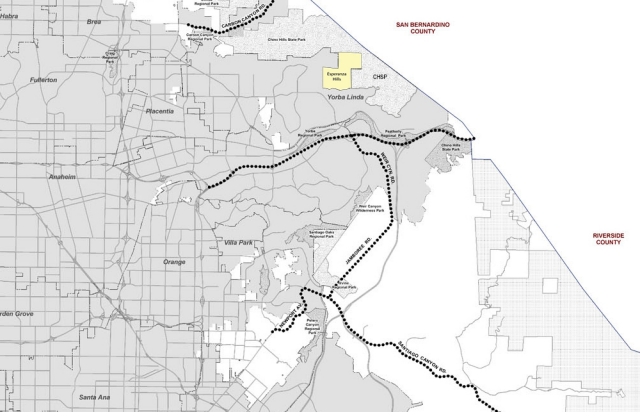


Exhibit 5-2

Chino Hills State Park Location Map, CHSP Brochure

WHERE IS CHINO HILLS STATE PARK?



Exhibit 5-63

Transportation Analysis Zones in the City of Yorba Linda (Portion),

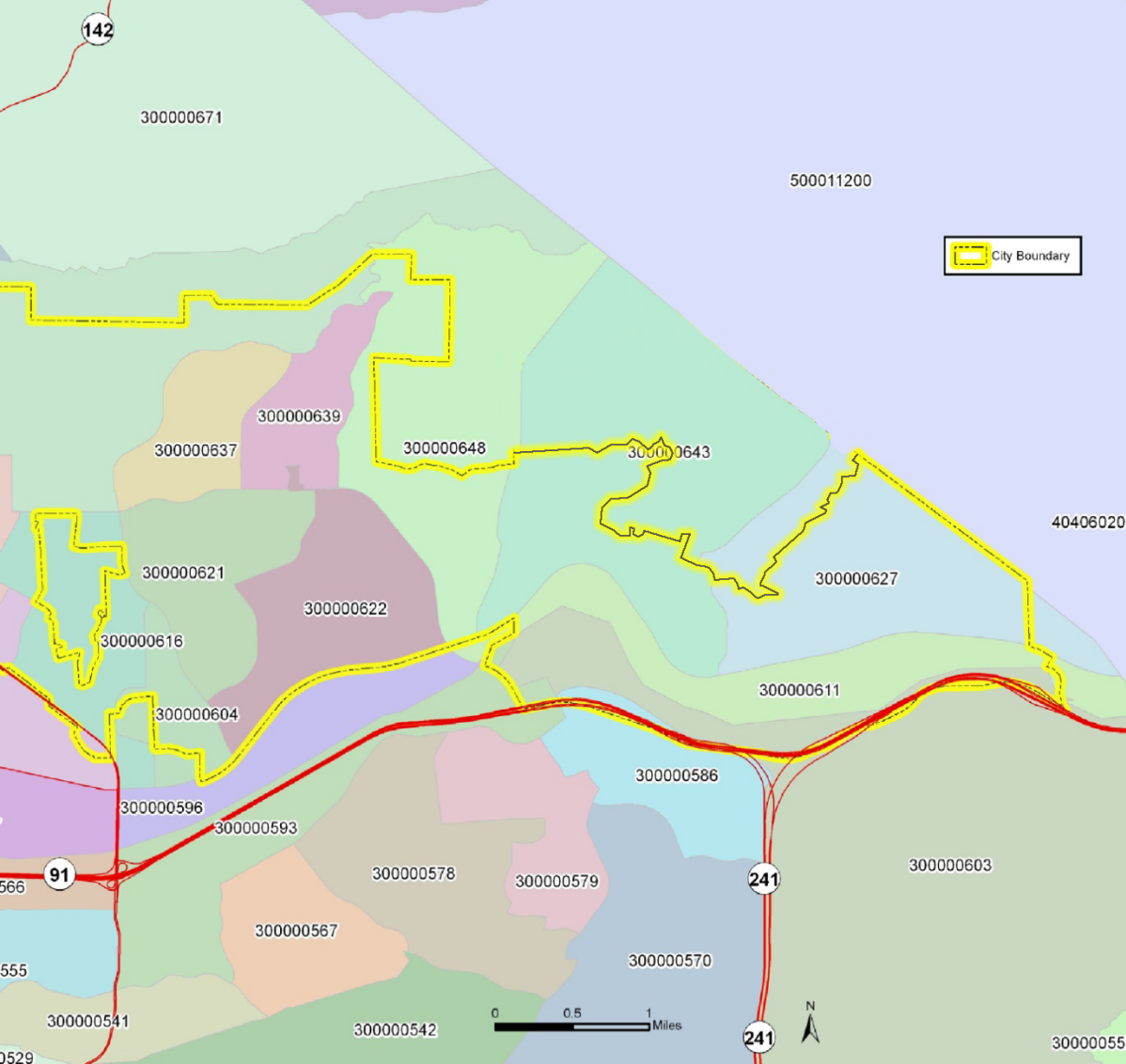
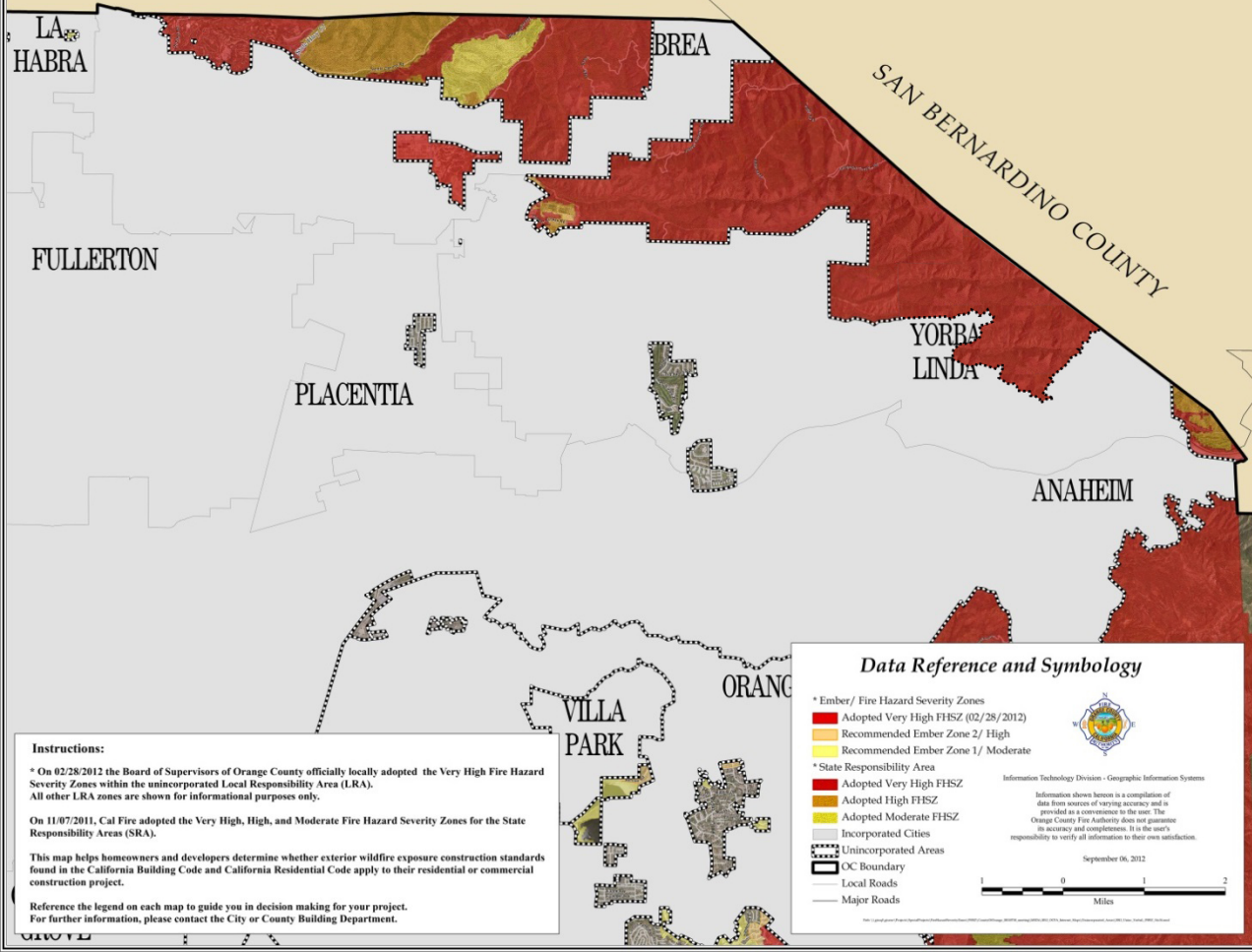


Exhibit 5-65

**Orange County Fire Authority Unincorporated Yorba Linda and La
Habra Ember/Fire Hazard Severity Zones**

Orange County Fire Authority

Unincorporated Yorba Linda and La Habra
Ember/ Fire Hazard Severity Zones



Instructions:

* On 02/28/2012 the Board of Supervisors of Orange County officially locally adopted the Very High Fire Hazard Severity Zones within the unincorporated Local Responsibility Area (LRA).
All other LRA zones are shown for informational purposes only.

On 11/07/2011, Cal Fire adopted the Very High, High, and Moderate Fire Hazard Severity Zones for the State Responsibility Areas (SRA).

This map helps homeowners and developers determine whether exterior wildfire exposure construction standards found in the California Building Code and California Residential Code apply to their residential or commercial construction project.

Reference the legend on each map to guide you in decision making for your project.
For further information, please contact the City or County Building Department.

Data Reference and Symbology

- * Ember/ Fire Hazard Severity Zones
 - Red Adopted Very High FHSZ (02/28/2012)
 - Orange Recommended Ember Zone 2/ High
 - Yellow Recommended Ember Zone 1/ Moderate
- * State Responsibility Area
 - Red outline Adopted Very High FHSZ
 - Orange outline Adopted High FHSZ
 - Yellow outline Adopted Moderate FHSZ
- Incorporated Cities
 - Black outline
- Unincorporated Areas
 - Dotted outline
- OC Boundary
 - Thick black line
- Local Roads
 - Thin black line
- Major Roads
 - Grey line



Information Technology Division - Geographic Information Systems

Information shown herein is a compilation of data from sources of varying accuracy and is provided as a convenience to the user. The Orange County Fire Authority does not guarantee its accuracy and completeness. It is the user's responsibility to verify all information to their own satisfaction.

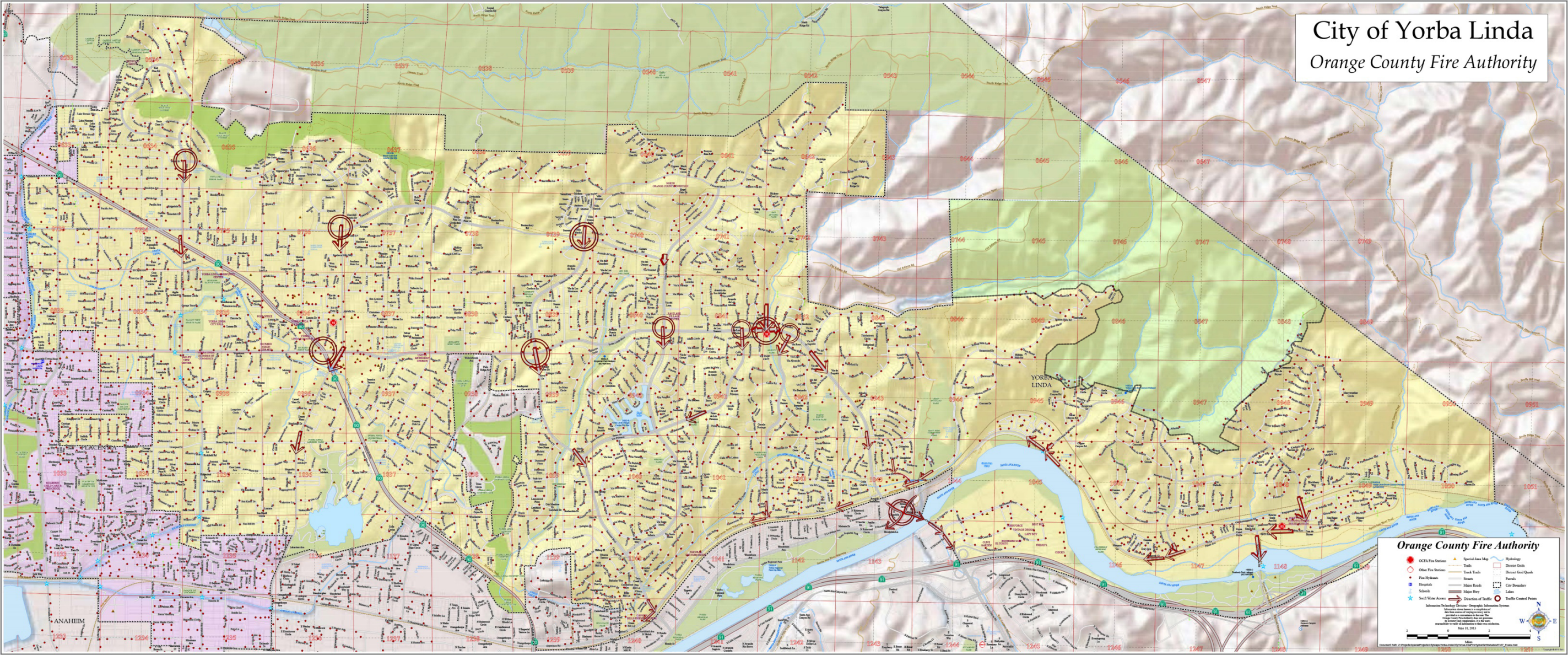
September 06, 2012



Exhibit 5-68

**Evacuation Plan, Orange County Sheriff's Department/City of
Yorba Linda**

City of Yorba Linda Orange County Fire Authority



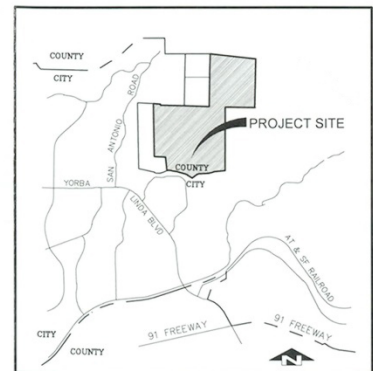
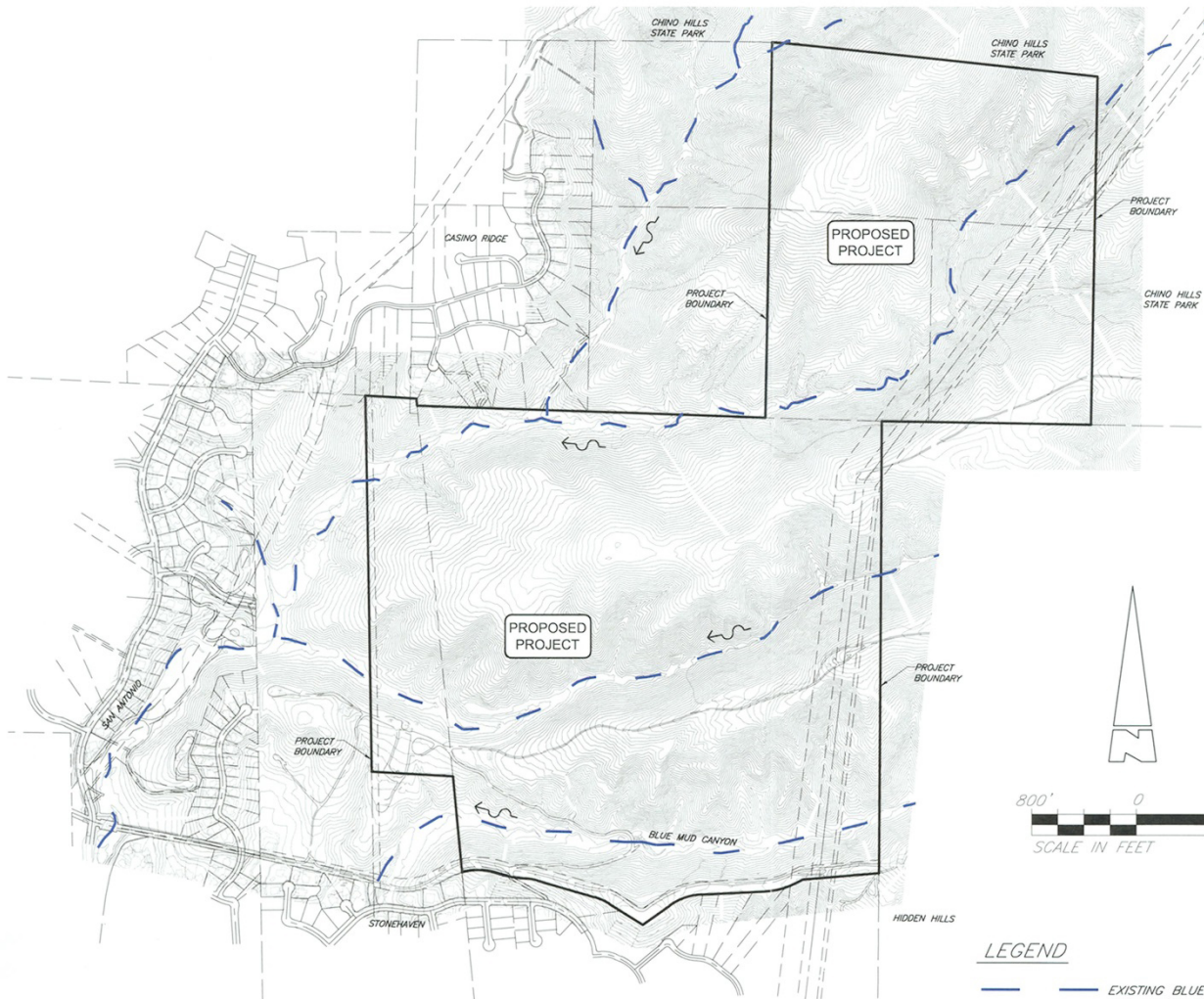
Orange County Fire Authority

● OCTA Fire Station	▲ Special Area Map	□ Substation
○ Other Fire Station	— Trunk Trunk	□ District Grid Quads
● Fire Hydrant	— Street	□ Parcel
■ Fire Hydrant	— Alley Road	□ City Boundary
■ School	— Major Hwy	□ Lake
★ Sewer Water Access	→ Direction of Traffic	○ Traffic Control Point

Information Technology Division - Geographic Information System
Developed using ArcGIS 10.2.2
Copyright © 2012 by Orange County Fire Authority
All rights reserved. No part of this publication may be reproduced without the prior written permission of Orange County Fire Authority.
Map Date: 10/15/2012

Exhibit 5-84

Esperanza Hills Existing Topography and Drainage Areas



VICINITY MAP



LEGEND

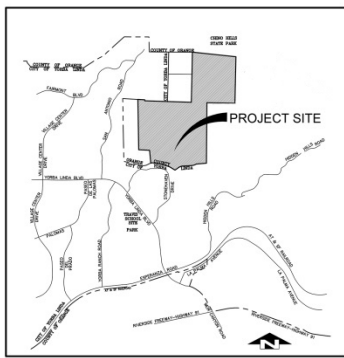
 EXISTING BLUELINE STREAM PER USGS MAP

ESPERANZA HILLS
EXHIBIT A
EXISTING TOPOGRAPHY AND BLUELINE STREAMS
KWC ENGINEERS
CIVIL ENGINEERS • PLANNERS • SURVEYORS 1880 COMPTON AVENUE, SUITE 100 • GORHAM, GA. 30887-1334 • 951-734-2130

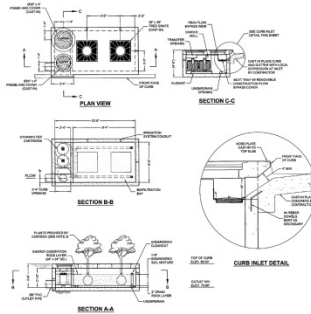
Exhibit 5-91

**Esperanza Hills CWQMP Best Management Practices – Option 1,
Stonehaven Drive**

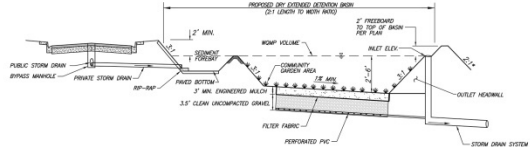
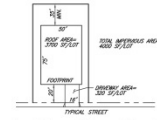
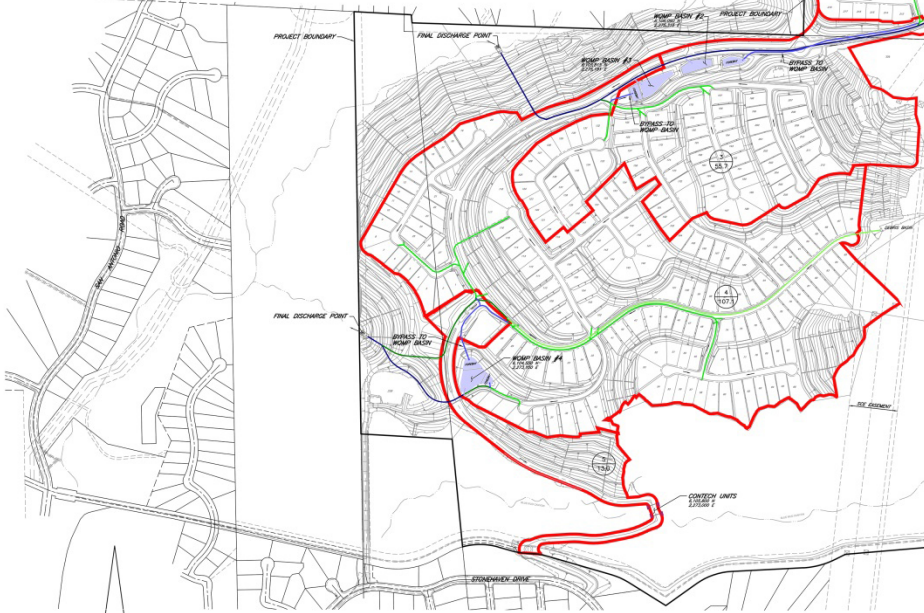
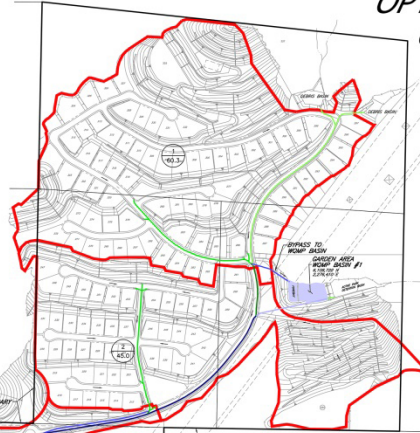
ESPERANZA HILLS OPTION 1 STONEHAVEN DR CWQMP BMP EXHIBIT



VICINITY MAP



CONTECH URBAN GREEN BIO-FILTER
(NOT TO SCALE)



WQMP BASIN SECTION:
DRY EXTENDED DETENTION BASIN
(NOT TO SCALE)

LEGEND

- WQMP BASIN TRIBUTARY AREA BOUNDARY
- BASIN NUMBER
- A1 TRIBUTARY AREA (ACRES)
- PROPOSED WQMP BASINS
- OFFSITE STORM DRAIN FROM DEBRIS BASINS
- UNTREATED STORM DRAIN PIPE
- 24-36" FLOW BYPASS STORM DRAIN PIPE
- UNTREATED STORM DRAIN PIPE TO WQMP BASIN
- TREATED STORM DRAIN PIPE FROM WQMP BASIN
- TREATED STORM DRAIN MANHOLE PIPE
- PROPOSED CONTECH U.G. BIO-FILTERS
- PROPOSED FLOW DIRECTION

Basin	Area (A1)	Ownership	Maintenance
1	0.8	N.G.A.	N.G.A.
2	0.4	N.G.A.	N.G.A.
3	0.3	N.G.A.	N.G.A.
4	1.0	N.G.A.	N.G.A.

NOTES

1. ALL UTILITY AND MANUFACTURED SLOPES NOT INCLUDED WITHIN RESIDENTIAL LOTS SHALL BE MAINTAINED BY THE A.G.A.
2. ALL STORM DRAIN SYSTEMS WITHIN PRIVATE STREETS SHALL BE MAINTAINED BY COUNTY OF ORANGE, PUBLIC WORKS, EXCEPT FOR PIPES TO AND FROM WQMP BASINS.



PREPARED FOR
YORBA LINDA ESTATES, L.L.C.
7114 EAST STATION DRIVE, SUITE 350
SOUTHDALE, AZ 85211
(408) 894-5262

NO.	DATE	DESCRIPTION	BY	DATE	CHECKED	DATE
1	12-11-13	ISSUED BMP PLAN SYSTEM TO CITY-ORANGE				
2						
3						

APPROVED BY COUNTY OF ORANGE
COMMUNITY DEVELOPMENT DEPARTMENT



SEAL-ENGINEER
KUC ENGINEERS
1880 SHARPLEY AVENUE, SUITE 100, CHANDLER, ARIZONA 85224-4311-764-1310
PREPARED BY: VICTOR A. ELIA
DATE: 8/20/13

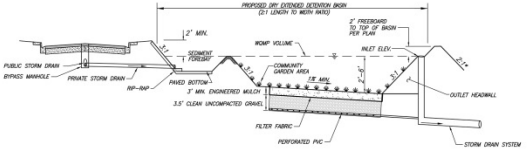
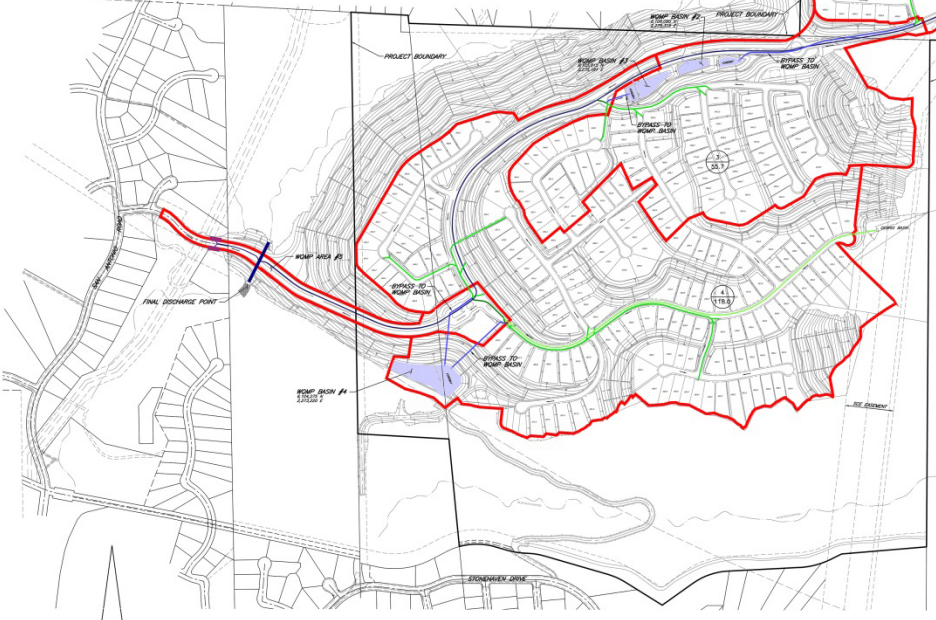
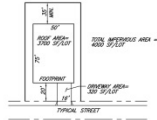
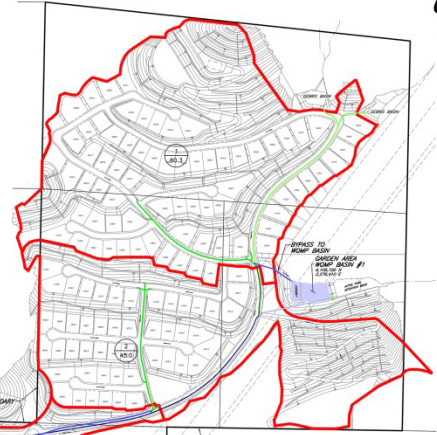
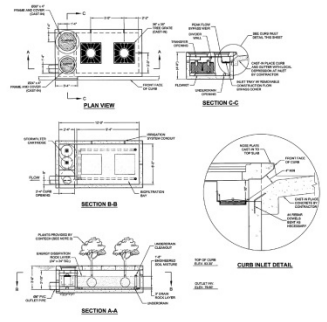
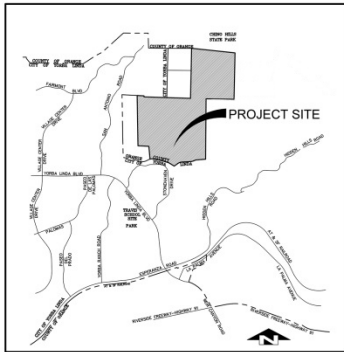
CONCEPTUAL
PLANNING APPLICATION NO. PA 120037
ESPERANZA HILLS OPTION 1
CWQMP BMP EXHIBIT
COUNTY OF ORANGE

SHEET NO.
1
I of 1 SHEETS

Exhibit 5-92

**Esperanza Hills CWQMP Best Management Practices – Option 2,
Aspen Way**

ESPERANZA HILLS OPTION 2 ASPEN WAY CWQMP BMP EXHIBIT



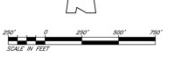
LEGEND

- WQMP BASIN TRIBUTARY AREA BOUNDARY
- A1 BASIN NUMBER
- A2 TRIBUTARY AREA (ACRES)
- PROPOSED WQMP BASINS
- OFFSITE STORM DRAIN FROM DEBRIS BASINS
- UNTREATED STORM DRAIN PIPE
- 3/2-1/8 FLOW BYPASS STORM DRAIN PIPE
- UNTREATED STORM DRAIN PIPE TO WQMP BASIN
- TREATED STORM DRAIN PIPE FROM WQMP BASIN
- TREATED STORM DRAIN MAINLINE PIPE
- PROPOSED CONTECH I.L.D. BIO-FILTERS
- PROPOSED FLOW DIRECTION

BASIN	AREA (AC)	OWNER/IMP	MAINTENANCE
1	0.8	N/A	N/A
2	0.4	N/A	N/A
3	0.3	N/A	N/A
4	1.4	N/A	N/A

NOTES

1. ALL NATURAL AND MANUFACTURED SLOPES NOT INCLUDED WITHIN RESIDENTIAL LOTS SHALL BE MAINTAINED BY THE N/A.
2. ALL STORM DRAIN SYSTEMS WITHIN PRIVATE STREETS SHALL BE MAINTAINED BY COUNTY OF ORANGE, PUBLIC WORKS, EXCEPT FOR PIPES TO AND FROM WQMP BASINS.



PREPARED FOR
YORBA LINDA ESTATES, L.L.C.
7114 EAST STATION DRIVE, SUITE 300
CORONA, CA 92621
(408) 984-5264

NO.	DATE	BY	REVISION	DATE	DATE
1	06/20/13	PREPARED	WQMP BASIN SECTION BY EEP-10000		
2	06/20/13	DESIGNED			

APPROVED BY COUNTY OF ORANGE
COMMUNITY DEVELOPMENT DEPARTMENT

SEAL-ENGINEER



KWC ENGINEERS
1988 CORONA BLVD., SUITE 100, CORONA, CA 92621
TEL: (949) 241-1111 FAX: (949) 241-1112
WWW.KWCENGINEERS.COM

PREPARED BY: VICTOR A. ELIA
DATE: 06/20/13
R.C.E. NO. 24005

CONCEPTUAL
PLANNING APPLICATION NO. PA 120037
ESPERANZA HILLS OPTION 2
CWQMP BMP EXHIBIT
COUNTY OF ORANGE

SHEET NO. 7
I of 10 sheets

Exhibit 5-95

FIRM - Flood Insurance Rate Map



MAP SCALE 1" = 1000'



PANEL 0090H

FIRM FLOOD INSURANCE RATE MAP ORANGE COUNTY, CALIFORNIA AND INCORPORATED AREAS

PANEL 90 OF 550

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
ORANGE COUNTY, UNINCORPORATED AREAS	060212	0090	H
YORBA LINDA, CITY OF	060208	0090	H
ANAHEIM, CITY OF	060213	0090	H

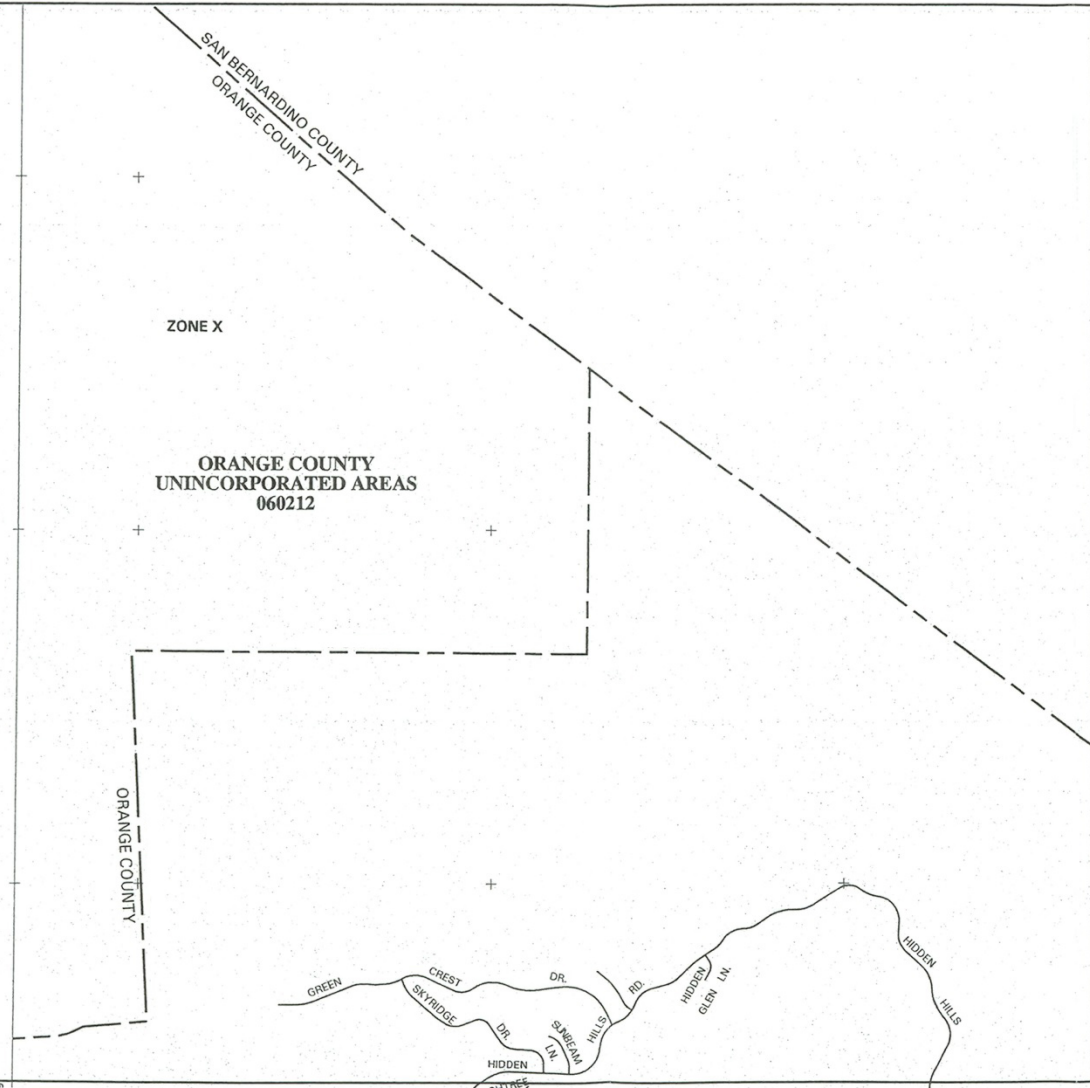
Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



**MAP NUMBER
06059C0090H**

**MAP REVISED:
FEBRUARY 18, 2004**

Federal Emergency Management Agency



This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Exhibit 5-96

Surrounding Land Uses

ESPERANZA HILLS SURROUNDING LAND USES AND DEVELOPMENT DENSITIES

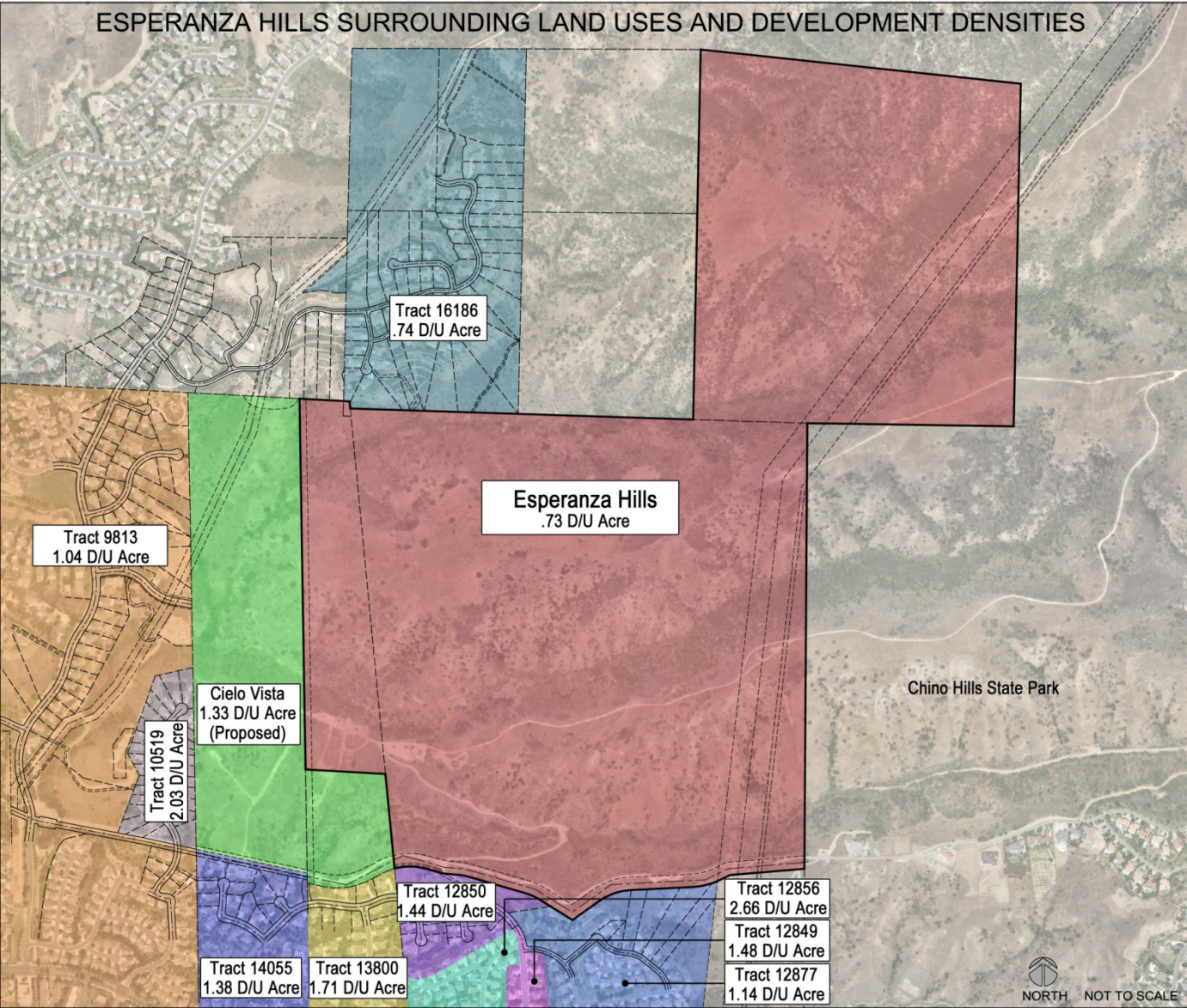
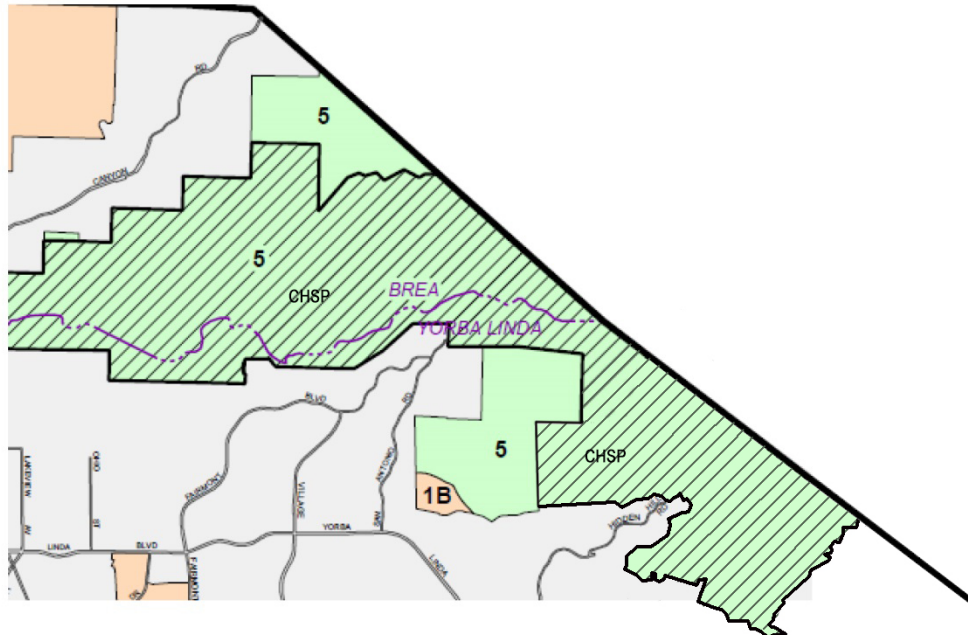


Exhibit 5-97

Orange County Land Use Map of Site Area



LAND USE DESIGNATIONS

RESIDENTIAL

- 1A** Rural Residential
Rural Residential Communities
(.025 - 0.5 DU/Ac.)
- 1B** Suburban Residential
Suburban Residential Communities
(0.5 - 18 DU/Ac.)
- 1C** Urban Residential
Urban Residential Communities
(18 and above DU/Ac.)

COMMERCIAL

- 2A** Community Commercial
- 2B** Regional Commercial

EMPLOYMENT

- 3** Employment

PUBLIC FACILITIES

- 4** Public Facilities
- 4 (LS)** Landfill Site
(An overlay designation)

OPEN SPACE

- 5** Open Space
- 5** Open Space Reserve
Generalized reserve boundaries
for informational purposes only.
- 5** Cleveland National Forest
For informational purposes only.
May contain private inholdings.

URBAN ACTIVITY CENTER

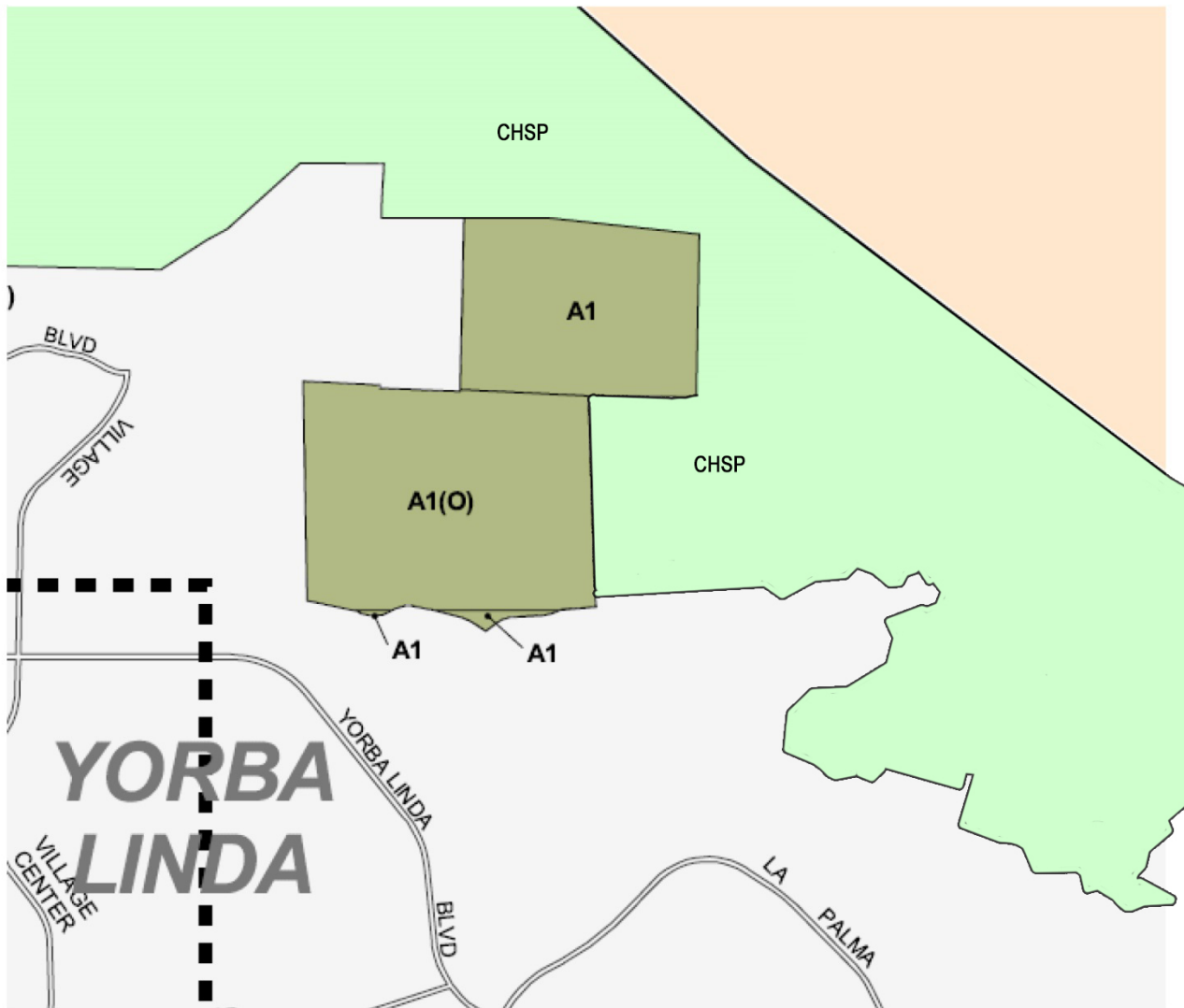
- 6** Urban Activity Center

- Cleveland National Forest
Congressional Boundary
- Sphere of Influence Boundary

Note: This map is for informational purposes depicting unincorporated areas within city spheres of influence for which these cities have adopted General Plans. Please refer to city plans for long-term land uses.

Exhibit 5-98

Orange County Zoning Map of Site Area



Source: Orange County Zoning Map of Project Area

Exhibit 5-99

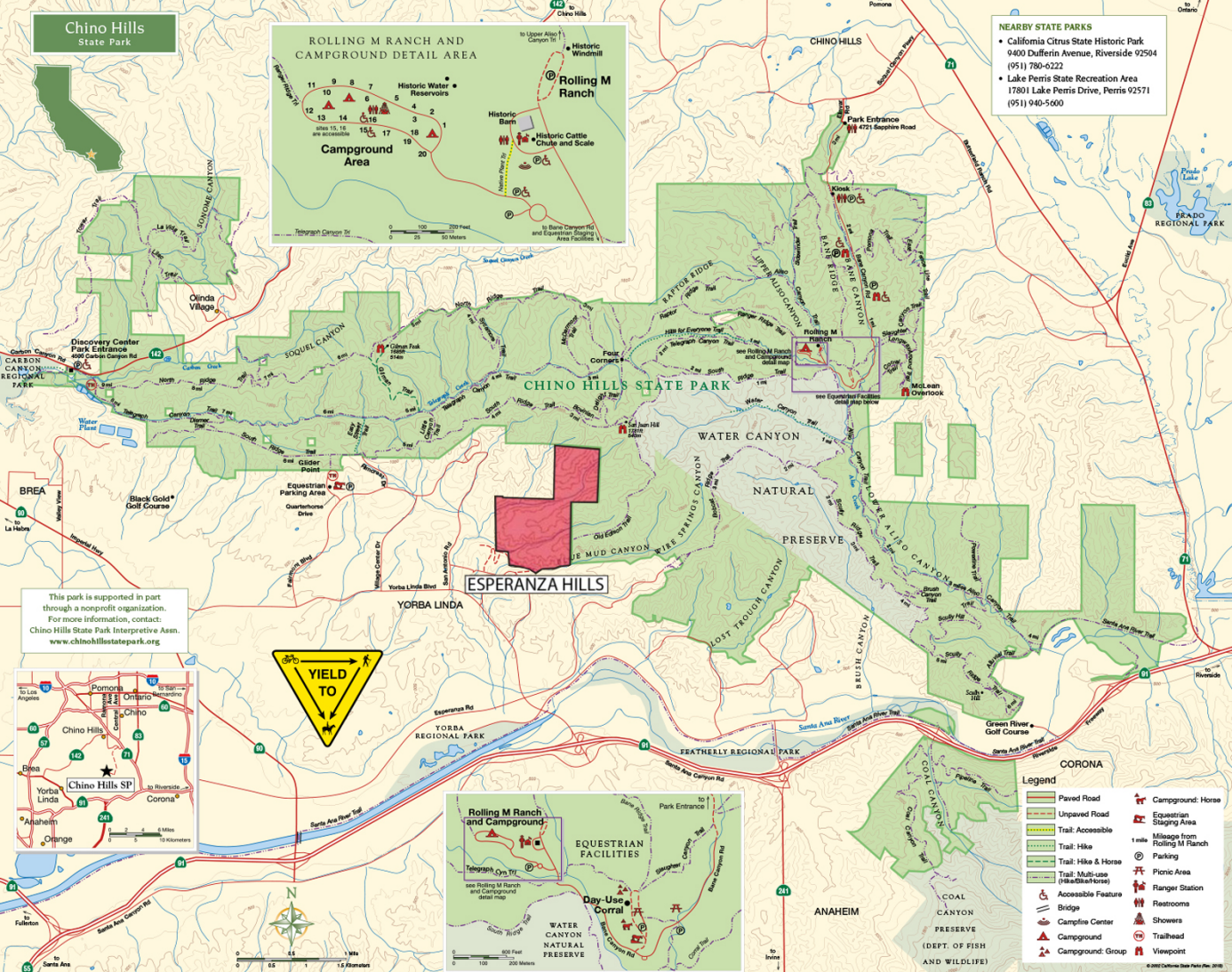
Chino Hills State Park Trails

Chino Hills State Park

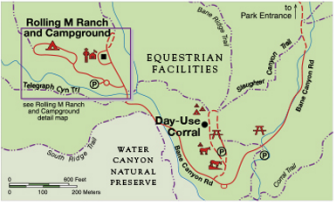
ROLLING M RANCH AND CAMPGROUND DETAIL AREA



- ### NEARBY STATE PARKS
- California Citrus State Historic Park
9400 Dufferin Avenue, Riverside 92504
(951) 780-6222
 - Lake Perris State Recreation Area
17801 Lake Perris Drive, Perris 92571
(951) 940-5600



This park is supported in part through a nonprofit organization. For more information, contact: Chino Hills State Park Interpretive Assn. www.chinohillstatepark.org



Legend

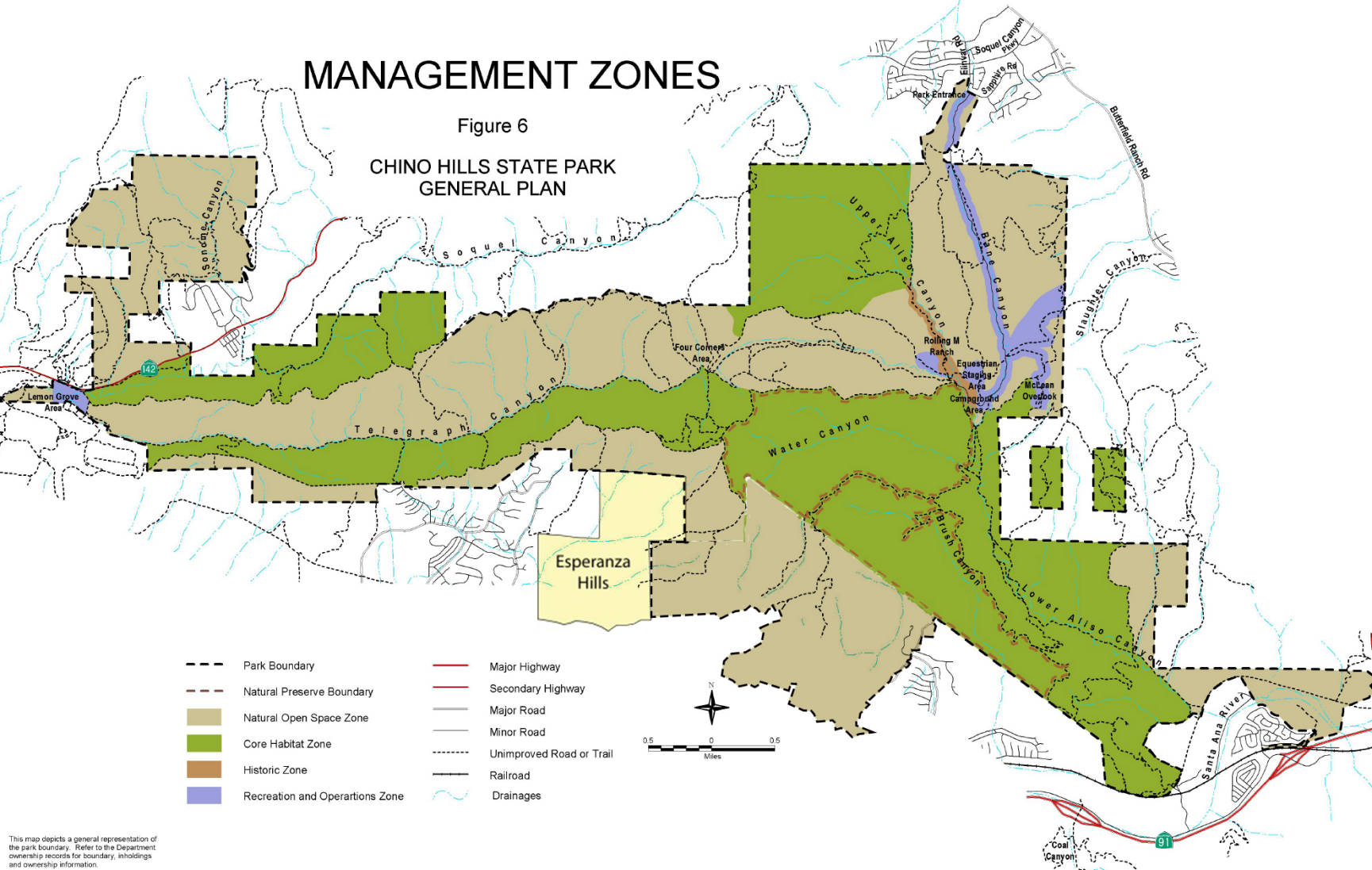
Exhibit 5-100














Chino Hills State Park General Plan

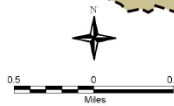
MANAGEMENT ZONES

Figure 6

CHINO HILLS STATE PARK GENERAL PLAN



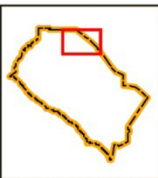
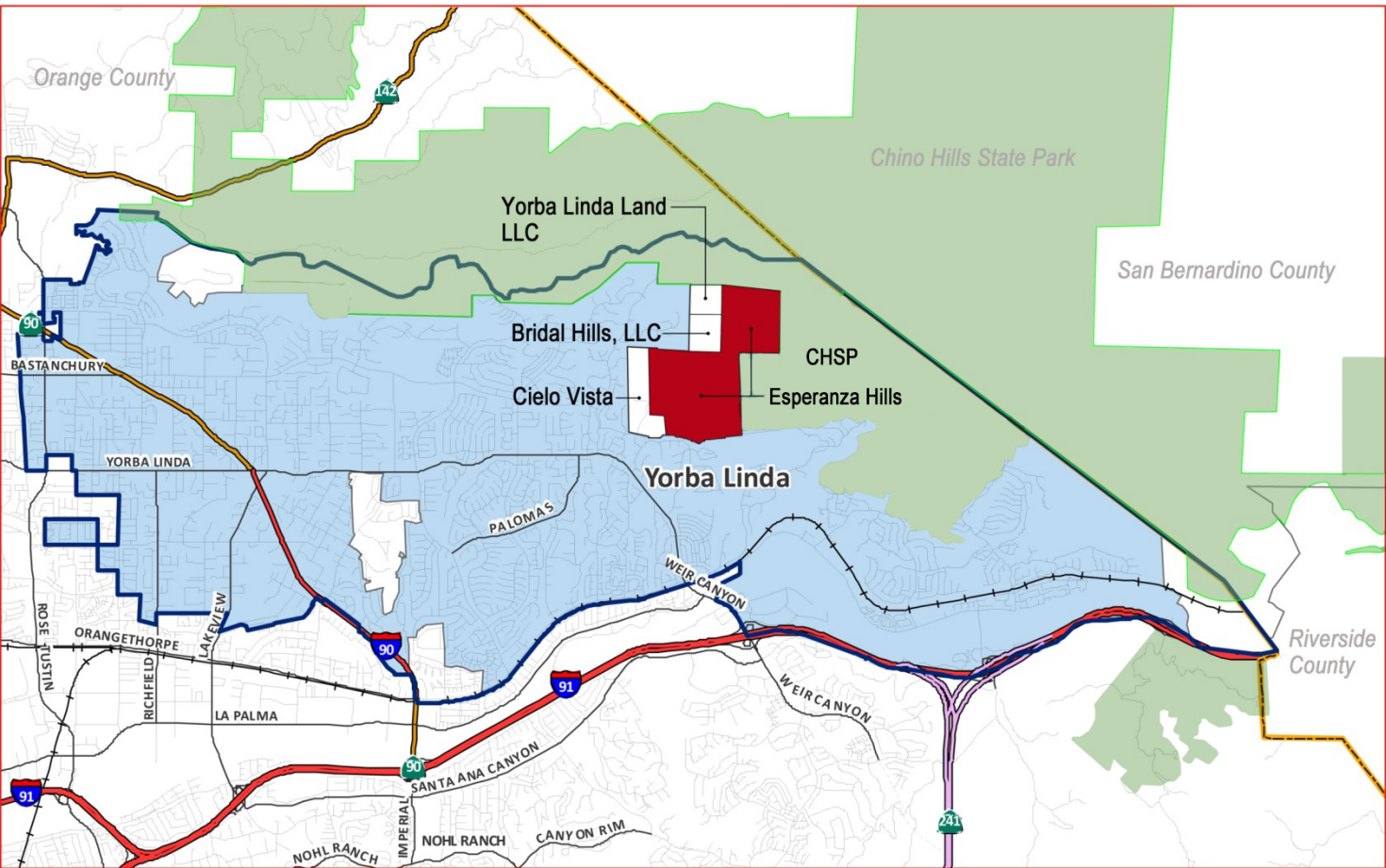
- | | |
|--|--|
|  Park Boundary |  Major Highway |
|  Natural Preserve Boundary |  Secondary Highway |
|  Natural Open Space Zone |  Major Road |
|  Core Habitat Zone |  Minor Road |
|  Historic Zone |  Unimproved Road or Trail |
|  Recreation and Operations Zone |  Railroad |
| |  Drainages |



This map depicts a general representation of the park boundary. Refer to the Department ownership records for boundary, inholdings and ownership information.

Exhibit 5-101

Sphere of Influence Map, from LAFCO



City of Yorba Linda Sphere of Influence Map

SOI Originally Adopted: 02/14/73
Last Reviewed: 11/12/08

Orange County
LAFCO

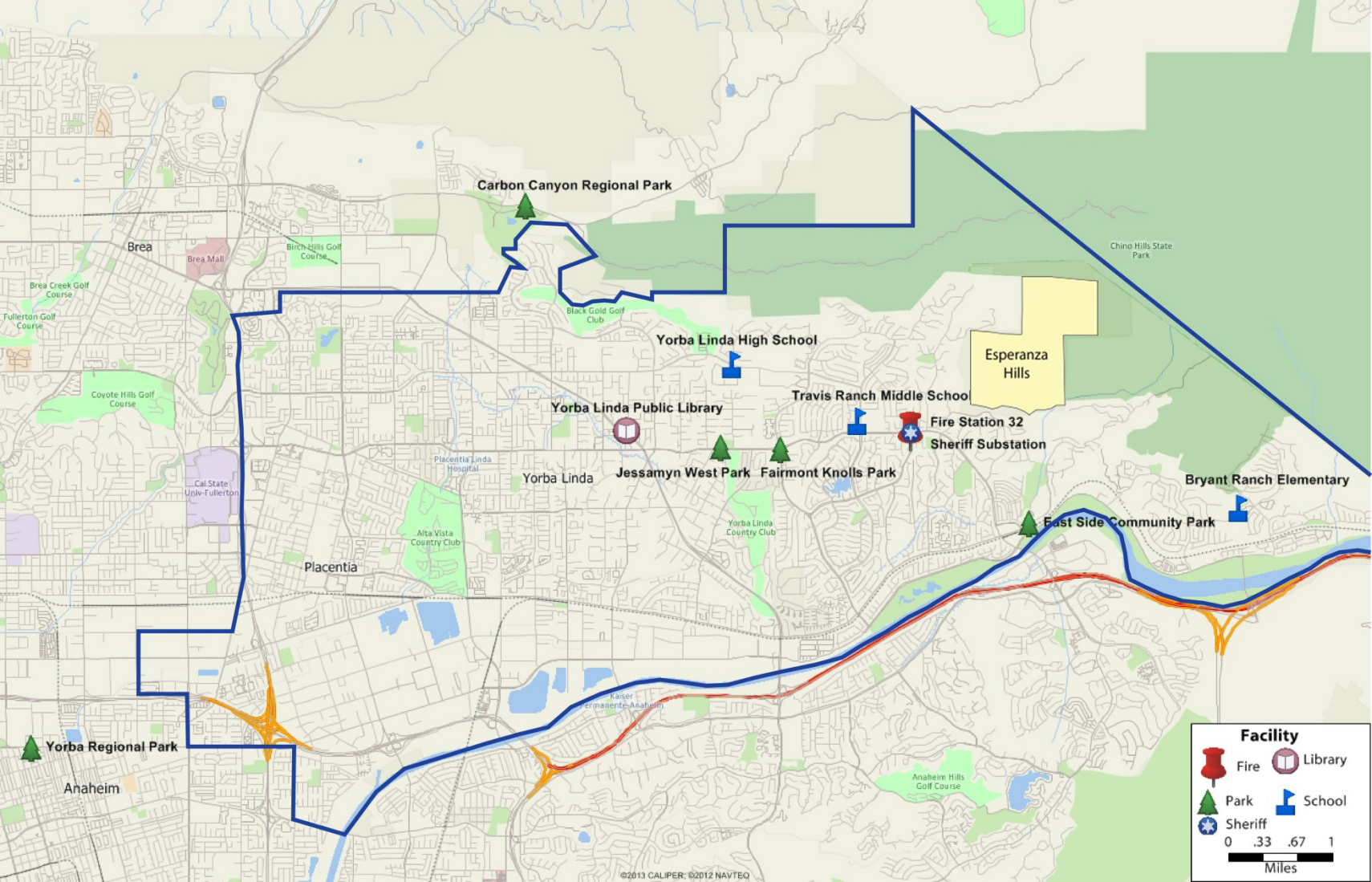
December 4, 2008

- Yorba Linda Sphere
- City of Yorba Linda
- Orange County Boundary
- Chino Hills State Park

F:\OCLAFCO SPHERE MAPS\Current Sphere Maps\District Sphere Maps\YorbaLinda.pdf

Exhibit 5-108

Public Facilities Recreation Locations



Facility

-  Fire
-  Library
-  Park
-  School
-  Sheriff

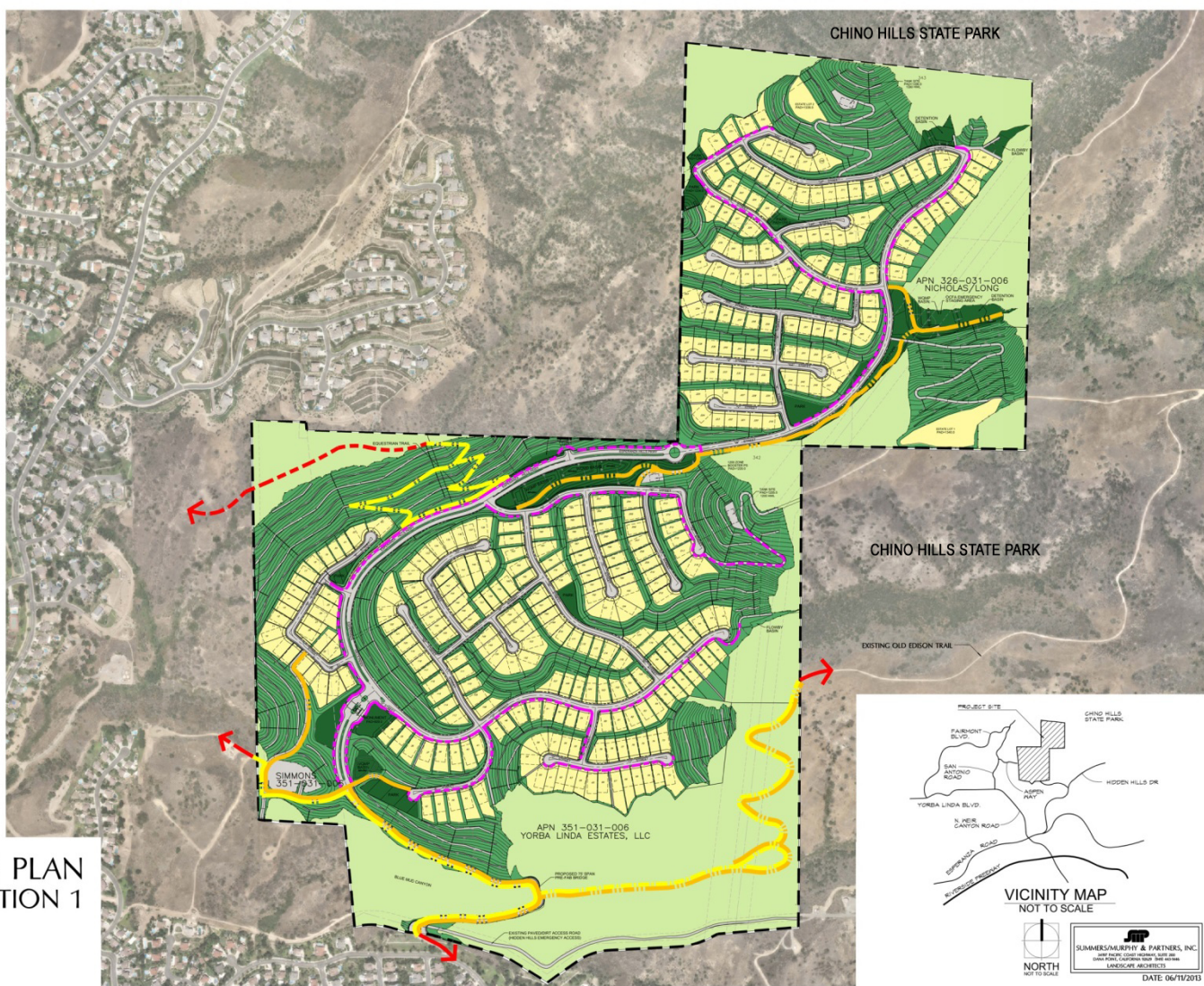
0 .33 .67 1
Miles

Exhibit 5-125

Conceptual Trails Plan, Option 1 – Stonehaven

TRAILS LEGEND

- - - EXISTING TRAILS
- - - PROPOSED EQUESTRIAN TRAILS
- - - PROPOSED MULTI-USE TRAILS
- - - PROPOSED PEDESTRIAN WALKS



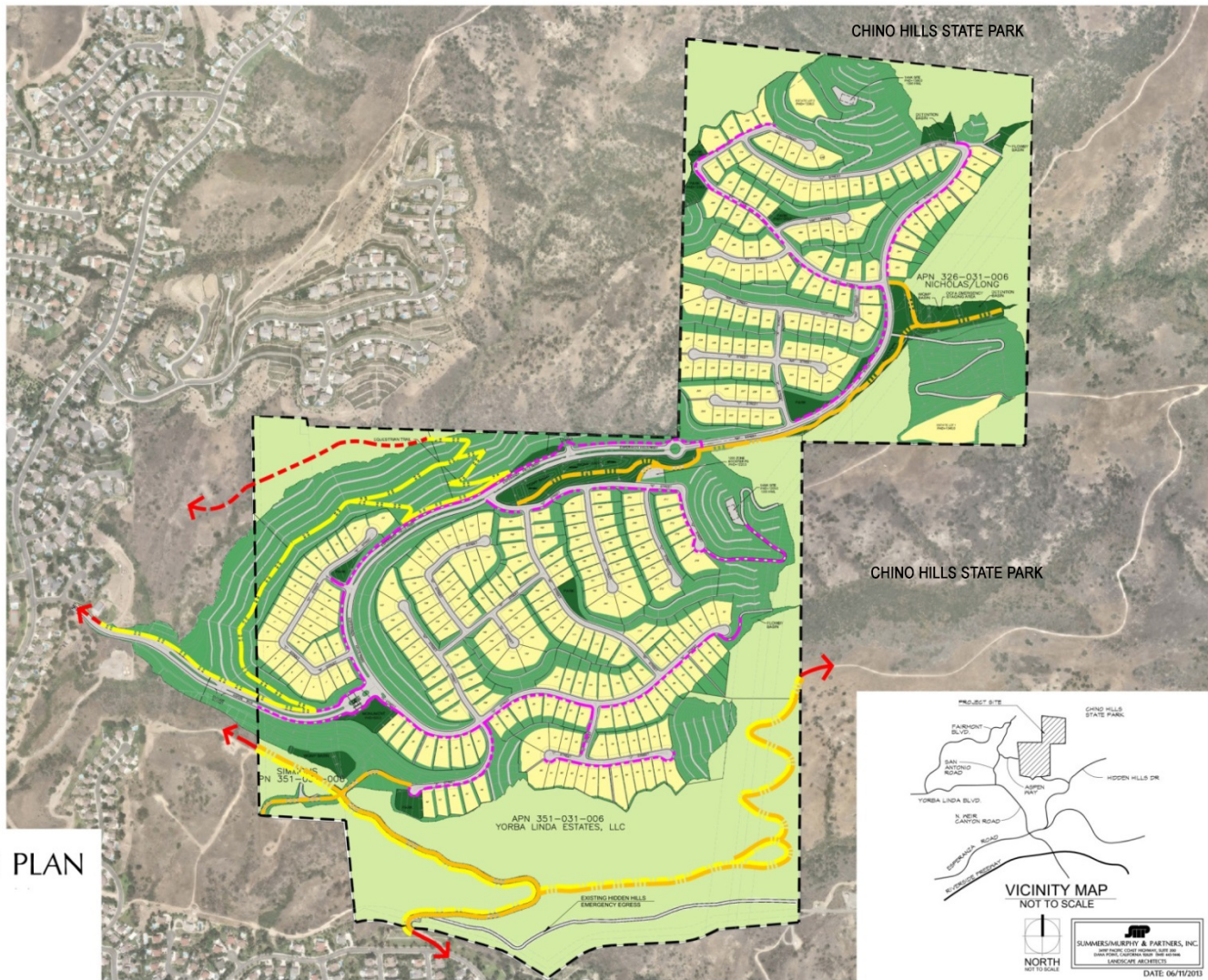
**CONCEPTUAL TRAILS PLAN
STONEHAVEN DRIVE OPTION 1
ESPERANZA HILLS
YORBA LINDA, CALIFORNIA**

Exhibit 5-126

Conceptual Trails Plan, Option 2 – Aspen Way

TRAILS LEGEND

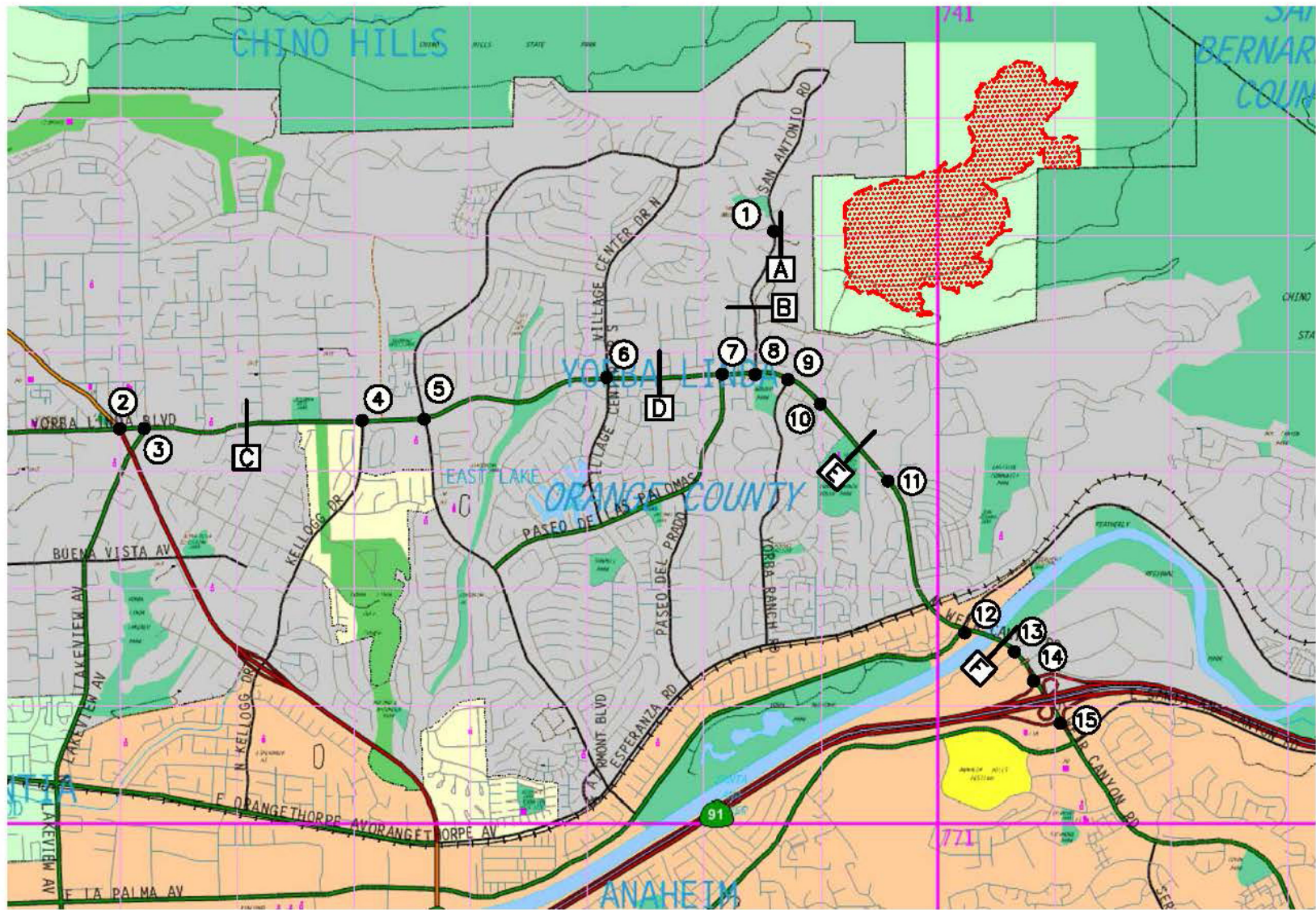
- EXISTING TRAILS
- PROPOSED EQUESTRIAN TRAILS
- PROPOSED MULTI-USE TRAILS
- PROPOSED PEDESTRIAN WALKS



**CONCEPTUAL TRAILS PLAN
ASPEN WAY OPTION 2
ESPERANZA HILLS
YORBA LINDA, CALIFORNIA**

Exhibit 5-127

Key Intersection Map, from Thomas Brothers



n:\3200\2123281 - yorba linda estabas, yorba linda.dwg 32811-1.dwg LDF 08:20:38 11-15-2012 agular

**LINSCOTT
LAW &
GREENSPAN**
engineers



SOURCE: THOMAS BROS.

KEY

- = STUDY INTERSECTION
- = STUDY ROADWAY SEGMENT
- = PROJECT SITE

FIGURE 1-1








VICINITY MAP
 ESPERANZA HILLS, YORBA LINDA

Exhibit 5-163

Physical Characteristics

ESPERANZA HILLS PHYSICAL CHARACTERISTICS

The location of these graphics is a generalization and approximation only, and as such is not intended to be exact.

-  Intermittent Drainage Area
Source: Glerin Lukos Associates
(Preliminary Delineation)
-  Aguiet Priolo Fault Line
(Whittier Fault)
Located by American Geotech
-  SCE Easement
(Southern California Edison)
-  Yorba Linda Water District Easement
-  Metropolitan Water District Easement
-  Southern California Gas Co. Easement
-  Oil Well Location

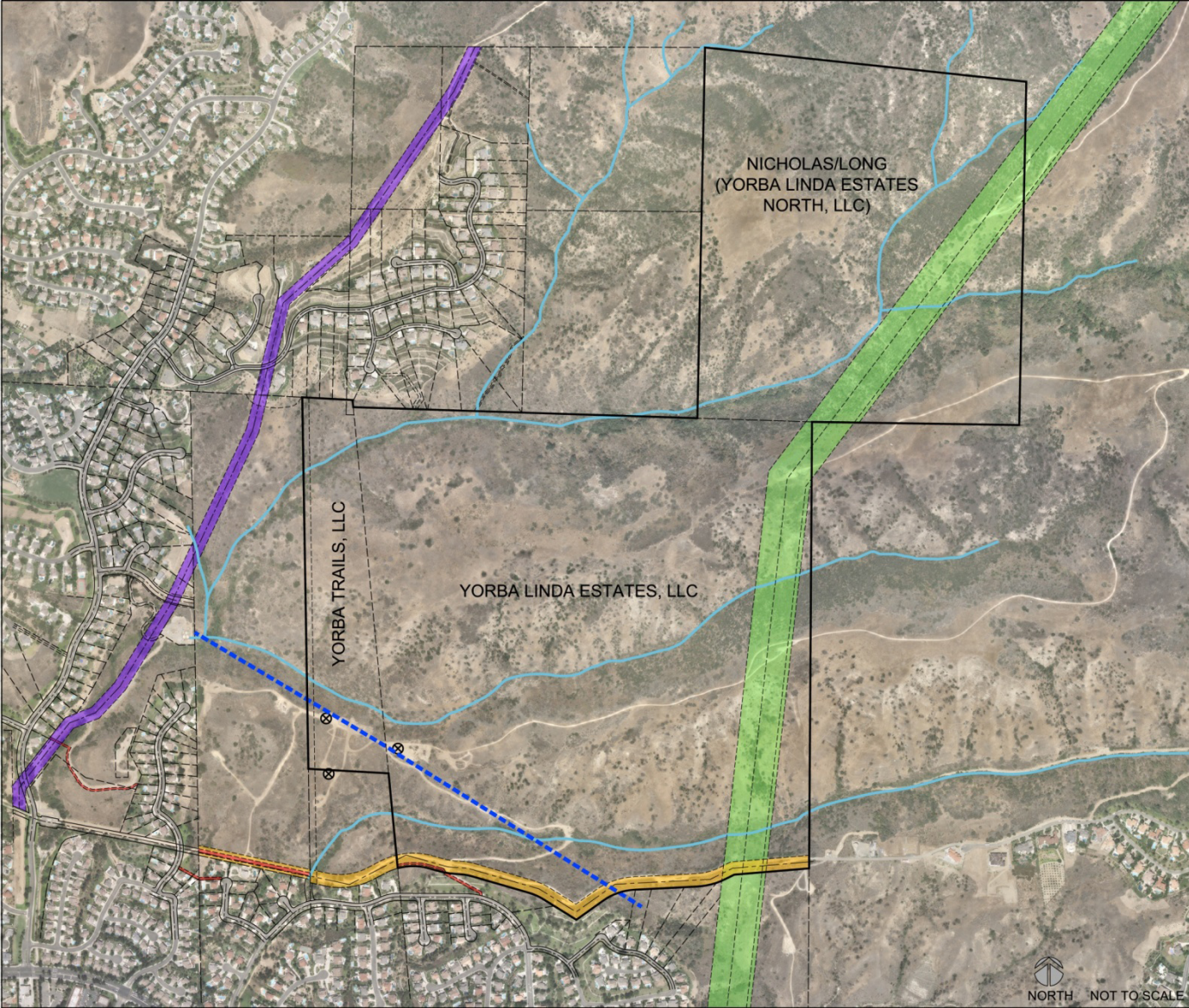
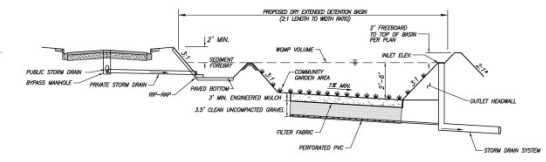
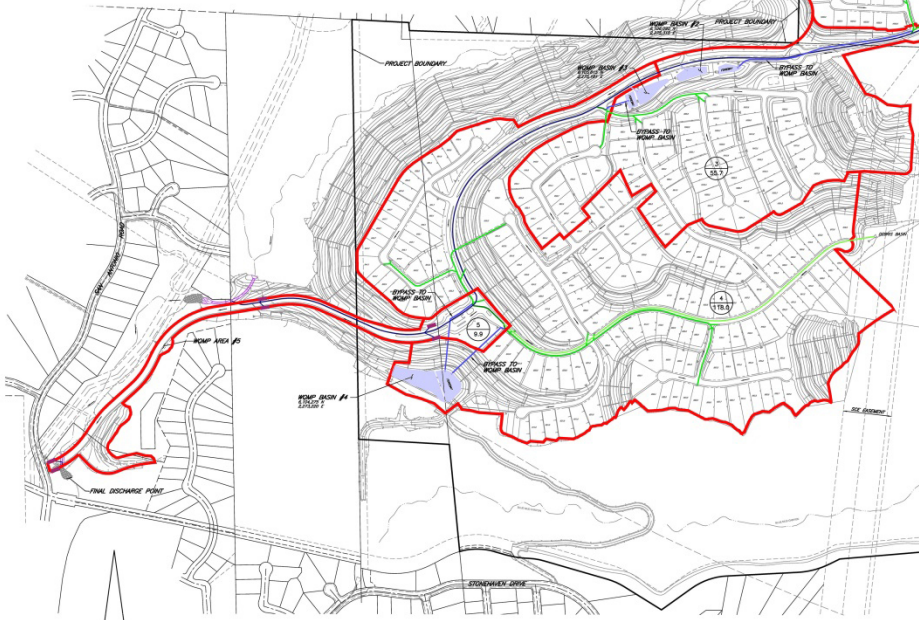
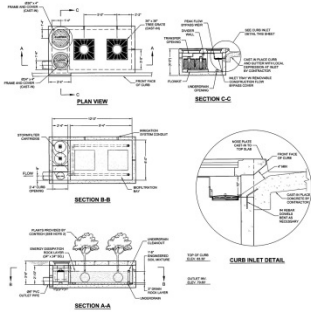
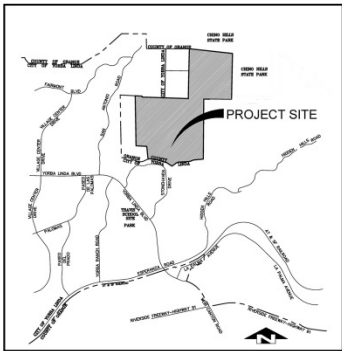


Exhibit 6-6

CWQMP BMPs – Option 2A, San Antonio Road

ESPERANZA HILLS OPTION 2A SAN ANTONIO ROAD CWQMP BMP EXHIBIT



LEGEND

- WOMP BASIN TRIBUTARY AREA BOUNDARY
- BASIN NUMBER
- TRIBUTARY AREA (ACRES)
- PROPOSED WOMP BASIN
- OFFSITE STORM DRAIN FROM OVERSIZED BASINS
- UNTREATED STORM DRAIN PIPE
- 24-36" FLOW BYPASS STORM DRAIN PIPE
- UNTREATED STORM DRAIN PIPE TO WOMP BASIN
- TREATED STORM DRAIN PIPE FROM WOMP BASIN
- TREATED STORM DRAIN MANHOLE PIPE
- PROPOSED CONTECH U.S. BIO-FILTERS
- PROPOSED FLOW DIRECTION

BASIN	AREA (AC)	ORIGINSHIP	MAINTENANCE
1	0.8	H.G.A.	H.G.A.
2	0.4	H.G.A.	H.G.A.
3	0.8	H.G.A.	H.G.A.
4	1.4	H.G.A.	H.G.A.

NOTES

- ALL MATERIAL AND MANUFACTURED SLOPES NOT INCLUDED WITHIN RESIDENTIAL LOTS SHALL BE MAINTAINED BY THE H.G.A.
- ALL STORM DRAIN SYSTEMS WITHIN PRIVATE STREETS SHALL BE MAINTAINED BY COUNTY OF ORANGE, PUBLIC WORKS, EXCEPT FOR PIPES TO AND FROM WOMP BASINS.



PREPARED FOR
YORBA LINDA ESTATES, L.L.C.
7714 EAST STRETTON DRIVE, SUITE 300
SCOTTSDALE, AZ 85251
(408) 994-5264

APPROVED BY COUNTY OF ORANGE
COMMUNITY DEVELOPMENT DEPARTMENT

SEAL-ENGINEER

 PREPARED BY: VICTOR A. ELIA
 R.C.E. NO. 54835
 DATE: 5/20/15

KWC ENGINEERS
 10000 W. BOULEVARD, SUITE 200
 WESTLAKE, CALIFORNIA 91391-3411
 TEL: (818) 707-1111
 FAX: (818) 707-1112
 WWW.KWCENGINEERS.COM

CONCEPTUAL
 PLANNING APPLICATION NO. PA 120017
 ESPERANZA HILLS OPTION 2A
 CWQMP BMP EXHIBIT
 COUNTY OF ORANGE

DATE	DESCRIPTION	BY	CHECKED

Exhibit 6-34
Planning Areas

ESPERANZA HILLS PLANNING AREAS



1

Esperanza Hills Phase 1
Large lot, low-density residential
neighborhood



2

Esperanza Hills Phase 2
Large lot, low-density residential
neighborhood

PLANNING AREA 2

PLANNING AREA 1

Attachment C
Revised Table 5-9-19 -- Conformance with
Chino Hills State Park General Plan

Table 5-9-19 Chino Hills State Park General Plan Consistency

Goal	Analysis
<p>Buffers Goal: Establish, maintain, and protect buffers adjacent to Chino Hills State Park.</p>	<p>The Proposed Project is consistent with this goal by providing a ridgeline buffer to the east and a ridgeline buffer to the north which results in the residential lots for the Proposed Project not being visible from San Juan Peak or Blue Mud Canyon in CHSP. In addition, there is an approximately one-quarter mile buffer from CHSP through Blue Mud Canyon which will be preserved.</p> <p>No fuel modification has been located on CHSP and it is not necessary to access CHSP to maintain or install any fuel modification for any lot. The fuel modification for the estate lot immediately adjacent to CHSP will be entirely on site.</p> <p>No grading will be conducted on any portion of CHSP, either for construction of the Proposed Project or for maintenance in the future.</p>
<p>Wildlife Management Goal: Protect, perpetuate, and restore native wildlife populations and native aquatic species at Chino Hills State Park.</p>	<p>The Proposed Project is consistent with this goal as the Proposed Project provides for no grading on CHSP, and there are no listed sensitive wildlife populations immediately adjacent to the Project Site.</p> <p>There are no native aquatic species on site, as all drainage is ephemeral.</p> <p>The Proposed Project is also consistent with this goal with the inclusion of a regulation that prohibits outdoor cats and requires that dogs be restrained within the Project Site. Educational material will be distributed to each property owner concerning pet regulations, restriction on planting certain species, wildlife protection, and access to Chino Hills State Park.</p>
<p>Biocorridor Management Goal: Maintain and enhance the movement of native animals through the park and regional ecosystem</p>	<p>The Proposed Project is consistent with this goal as it does not interfere with the movement of native animals through CHSP.</p> <p>There are three important wildlife corridors in CHSP north of the Project Site, none of which connect CHSP with adjacent protected open space either traversed or connected to the Project Site. (Biological Report, pages 54-55). The Proposed Project serves as a "dead end" or "cul de sac" for the movement of larger mammals due the existing development surrounding the Project Site to the west and south. (Biological Report, page 54)</p> <p>Blue Mud Canyon is preserved as open space, which will continue to allow gnatcatchers and other species to continue to use it to the extent that it is currently used as a movement corridor for any wildlife species. Further, mitigation areas are being created in Blue Mud Canyon and in drainage D which will create riparian habitat for Least Bell's Vireo which currently does not exist today.</p>

Goal	Analysis
<p>Vegetation Management Goal: Restore and protect the native vegetation within CHSP through active resource management programs.</p>	<p>The Proposed Project is consistent with this goal, as it seems to preserve and protect native vegetation on the Proposed Project Site.</p> <p>The Proposed Project does not involve the restoration of native vegetation in CHSP, but it does provide for restoration of native vegetation on site, including the milkvetch, mariposa lily, and black walnut. The Proposed Project also provides for removal of non-native plant species and replacement of native plant species within fuel modification zones and Blue Mud Canyon, and proposed mitigation areas within Blue Mud Canyon and in drainage D will also create riparian habitat where none currently exist.</p> <p>The Proposed Project will also maintain the plant habitat necessary for the California Gnatcatcher to the extent that it currently exists on site, although no portion of the Proposed Project Site is currently occupied by the Gnatcatcher.</p>
<p>Wildfire Management Goal: Plan for the occurrence of wildfires in order to preserve sensitive park resources and protect human lives and structures.</p>	<p>The Proposed Project is consistent with this goal by planning for wildfires assuming that there will be no wildfire management plan for CHSP, so the Proposed Project provides for on-site fuel modification zones, fire breaks, removal of non-native plants prone to wildfire, hardened homes, an evacuation plan for the entire existing neighborhood, a Community Evacuation Plan for the Proposed Project, on site water storage that can be used for the Proposed Project and surrounding neighborhood, a fire apparatus access road separate from the main entrance road, fire staging areas for OCFA with gravity fed fire hydrants, and participation in the Ready Set Go program recommended by OCFA, as well as participation in the Alert OC early notification program.</p>
<p>Paleontological Resources Goal: Document and protect paleontological resources that are found within the park.</p>	<p>The Proposed Project is consistent with this goal as it studied paleontological resources expected to be found in this area, including in CHSP, and provided for a mitigation plan in the event that any resources were found on the Proposed Project Site during grading activities. According to the report, no significant paleontological resources have been found in the immediate area of the Project Site.</p>
<p>Cultural Resources Goal: Protect the archeological resources at CHSP.</p>	<p>The Proposed Project is consistent with this goal as it studied archeological resources for the Project Site and immediate area, including CHSP, and found no known archeological resources on the Proposed Project Site or CHSP within the immediate area.</p>
<p>Historic Resources Goal: Protect the significant historic sites at CHSP</p>	<p>The Proposed Project is consistent with this goal as it studied known significant historic sites on the Proposed Project Site and within CHSP near the Proposed Project and found that none existed.</p>
<p>Historic Electrical Towers and Utility Lines Goal: Preserve historic roads and trails and at the same time provide for visitor, Department, and utility company use.</p>	<p>The Proposed Project is consistent with this goal as it preserves the existing historic roads and trails that enter CHSP to provide for visitor access at the Old Edison Trail, and the Proposed Project, once completed, will continue to provide for Department and utility company use to access the utility lines on both the Proposed Project Site and CHSP.</p>

Goal	Analysis
<p>Aesthetics Resources Goal: Protect scenic features from man-made intrusions and preserve the visitor's experience of the natural landscape by minimizing adverse impacts to aesthetic resources.</p>	<p>The Proposed Project is consistent with this goal, as it was designed to be sensitive to off-site views of the development area from Chino Hills State Park by avoiding any residential development on the ridgelines that separate CHSP from the Proposed Project to the north and east. Although a limited portion of the Project will be viewed from San Juan Hill, the highest point within the park, all feasible Project Design Features have been incorporated into the Proposed Project to minimize visual impacts from that location. Additional discussion on aesthetics is found in Section 5.1, Aesthetics. The development areas are set back and below the major ridgelines, and all artificial lights shall be designed and located so that direct light rays shall be confined to the development area footprint consistent with night sky lighting practices to minimize artificial light impacts to the park. Design guidelines for the development of the Proposed Project include design features to reduce glare and a natural color palette to emulate the natural surroundings. Manufactured walls will be graded and planted to blend into natural adjoining slopes. No residential development will occur in Blue Mud Canyon, so only the main entrance road will be visible in approximately the same location as the existing main entrance road.</p>
<p>Recreational Use Goal: Provide for appropriate visitor uses of the park and at the same time protect resources</p>	<p>The Proposed Project is consistent with this goal as the project applicants met with State Park Personnel and designed the Proposed Project so that multi-use trails on the Proposed Project Site will only accommodate pedestrian, equestrian and biking use at a designated connection to CHSP at the Old Edison Trail. No vehicular traffic will be permitted except for State Park Department, OCFA, OCSD, Southern Cal Edison, and other authorized uses.</p>
<p>Pedestrian Access Goal: Create appropriate pedestrian access points to meet the needs of the park and the local jurisdictions that are contiguous to the park boundary.</p>	<p>The Proposed Project is consistent with this goal, as it provides for continued pedestrian and biking access through the Proposed Project Site via trail linkages to connect only with the existing Chino Hills State Park's Old Edison Trail. Section 5.13, Recreation provides additional information related to proposed trails, including a Conceptual Trails Plan. Establishment of non-designated trails will be prohibited in the project regulations. In addition, the Proposed Project has been planned to avoid the creation of de facto trailheads that cause damage to park resources.</p>
<p>Acquisitions Goal: Protect and enhance park resources and improve visitor's enjoyment and education in the park through appropriate land acquisitions.</p>	<p>The Chino Hills State Park General Plan establishes guidelines for the consideration of land acquisitions. Although no portion of the Proposed Project is proposed for CHSP by the State Park, the Proposed Project is consistent with this goal as it preserves ridgelines that separate the Proposed Project from CHSP, creates buffer areas within Blue Mud Canyon, doesn't affect significant bio corridors, and maintains existing trails and access to CHSP without creating de facto trailheads. Further, the Proposed Project is not located within a Historic Zone or Sensitive Habitat Zone, but instead is bordered by a Open Space zone with no known historic, paleontological or cultural resources.</p>

Attachment D
Emails Between Applicant and State Park Personnel
re Chino Hills State Park

From: Arroyo, Enrique@Parks
To: dwymore@q.com
Cc: Elliott, Kelly@Parks
Subject: Maps
Date: Wednesday, February 18, 2015 8:44:10 AM
Attachments: [Esperanza Hills DEIR Exhibit 5-97.pdf](#)
[CHSP map DPR submitted to County - Esperanza Hills.pdf](#)
[Chino Hills SP Brochure 2012.pdf](#)
[Esperanza Hills FEIR Response to Comments excerpt re map.pdf](#)

Hi Doug

Attached are maps that I understand you requested regarding our comment letter. The first is the incorrect DEIR map. The second is the map we attached with our DEIR comment letter. The third attachment is a clean version of the map. The last attachment is an excerpt from the Response to Comments showing our comment on the incorrect maps and the County's response.

The map we provided shows the area adjacent to your project site to the east as being within the park. The DEIR map used outdated mapping sources and, therefore, did not show the accurate park boundary adjacent to the project site.

Feel free to contact me if there are any questions.

Enrique Arroyo
District Planner

California State Parks
Inland Empire District
17801 Lake Perris Drive
Perris, CA 92571
(951) 453-6848

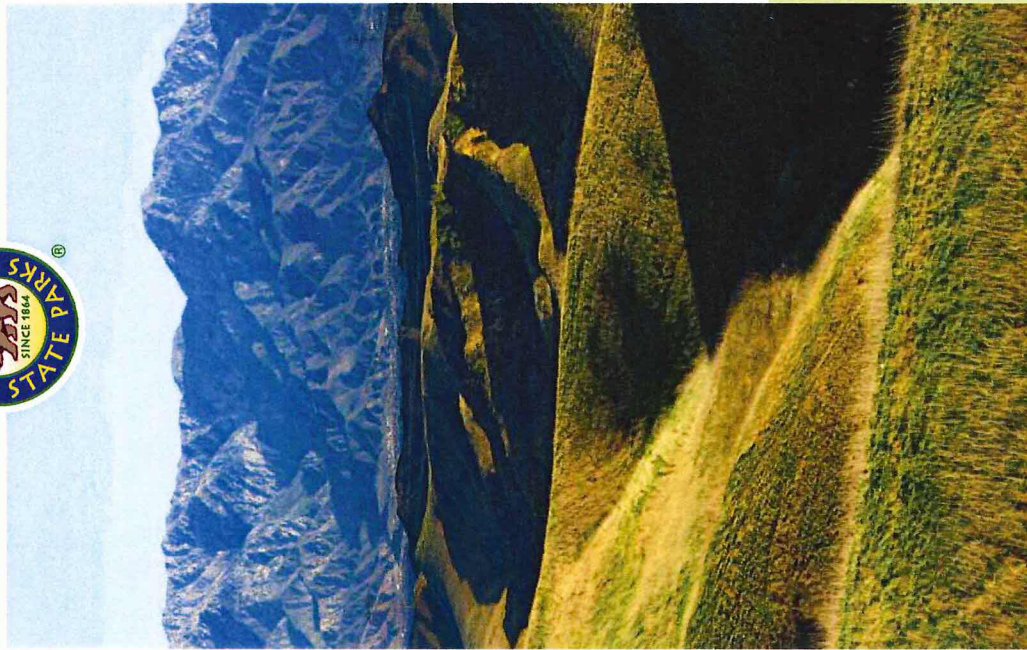
Chino Hills State Park

Our Mission

The mission of California State Parks is to provide for the health, inspiration and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high-quality outdoor recreation.



*Chino Hills State Park is
an island of tranquility in
a sea of urbanization.*



California State Parks supports equal access. Prior to arrival, visitors with disabilities who need assistance should contact the park at (951) 780-6222. This publication can be made available in alternate formats. Contact interp@parks.ca.gov or call (916) 654-2249.

CALIFORNIA STATE PARKS

P.O. Box 942896

Sacramento, CA 94296-0001

For information call: (800) 777-0369

(916) 653-6995, outside the U.S.

711, TTY relay service

www.parks.ca.gov

Discover the many states of California.™

Chino Hills State Park

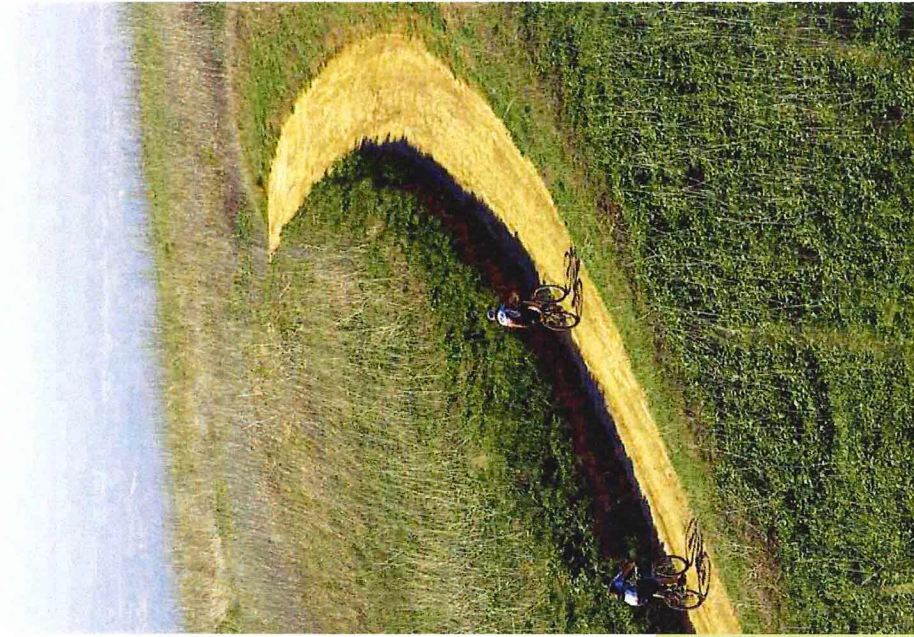
4721 Sapphire Road

Chino Hills, CA 91709

(951) 780-6222

www.parks.ca.gov/ChinoHillsSP

© 2002 California State Parks (Rev. 2012)



Chino Hills State Park, a premier natural open-space area in the hills around the Santa Ana Canyon near Riverside, is a critical link in the Puente-Chino Hills biological corridor. This “bio-link” stretches nearly 31 miles from the Santa Ana Mountains to the Whittier Hills. The park’s 14,100 acres of rolling, grassy hills and valleys are dotted with stands of oaks and sycamores.

The park is also a place where people can escape everyday pressures and find peace and solitude in a natural setting. Visitors can camp for a few days or enjoy walking, horseback riding or bicycling over trails that meander along ridge tops and through valleys, woodlands, sage scrub and grasslands. More than 60 miles of trails offer excellent opportunities for viewing wildlife and native plants. Other features consist of the visitor center, campground, picnic areas and equestrian facilities.

PARK HISTORY

Over the centuries, many people have made use of the open spaces and plentiful water, plant and animal resources of the Chino Hills. Before European contact, the Tongva (Gabrielino) Indians, who lived along the Santa Ana River basin, set up temporary camps here for gathering food.

After the Spanish founded Mission San Gabriel in 1771, the Chino Hills were used extensively for grazing by mission cattle. During the Mexican Republic era, the hills were used as spillover pasture from such surrounding Mexican ranchos as Santa Ana del Chino and La Sierra Yorba. After Mexico ceded California to the United States in 1848, the land continued to be used for cattle.

Private land acquisition here began in the 1870s and continued into the 1890s. Some late nineteenth- and early twentieth-century oil exploration and mining activity also took place in areas now within the park. In 1948 the 1,720-acre Rolling M Ranch was established, and the land was leased to nearby landowners for cattle grazing. A ranch house, historic barn and several windmills and watering troughs serve as reminders of the cattle-ranching days.

In 1977 the California legislature passed a resolution directing California State Parks to conduct a study on acquiring Chino Hills land for park purposes. A local citizen group, Hills for Everyone, worked closely with California State Parks and the legislature to create the park

with an initial acquisition of 2,237 acres. In 1984 the State Park and Recreation Commission officially declared the area a unit of the State Park System. Since then, numerous land acquisitions from various private landowners have expanded the park to its present acreage.

WILDLIFE

Because of its great variety of habitats and microclimates, Chino Hills State Park is an ideal location for observing many wildlife species native to southern California.

More than 200 species of birds and mammals, numerous reptiles and amphibians, and thousands of types of insects and other invertebrates live in the park.

Some of these animals—including the least Bell’s vireo, the California gnatcatcher and the coastal cactus wren—are considered rare, threatened or endangered. The diversity of native plants and animals found in this region is greater than in any other area of comparable size in the United States.



Bobcat



Coastal cactus wren



Windmill at Telegraph Canyon

GEOLOGY

Ranging from 430 feet to 1,781 feet in elevation, the park straddles the north

end of the Santa Ana Mountains and the southeast portion of the Puente-Chino Hills, which together form the northern end of the

WHAT IS A BIOLOGICAL CORRIDOR?

Development has claimed large tracts of wildlife habitat. Biological corridors link the remaining habitats by acting as passageways between designated open spaces.

When small patches of wilderness are cut off from other open-space areas, many of the species present at the time of isolation will inevitably disappear. Biological corridors help to maintain healthy populations of plants and animals by allowing for genetic exchange, species migration and repopulation after a catastrophe such as fire.

The Chino Hills bio-link offers people a refuge from urban life while connecting the park's plants and animals to other natural areas. Since Southern California is so heavily urbanized, it is impossible to preserve the huge tracts of land needed to ensure species diversity. However, by providing a major biological link between islands of open space, Chino Hills State Park effectively enlarges habitats. Water Canyon Natural Preserve, Coal Canyon and the rest of the park are part of a biological corridor that allows wide-ranging species like bobcats or mountain lions to avoid becoming walled off in isolated habitats.

Peninsular Ranges in southern California. This formation interrupts the generally flat Los Angeles Basin with a variety of rolling hills, mountains and canyons on its south and east sides. The hills are a result of uplift and folding along the Whittier and Chino faults.

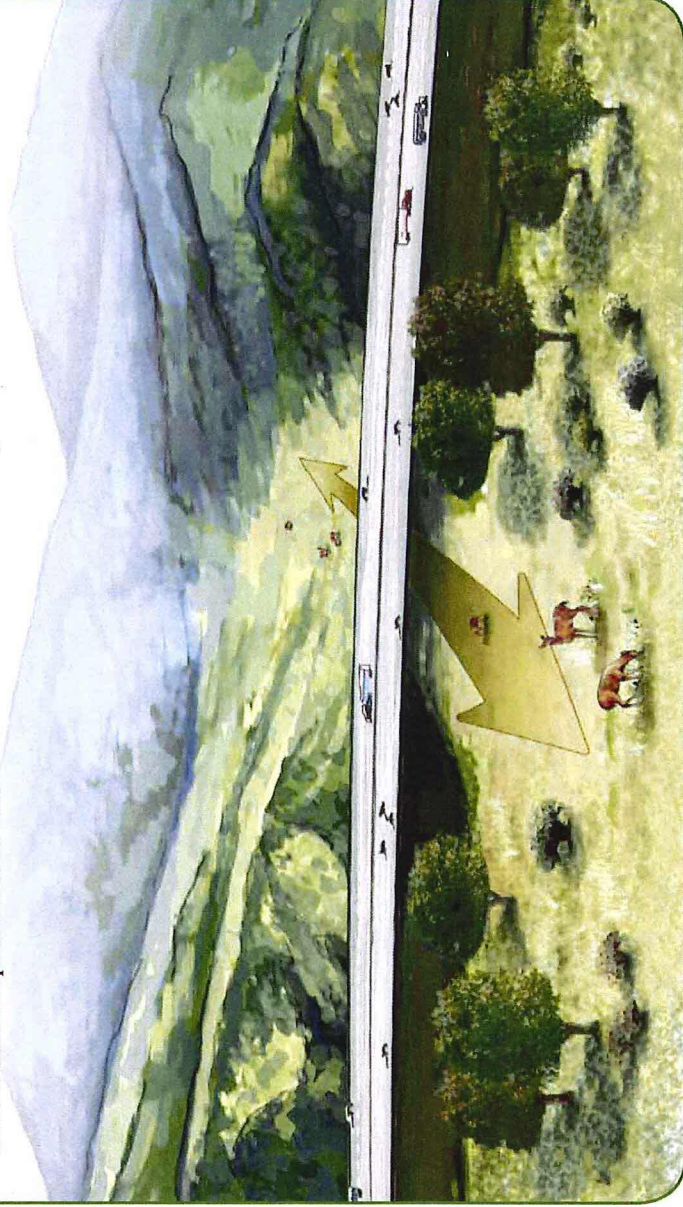
The Puente-Chino Hills are made up of sedimentary rocks of the Puente Formation, deposited from five to fifteen million years ago. Associated with this formation are petroleum resources that have been explored and exploited in the Los Angeles region since the late 1800s. Fine clay soils are found in these formations and in alluvial deposits that wash down from the hills and mountains during winter rains.

PLANT COMMUNITIES

Vegetation habitats include riparian, woodland, coniferous, scrub and chaparral.

In the park's riparian zones, willow and sycamore woodlands stand above understories of wild rose, stinging nettle and mule fat. Cattails grow along seasonal and year-round creeks. These areas provide habitat for a variety of wildlife, among them red-winged blackbirds and many nesting birds that come from Central and South America each spring to raise their young.

Southern California black walnut trees join coast live oaks above creeks on north-facing slopes. These walnut woodlands are another important and rare plant community preserved in the park. Only a few thousand acres of this California



habitat still exist, with just over 1,000 acres in preserves. Several hundred acres are protected at Chino Hills State Park.

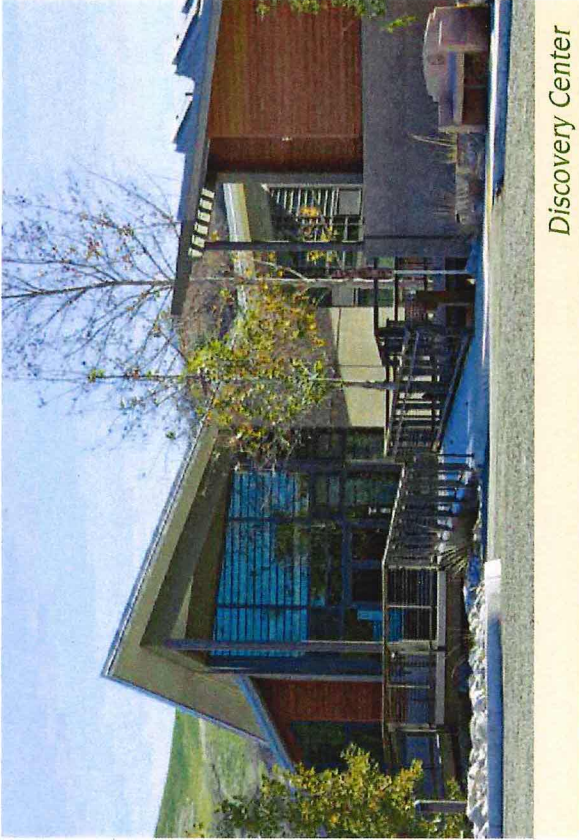
The Tecate cypress is a member of the conifer plant community that is found only in a few places in the United States. Tecate cypresses are found in Coal Canyon, near the larger ecological reserve managed by the California Department of Fish and Game.

Scrub and chaparral communities found along the hills, slopes and canyons include coastal sage scrub, mixed chaparral, alluvial sage scrub and mule fat scrub. Many wildlife species depend on this vegetation for survival.

Grassland species native to California, such as purple needle grass and giant rye, can be found among the park's annual non-native grasses. The park's restoration program is returning native grassland to its natural dominant state.

RECREATION AND INTERPRETIVE PROGRAMS

Sixty miles of multi-use trails wind through the park. Day use and first-come, first-served camping are available for a fee. Campfires, school programs, nature hikes, Junior Rangers and educational talks are offered throughout the



Discovery Center

year. Check the park website or call first for park hours and closures.

Park volunteers assist with guided nature walks, operation of the native plant nursery, and various natural resource projects. Mounted assistance volunteers, bicycle volunteers, and natural history volunteers help provide public safety, information and resource protection. For volunteer program openings, call the park.

ACCESSIBLE INFORMATION &

The Native Plant Trail, the Discovery Center and nearby interpretive trail, and the Rolling M Ranch day-use area are all accessible. The campground has accessible campsites and restrooms with showers. Accessibility is continually improving. For updates, please visit the website at <http://access.parks.ca.gov>.

PLEASE REMEMBER

Speed limit—15 mph for all vehicles and bicycles.

Motor vehicles—Off-road or backcountry driving is not allowed.

Smoking—Smoking is prohibited outside of the campground and throughout the entire park during fire season.

Campfires—Permitted only in designated fire rings; not permitted during fire season.

Trash—Pack it in; pack it out!

Weapons—Weapons of any kind are prohibited.

Trails—For safety's sake, stay on designated trails and don't hike alone. Be aware of wildlife, especially rattlesnakes.

Collecting—All natural and cultural features are protected by law and may not be disturbed or collected.

Dogs are welcome on Bane Canyon Road and in the Rolling M Ranch and the campgrounds. They must be on leash at all times and, except for service animals, are not allowed in the Discovery Center building, in the backcountry or on trails. Pets must not be left alone at any time.

Park closure—The park will close following rain of more than one quarter inch and remain closed until road and trail surfaces are no longer saturated. High clay content in the soil causes "greased" conditions when wet. Trail use during this time causes severe erosion and rutting of trail and road surfaces. The park is also closed during times of extreme fire danger.

Chino Hills State Park

- NEARBY STATE PARKS**
- California Citrus State Historic Park
9400 Dufferin Avenue,
Riverside 92504
(951) 780-6222
 - Lake Perris State Recreation Area
17801 Lake Perris Drive,
Perris 92571
(951) 940-5600

ROLLING M RANCH AND CAMPGROUND DETAIL AREA

Rolling M Ranch
Historic Cattle Chute and Scale
Historic Barn
Historic Well Reservoirs
Campground Area
Equestrian Facilities
Parking Area

Rolling M Ranch and Campground

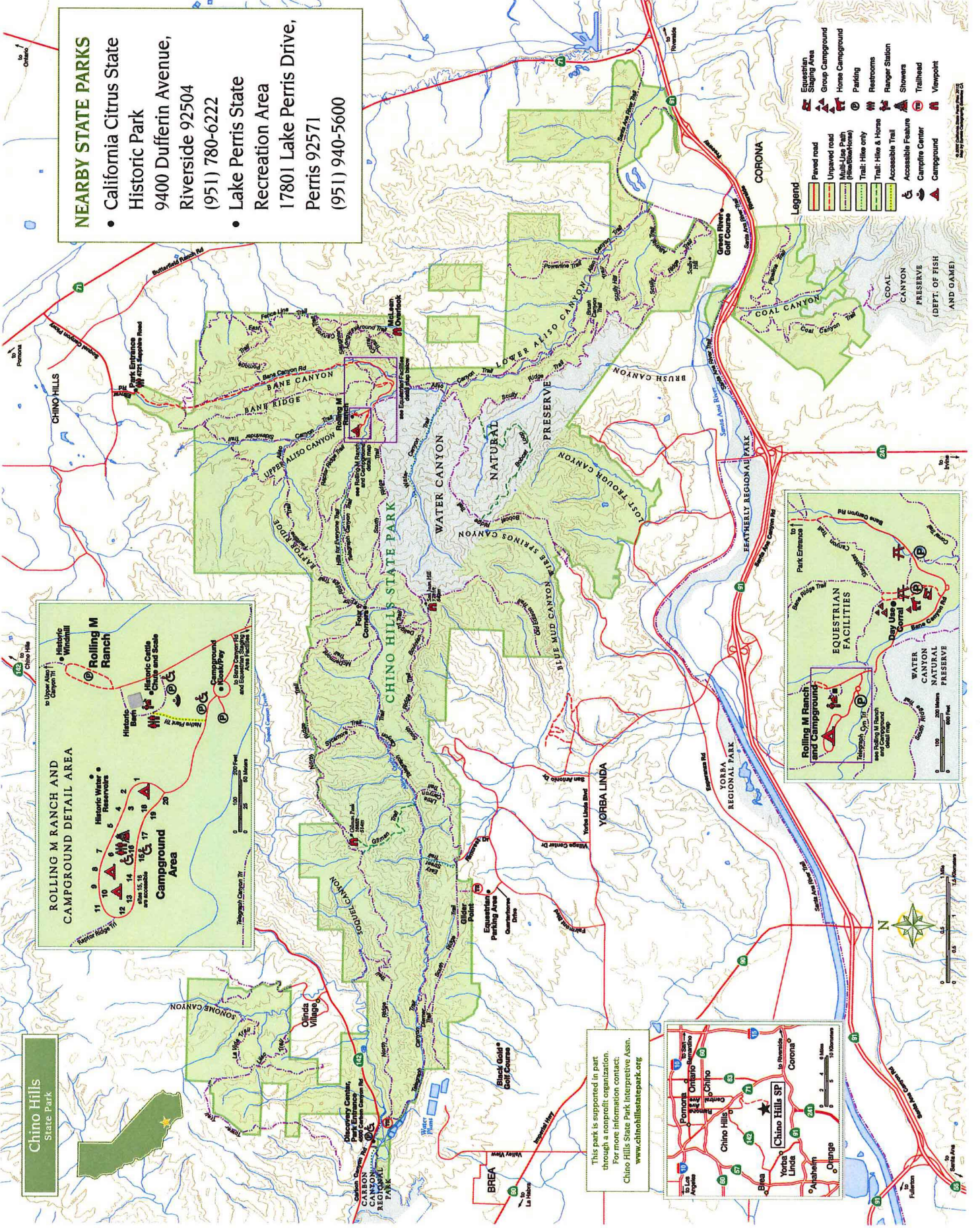
Rolling M Ranch and Campground
Equestrian Facilities
Water Canyon Natural Preserve

This park is supported in part through a nonprofit organization. For more information contact: Chino Hills State Park Interpretive Assn. www.chinohillstatepark.org

Chino Hills State Park
Los Angeles
Orange
Chino
Corona
Brea
Yorba Linda
Alhambra
Chico

Legend

- Equestrian Staging Area
- Group Campground
- Home Campground
- Parking
- Restrooms
- Ranger Station
- Showers
- Trailhead
- Viewpoint
- Paved road
- Unpaved road
- Multi-Use Path (Bike/Bicycles)
- Trail: Hike only
- Trail: Hike & Horse
- Accessible Trail
- Campsite Feature
- Campground



Mr. Kevin Canning
Esperanza Hills DEIR
February 3, 2014
Page 2 of 8

connected access and utilities. The Esperanza Hills DEIR includes analysis on the Bridal Hills parcel in this regard. CEQA does not allow "piecemeal" review of projects that are, in terms of total impacts, actually one larger project. Cumulative impacts of the whole cannot be analyzed accurately unless covered in one EIR, because cumulative impacts of project components such as total vegetation cleared, air quality, biological resources, hydrology, water quality, noise, geology, public services, transportation, traffic, utilities and services, may not reach threshold levels of significance separately, but could if analyzed together. All of these potential projects should be, therefore, covered in one EIR.

L5-2
(cont'd)

The Blue Mud Canyon area is subject to a conservation easement with restrictive covenants administered by the U.S. Fish and Wildlife Service and the U.S. Army Corps of Engineers. Accordingly, State Parks requests coordination of this project with these two agencies to ensure that they are aware of the improvements and the effect of the restrictive covenants on the potential improvements adjacent to Blue Mud Canyon.

L5-3

The DEIR contains incorrect boundary and vital statistics regarding Chino Hills SP in various places in the document. Please revise all map boundaries and discussions regarding Chino Hills SP, including, but not limited to Section 5.13, Exhibit 5-97, and Section 7 on page 5-403, to agree with the attached map and brochure of the park. The park is presently 14,100 acres.

L5-4

Aesthetics

As identified in the Alternatives Analysis in the DEIR, Alternative 4, the Lower/Reduced density Alternative would eliminate homes on the highest elevations of the property, hence eliminate a significant amount of urbanization intrusion into the views from Chino Hills SP. The DEIR also says that it would still modify the existing landform and grade into the "Area 2", (the northernmost piece of the project), where no homes would be built. State Parks requests that more specific detail including grading disturbance be provided to illustrate the difference between views from Chino Hills SP from this Alternative and those provided in the DEIR for Alternatives 2 and 3.

L5-5

As identified in the DEIR, Alternative 2 (Option 2A) and Alternative 3 (Option 2B) structures associated with Estate Lot 1 are visible from points within Chino Hills SP, as shown on Exhibit 5-22. The DEIR concludes that aesthetics impacts from the project will be less than significant. State Parks disagrees and considers it a significant impact to the aesthetic qualities and visitor's experience within Chino Hills SP. We recommend redesigning these options to eliminate this lot and its related components that would bring urbanization closer to the natural setting of Chino Hills SP.

L5-6

As shown on Exhibit 5-162, Proposed Water Facilities Plan, Option 1, and Exhibit 5-163, Proposed Water Facilities Plan, Option 2, (Alternatives 2 and 3), the project would include construction of an underground reservoir. We request a visual simulation of any

L5-7

- L5-3 There are no restrictive covenants on the Project site. All covenants in connection with USFWS occur in Chino Hills State Park.
- L5-4 The depiction of the Project site in relation to the boundary of Chino Hills State Park (CHSP) is accurate. Exhibits of CHSP used were from the CHSP General Plan and the City of Yorba Linda Trails map, as well as other published maps. The Proposed Project will not include any construction activity within the boundaries of CHSP and provides a buffer between development and the Park boundaries. However, the acreage noted in the DEIR is revised from 11,770 to 14,100 as noted by the commenter. Analysis in the DEIR will not change based on Park boundaries or total acreage and, therefore, the analysis remains adequate.
- L5-5 A complete description of Project Alternative 4 – Lower/Reduced Density is found in Alternatives Analysis (Chapter 6) on pages 6-78 through 6-85 of the DEIR. As described therein, Alternative 4 would result in Planning Area 2 remaining in its current condition with limited grading in order to achieve slope stability and balanced grading operations. As depicted on Exhibit 5-5, Esperanza Hills-Option 1 on page 5-17 in Section 5.1 (Aesthetics) of the DEIR, Planning Area 2 is located on the upper slopes of the Proposed Project. Any grading needed for slope stabilization or balanced grading operations will occur in the lower portion of Planning Area 2, as it meets the development portion of Planning Area 1. As discussed on page 5-44 and shown on Exhibit 5-22, View 12, on page 5-55 Estate Lot 1 and a few homes located on “S” Street and “U” Street in Planning Area 2 are visible from San Juan Hill in CHSP. Alternative 4 would eliminate the development of Estate Lot 1 and Planning Area 2 and results in no view of the development associated with Planning Area 1. The limited grading associated with slope stability and balanced grading operations will be subject to design standards of the Specific Plan including fuel modification areas as described in Section 5.9 (Land Use and Planning) starting on page 5-429 of the DEIR.
- L5-6 Alternative 1 (Option 2A) and Alternative 2 (Option 2B) will have the same impact to aesthetics as the Proposed Project’s Option 1 and Option 2 as discussed in Section 5.1 (Aesthetics) of the DEIR. Contrary to the commenter’s opinion that Estate Lot 1 results in a significant impact to the aesthetics qualities and visitors’ experience in CHSP, the Proposed Project as designed is consistent with regulatory documents governing aesthetics as discussed in Section 5.9 (Land Use and Planning) beginning on page 5-395 of the DEIR. Project Design Features (PDFs) Mitigation Measures have been added to reduce Project impacts to aesthetics to less than significant.

A complete description of Proposed Project’s consistency with the Chino Hills State Park General Plan is provided in Table 5-9-19 in Section 5.9 (Land Use and Planning, pages 5-449 through 5-450 of the DEIR). As described therein, the Proposed Project is consistent with the CHSP Aesthetic Resources Goal, because all feasible measures and project design features have been incorporated into the Proposed Project to minimize man-made visual impacts from views within the CHSP. The Aesthetic Resources Goal includes a guideline concerning ridgelines and knoll developments outside the park to discourage development that adversely affects significant views and to work with park neighbors and local government to review and plan adjacent developments in a manner that protects views. Estate Lot 1 can be seen in the distance from CHSP along with developed hillsides of Yorba Linda, SR-55, and the Los Angeles Basin as depicted on Exhibit 5-22, View 12, on page 5-55 in Section 5.1 (Aesthetics) of the DEIR. Although Estate Lot 1 can be seen from the San Juan Hill outlook, it is approximately .6 miles from that location; thus, the scale of the proposed home and its effect within the viewshed when viewed from the San Juan Hill outlook are significantly diminished. Furthermore, the DEIR includes PDF-1 through PDF-10 and

Mr. Kevin Canning
Esperanza Hills DEIR
February 3, 2014
Page 2 of 6

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L5-5

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From: [Jordan Neville](#)
To: "Doug Wymore"; "Arroyo, Enrique@Parks"
Cc: "Elliott, Kelly@Parks"; "Shawna Schaffner"; "Kathy Crum"
Subject: RE: Maps
Date: Wednesday, February 18, 2015 1:55:46 PM
Attachments: [Chino Hills State Park Esperanza Hills.pdf](#)

Enrique,

Per Doug's request please see the attached Chino Hills State Park map with the Esperanza Hills boundaries included. Please let me know if you have any questions or comments.

Thanks.

From: Doug Wymore [mailto:dwymore@q.com]
Sent: Wednesday, February 18, 2015 11:06 AM
To: 'Arroyo, Enrique@Parks'
Cc: 'Elliott, Kelly@Parks'; Shawna Schaffner; 'Jordan Neville'; Kathy Crum
Subject: RE: Maps

Enrique;

Thanks for taking my call and showing me that figure 5-97 needs to be changed. We will get on that and get it fixed and submitted this week. That map came from the City, I believe, before it transferred the land to the park. To be clear, we have always contended that all of the land directly east of us is part of the park, and that is what was analyzed in the DEIR.

We will fix the map. Sorry I didn't catch this the first time around. As soon as we do, which should be today, we will send you a copy of the new map.

Again, if you need to meet for any reason, please let us know.

Doug

From: Arroyo, Enrique@Parks [mailto:Enrique.Arroyo@parks.ca.gov]
Sent: Wednesday, February 18, 2015 8:44 AM
To: dwymore@q.com
Cc: Elliott, Kelly@Parks
Subject: Maps

Hi Doug

Attached are maps that I understand you requested regarding our comment letter. The first is the incorrect DEIR map. The second is the map we attached with our DEIR comment letter. The third attachment is a clean version of the map. The last attachment is an excerpt from the Response to Comments showing our comment on the incorrect maps and the County's response.

The map we provided shows the area adjacent to your project site to the east as being within the park. The DEIR map used outdated mapping sources and, therefore, did not show the accurate park boundary adjacent to the project site.

Feel free to contact me if there are any questions.

Enrique Arroyo
District Planner

California State Parks
Inland Empire District
17801 Lake Perris Drive
Perris, CA 92571
(951) 453-6848

Chino Hills State Park

NEARBY STATE PARKS

- California Citrus State Historic Park
9400 Dufferin Avenue,
Riverside 92504
(951) 780-6222
- Lake Perris State Recreation Area
17801 Lake Perris Drive,
Perris 92571
(951) 940-5600

ROLLING M RANCH AND CAMPGROUND DETAIL AREA

Rolling M Ranch
Campground Area

EQUESTRIAN FACILITIES

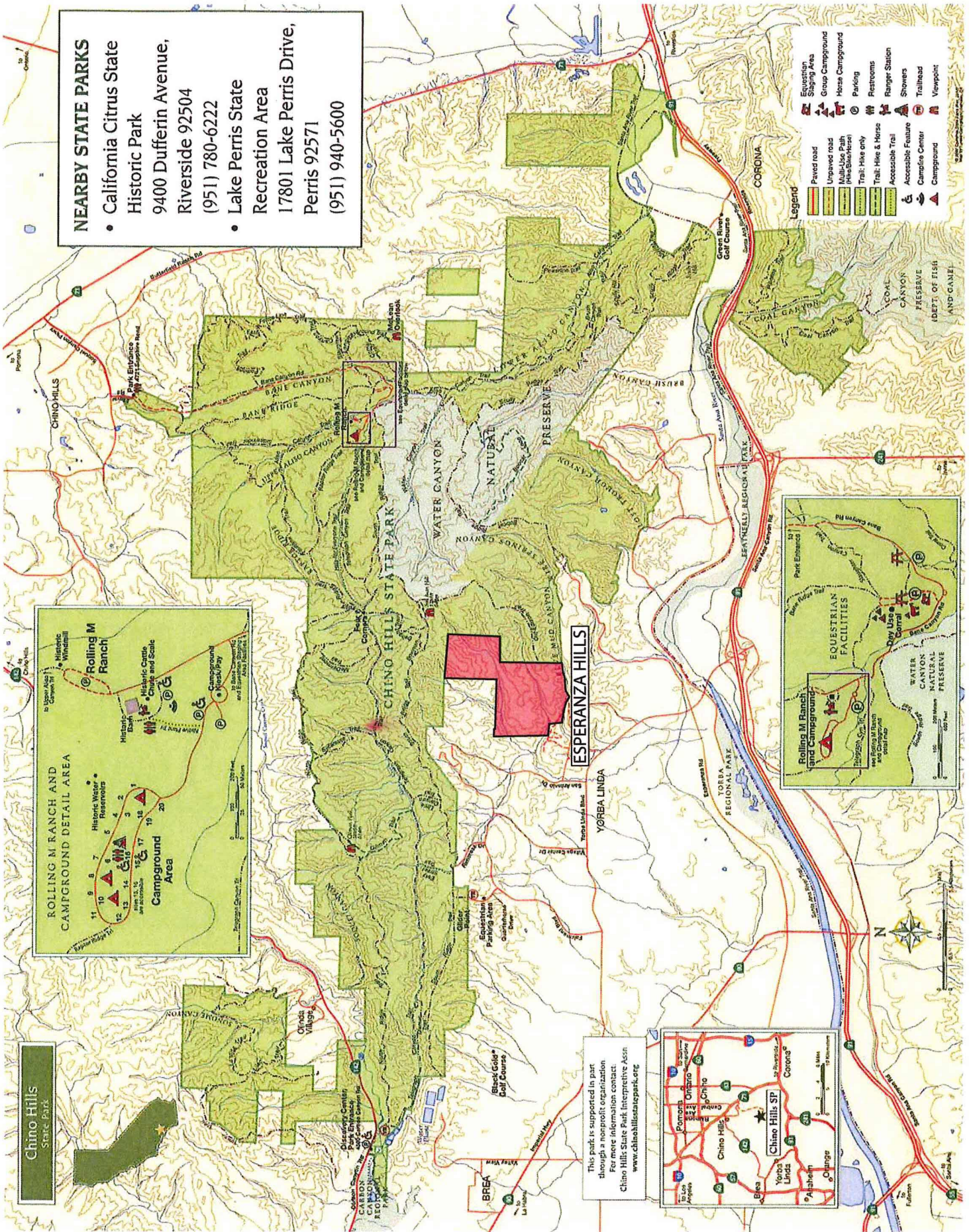
Day Use Center
EQUESTRIAN FACILITIES

This park is supported in part through a nonprofit organization. For more information contact: Chino Hills State Park Interpretive Assn. www.chinohillstatepark.org

Chino Hills SP

Legend

	Paved road		Equestrian Staging Area
	Unpaved road		Group Campground
	Multi-Use Path (Hike/Bike/Horse)		Horse Campground
	Trail: Hike only		Parking
	Trail: Hike & Horse		Restrooms
	Accessible Trail		Ranger Station
	Accessible Feature		Shower
	Campfire Center		Trailhead
	Campground		Viewpoint



From: [Douglas Wymore](mailto:Douglas.Wymore)
To: [Kietzer, Ken@Parks](mailto:Kietzer_Ken@Parks); [Elliott, Kelly@Parks](mailto:Elliott_Kelly@Parks); "Scott Eckardt"
Cc: "Michael Huff"; "Gary Lamb"; tbomkamp@wetlandpermitting.com; [Arroyo, Enrique@Parks](mailto:Arroyo.Enrique@Parks)
Subject: RE: Esperanza Hills Fire Study
Date: Tuesday, July 16, 2013 11:30:00 AM

Thanks.

From: Kietzer, Ken@Parks [<mailto:Ken.Kietzer@parks.ca.gov>]
Sent: Tuesday, July 16, 2013 11:06 AM
To: dwymore@q.com; [Elliott, Kelly@Parks](mailto:Elliott_Kelly@Parks); 'Scott Eckardt'
Cc: 'Michael Huff'; 'Gary Lamb'; tbomkamp@wetlandpermitting.com; Arroyo, Enrique@Parks
Subject: RE: Esperanza Hills Fire Study

Doug,

We do not yet have a completed draft of the CHSP wildfire management plan that we are prepared to share. I will be reviewing your wildfire management plan as soon as my schedule allows and will provide comments.

Ken Kietzer

From: Douglas Wymore [<mailto:dwymore@q.com>]
Sent: Tuesday, July 16, 2013 10:58 AM
To: [Elliott, Kelly@Parks](mailto:Elliott_Kelly@Parks); [Kietzer, Ken@Parks](mailto:Kietzer_Ken@Parks); 'Scott Eckardt'
Cc: 'Michael Huff'; 'Gary Lamb'; tbomkamp@wetlandpermitting.com; Arroyo, Enrique@Parks
Subject: RE: Esperanza Hills Fire Study

Kelly;

We are proceeding forward with our development, and will be submitting the screencheck EIR shortly. Aside from the matters we have already discussed, is there anything else that Chino Hills State Park is concerned about?

Also, have you completed a draft of your fire management plan that you can share?

Let me know. As I read your email, you will notify us if you want to meet again. Is that correct?

Even though we aren't meeting, feel free to contact us or Tony Bomkamp should you have any questions.

Thanks.

From: [Elliott, Kelly@Parks](mailto:Elliott_Kelly@Parks) [<mailto:Kelly.Elliott@parks.ca.gov>]
Sent: Tuesday, July 16, 2013 10:15 AM
To: dwymore@q.com; [Kietzer, Ken@Parks](mailto:Kietzer_Ken@Parks); 'Scott Eckardt'
Cc: 'Michael Huff'; Gary Lamb; tbomkamp@wetlandpermitting.com; Arroyo, Enrique@Parks
Subject: RE: Esperanza Hills Fire Study

Mr. Wymore,

Ken, Enrique and myself are not available to meet until late August or early September. We will keep you informed of our availability when we get closer to that time frame.

Thank you for sharing the information and for your patience,

Kelly Elliott
Chino Sector Superintendent
California State Parks
1879 Jackson Street
Riverside, CA 92504
951-789-1278
951-789-0347 fax



From: Douglas Wymore [<mailto:dwymore@q.com>]
Sent: Saturday, July 13, 2013 11:17 AM
To: Kietzer, Ken@Parks; 'Scott Eckardt'
Cc: 'Michael Huff'; Elliott, Kelly@Parks; Gary Lamb; tbomkamp@wetlandpermitting.com
Subject: RE: Esperanza Hills Fire Study

When do you guys want to meet and go over the latest developments on our project? By the way, Tony Bomkamp's office had an opportunity to go out and see if the golden eagle's nest was still there. Apparently it is not, so the 2008 fire must have burned it and the eagles did not return. We don't know of any nests in this vicinity.

From: Kietzer, Ken@Parks [<mailto:Ken.Kietzer@parks.ca.gov>]
Sent: Friday, July 12, 2013 3:39 PM
To: Scott Eckardt
Cc: dwymore@q.com; Michael Huff; Elliott, Kelly@Parks
Subject: RE: Esperanza Hills Fire Study

It worked for me this time, thank you.

Ken

From: Scott Eckardt [<mailto:seckardt@dudek.com>]
Sent: Friday, July 12, 2013 10:46 AM
To: Kietzer, Ken@Parks
Cc: dwymore@q.com; Michael Huff; Elliott, Kelly@Parks
Subject: Esperanza Hills Fire Study

Please click the following link to download your files:

<http://ftp.dudek.com:80/AHT/Download/Login.aspx?package=dviWqCY9LEzsGrArgKwug2GvVedb%2bn6afyClewrnCIRtwq6mNsyWGbRVaS5Tk20arQeJLEUFR2XATnjVAjBKJvFGv3i4hxqdF7y%2fykocrU%3d>

Hi Ken,

Per Mike Huff's request, I am sending Dudek's latest FPEP via our ftp site. Just click the link above (password: Esperanza2013) to access the document. Please let me know if you have any questions,

Scott

Scott Eckardt
Project Manager, RPF #2835
DUDEK | *Natural Resource Management* | *Infrastructure Development* | *Regulatory Compliance*
800.450.1818 x3910
www.dudek.com

From: [Douglas Wymore](#)
To: [Michael Huff](#); ["Kietzer, Ken@Parks"](#)
Cc: ["Krueper, Ron@Parks"](#); ["Elliott, Kelly@Parks"](#)
Subject: RE: Esperanza Hills fire study
Date: Thursday, July 11, 2013 9:11:00 PM
Attachments: [image001.png](#)

Thanks.

From: Michael Huff [<mailto:mhuff@dudek.com>]
Sent: Thursday, July 11, 2013 9:05 PM
To: [dwymore@q.com](#); ["Kietzer, Ken@Parks"](#)
Cc: ["Krueper, Ron@Parks"](#); ["Elliott, Kelly@Parks"](#)
Subject: RE: Esperanza Hills fire study

Hi all,

I'll get the link reset tomorrow. We usually put a limit on the number of days for security and data management purposes.

Mike

From: Douglas Wymore [<mailto:dwymore@q.com>]
Sent: Thursday, July 11, 2013 7:36 PM
To: ["Kietzer, Ken@Parks"](#)
Cc: ["Krueper, Ron@Parks"](#); ["Elliott, Kelly@Parks"](#); [Michael Huff](#)
Subject: RE: Esperanza Hills fire study

Mike;

Ken wasn't able to access the link on the Fire Study, so he sent the email below. Could you restore the link on the Esperanza Hills fire study so he can download it? Thanks.

From: [Kietzer, Ken@Parks](#) [<mailto:Ken.Kietzer@parks.ca.gov>]
Sent: Thursday, July 11, 2013 6:49 PM
To: [dwymore@q.com](#)
Cc: [Krueper, Ron@Parks](#); [Elliott, Kelly@Parks](#)
Subject: RE: Esperanza Hills fire study

Doug,

I must admit I have been swamped and have not had time to access your draft plan to review it. I tried the link this evening in anticipation of reviewing the document next week and the password doesn't appear to be current anymore or otherwise doesn't let me access the prescribed document. I used the link and arrived at a Dudek page which asked me for a password but when I entered the one included in your email it didn't allow access.

Will you please check on the status of it and send DPR an update,

Thanks,

Ken Kietzer
Sr. Environmental Scientist
California State Parks
Inland Empire District
17801 Lake Perris Dr.
Perris, CA 92571
951-453-4250
ken.kietzer@parks.ca.gov
Off Mondays



From: Douglas Wymore [<mailto:dwymore@q.com>]
Sent: Tuesday, July 09, 2013 2:53 PM
To: [Ron@Parks](#)
Cc: [Kietzer, Ken@Parks](#); [Elliott, Kelly@Parks](#); ["Gary Lamb"](#); mhuff@dudek.com; ["Canning, Kevin"](#)
Subject: RE: Esperanza Hills fire study

Ron;

Thanks for the heads up. Hope you have a lot of things planned for retirement that will keep you happy and busy.

It was a pleasure dealing with you, and I hope to continue the cooperative dialogue we have had in the past.

Kelly, Ken, and Enrique, please let me know when you want to meet. Again, the last two weeks of July work for us, and Thursdays and Fridays work best, but we can adjust.

Has the Park made any progress on its fire management plan? Now that I have reviewed the Dudek report we sent over and met with OCFA and you guys, I understand the issues with fire a lot better, and its effect on native vegetation more. I don't know what the solution is, obviously, but a few things seem clear that I would like to discuss.

From: Krueper, Ron@Parks [<mailto:Ron.Krueper@parks.ca.gov>]
Sent: Tuesday, July 09, 2013 2:24 PM
To: dwymore@q.com
Cc: Kietzer, Ken@Parks; Elliott, Kelly@Parks; 'Gary Lamb'; mhuff@dudek.com; 'Canning, Kevin'
Subject: RE: Esperanza Hills fire study

Hi Doug,

I will be deferring arranging a meeting date to Kelly, Ken and Enrique. I plan to retire July 30th. Although, I have been planning my retirement for about a year or so, I have only recently announced it to my staff and others who I work with dealing with the business/operation of State Parks. So today, letting you know. I'm very confident my staff will continue along well with the dialogue related to Chino Hills State Parks.

Pleasure meeting with you in the past and the best to you and your staff.

Ron Krueper
District Superintendent
California State Parks
Inland Empire District
17801 Lake Perris Drive
Perris, CA 92571
(951) 940-5622

Please note new email address: Ron.Krueper@parks.ca.gov

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From: Douglas Wymore [<mailto:dwymore@q.com>]
Sent: Monday, July 08, 2013 4:59 PM
To: Krueper, Ron@Parks
Cc: Kietzer, Ken@Parks; Elliott, Kelly@Parks; 'Gary Lamb'; mhuff@dudek.com; 'Canning, Kevin'
Subject: RE: Esperanza Hills fire study

Do you still have time to meet later this month? The last two weeks of July on Thursday or Friday would be good, or August 2.

From: Krueper, Ron@Parks [<mailto:Ron.Krueper@parks.ca.gov>]
Sent: Tuesday, June 25, 2013 12:20 PM
To: dwymore@q.com
Cc: Kietzer, Ken@Parks; Elliott, Kelly@Parks; Gary Lamb; mhuff@dudek.com; Canning, Kevin
Subject: RE: Esperanza Hills fire study

Thanks Doug,

We are currently reviewing and will get back with you. Maybe a meeting mid to late July?

Ron Krueper
District Superintendent
California State Parks
Inland Empire District
17801 Lake Perris Drive
Perris, CA 92571
(951) 940-5622

Please note new email address: Ron.Krueper@parks.ca.gov

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From: Douglas Wymore [<mailto:dwymore@q.com>]
Sent: Tuesday, June 18, 2013 9:18 AM
To: Krueper, Ron@Parks

Cc: Kietzer, Ken@Parks; Elliott, Kelly@Parks; Gary Lamb; mhuff@dudek.com; Canning, Kevin
Subject: Esperanza Hills fire study

Ron;

At our public outreach meeting and our NOP comment meeting, one of the primary concerns voiced by neighbors was the issue of fire safety. After those meetings, we gathered information from OCFA and other sources to determine the issues raised by the Freeway Complex Fire, the damage it caused, and the evacuation issues that arose. We then consulted with OCFA as to installing and maintaining fire breaks in Blue Mud Canyon, locating fire staging areas to fight future wildland fires, and decided to upgrade our sprinkler systems beyond current requirements by adding sprinkler heads into the attic areas.

After we completed that planning, we consulted Dudek, a well known engineering firm who has extensively studied California fires, and they recently completed a fire study on the Esperanza Hills project to determine the safety of the community as designed, the effect of the community on the fire threat to surrounding residents, fire safety response, and the history of fire on site and off site.

This study affirms what George Ewan at OCFA told us when we met with him, and what Ken confirmed in our last meeting – that fires appear to be happening in Chino Hills State Park every 5 to 6 years, although there have only been two fires that hit our site in the last 100+ years – in 1980 and 2008. After you guys have had a chance to review this study, I would like to sit down and talk to you about it, and its implications.

I hope this information helps you with regard to your fire management plan. Do you have a draft that you can send me? We would be happy to have Mike Huff at Dudek take a look at it and provide input at no charge to the Park if you believe that would help.

We don't have hard copies printed yet, but will deliver one to you if you wish.

Hard copies are being submitted to the County this week.

The link appears below:

<http://ftp.dudek.com:80/AHT/DownloadLogin.aspx?package=qchlqOZ9FLGvsn2KQXjvUuzMzeW7cmXK6p5%2fbX8njzD6nk2gyGWli8klV%2b7BNSVIX5CvasxS2pjmocUd6z4yUSyoa2dFjibHnzR0sdvuoYA%3d>

The password is: 7740.

If you have any questions or want to meet to discuss this, please contact me directly at 602 738-8181.

From: [Douglas Wymore](mailto:Douglas.Wymore)
To: [Ron Krueper](mailto:Ron.Krueper@parks.ca.gov)
Cc: [Ken Kietzer](mailto:Ken.Kietzer@parks.ca.gov); [Kelly Elliott](mailto:Kelly.Elliott@parks.ca.gov); 'Gary Lamb'; mhuff@dudek.com; 'Canning, Kevin'
Subject: RE: Esperanza Hills fire study
Date: Tuesday, July 9, 2013 2:52:00 PM

Ron;

Thanks for the heads up. Hope you have a lot of things planned for retirement that will keep you happy and busy.

It was a pleasure dealing with you, and I hope to continue the cooperative dialogue we have had in the past.

Kelly, Ken, and Enrique, please let me know when you want to meet. Again, the last two weeks of July work for us, and Thursdays and Fridays work best, but we can adjust.

Has the Park made any progress on its fire management plan? Now that I have reviewed the Dudek report we sent over and met with OCFA and you guys, I understand the issues with fire a lot better, and its effect on native vegetation more. I don't know what the solution is, obviously, but a few things seem clear that I would like to discuss.

From: [Ron Krueper](mailto:Ron.Krueper@parks.ca.gov) [mailto:Ron.Krueper@parks.ca.gov]
Sent: Tuesday, July 09, 2013 2:24 PM
To: dwymore@q.com
Cc: [Kietzer, Ken@Parks](mailto:Ken.Kietzer@parks.ca.gov); [Elliott, Kelly@Parks](mailto:Kelly.Elliott@parks.ca.gov); 'Gary Lamb'; mhuff@dudek.com; 'Canning, Kevin'
Subject: RE: Esperanza Hills fire study

Hi Doug,

I will be deferring arranging a meeting date to Kelly, Ken and Enrique. I plan to retire July 30th. Although, I have been planning my retirement for about a year or so, I have only recently announced it to my staff and others who I work with dealing with the business/operation of State Parks. So today, letting you know. I'm very confident my staff will continue along well with the dialogue related to Chino Hills State Parks.

Pleasure meeting with you in the past and the best to you and your staff.

Ron Krueper
District Superintendent
California State Parks
Inland Empire District
17801 Lake Perris Drive
Perris, CA 92571
(951) 940-5622

Please note new email address: Ron.Krueper@parks.ca.gov

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From: [Douglas Wymore](mailto:Douglas.Wymore) [mailto:dwymore@q.com]
Sent: Monday, July 08, 2013 4:59 PM
To: [Ron Krueper](mailto:Ron.Krueper@parks.ca.gov)
Cc: [Kietzer, Ken@Parks](mailto:Ken.Kietzer@parks.ca.gov); [Elliott, Kelly@Parks](mailto:Kelly.Elliott@parks.ca.gov); 'Gary Lamb'; mhuff@dudek.com; 'Canning, Kevin'
Subject: RE: Esperanza Hills fire study

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Sent: Tuesday, June 25, 2013 12:20 PM
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Cc: [Kietzer, Ken@Parks](mailto:Ken.Kietzer@parks.ca.gov); [Elliott, Kelly@Parks](mailto:Kelly.Elliott@parks.ca.gov); Gary Lamb; mhuff@dudek.com; Canning, Kevin
Subject: RE: Esperanza Hills fire study

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Cc: Kietzer, Ken@Parks; Elliott, Kelly@Parks; Gary Lamb; mhuff@dudek.com; Canning, Kevin

Subject: Esperanza Hills fire study

Ron;

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The password is: 7740.

If you have any questions or want to meet to discuss this, please contact me directly at 602 738-8181.

From: glamb@lambholdings.net
To: Douglas Wymore
Subject: [FWD: RE: Trail coordinates 2 of 2]
Date: Friday, March 9, 2018 3:31:58 PM

----- Original Message -----

Subject: RE: Trail coordinates 2 of 2
From: "Elliott, Kelly@Parks" <Kelly.Elliott@parks.ca.gov>
Date: Mon, January 28, 2013 9:57 am
To: Jordan Neville <jneville@lambarchitects.com>
Cc: "dwymore@q.com" <dwymore@q.com>, 'Gary Lamb' <glamb@lambholdings.net>

Received-much appreciated!

Kelly Elliott
Chino Sector Superintendent
California State Parks
1879 Jackson Street
Riverside, CA 92504
951-789-1278
951-789-0347 fax



From: Jordan Neville [<mailto:jneville@lambarchitects.com>]
Sent: Monday, January 28, 2013 8:09 AM
To: Elliott, Kelly@Parks
Cc: dwymore@q.com; 'Gary Lamb'
Subject: RE: Trail coordinates 2 of 2

2 of 2

From: Jordan Neville [<mailto:jneville@lambarchitects.com>]
Sent: Monday, January 28, 2013 9:09 AM
To: "kelliott@parks.ca.gov"
Cc: "dwymore@q.com"; 'Gary Lamb'
Subject: RE: Trail coordinates 1 of 2

Kelly,

I am getting a kick back on these attachments. I will try sending them one at a time. Please let me know if you receive them both.

Thanks.

From: Jordan Neville [<mailto:jneville@lambarchitects.com>]
Sent: Monday, January 28, 2013 8:42 AM
To: 'kelliott@parks.ca.gov'
Cc: 'dwymore@q.com'; 'Gary Lamb'
Subject: RE: Trail coordinates

Kelly,

Per Doug's request, please find the attached trails plans for Option 1 and Option 2. Please let me know if you need anything else.

Thanks.

From: Douglas Wymore [<mailto:dwymore@q.com>]
Sent: Friday, January 25, 2013 5:02 PM
To: jneville@lambarchitects.com
Cc: Elliott, Kelly; Gary Lamb
Subject: FW: Trail coordinates

Jordan, could you forward the revised trails map to Kelly? We would appreciate it.

Thanks.

From: glamb@lambholdings.net [<mailto:glamb@lambholdings.net>]
Sent: Friday, January 25, 2013 4:23 PM
To: Elliott, Kelly@Parks
Cc: Krueper, Ron@Parks; Arroyo, Enrique@Parks; Doug Wymore
Subject: RE: Trail coordinates

Hi Kelly...Yes we eliminated the trails into the Park and redesigned the trail system to come up through Blue Mud Canyon and link with the Old Edison Trail...Thank you for your help...Gary

----- Original Message -----

Subject: RE: Trail coordinates
From: "Elliott, Kelly@Parks" <Kelly.Elliott@parks.ca.gov>
Date: Fri, January 25, 2013 1:44 pm
To: "glamb@lambholdings.net" <glamb@lambholdings.net>
Cc: "Krueper, Ron@Parks" <Ron.Krueper@parks.ca.gov>, "Arroyo, Enrique@Parks" <Enrique.Arroyo@parks.ca.gov>

Mr. Lamb,

Just refreshing my memory on this-were you able to realign the trail with the coordinates? I know there was a slight discrepancy in the exact location. If so, and you have a new map, I would appreciate the opportunity to see it.

Thank you

Kelly Elliott
Chino Sector Superintendent

California State Parks
1879 Jackson Street
Riverside, CA 92504
951-789-1278
951-789-0347 fax



From: glamb@lambholdings.net [<mailto:glamb@lambholdings.net>]
Sent: Monday, October 29, 2012 1:08 PM
To: Elliott, Kelly
Cc: Krueper, Ron
Subject: RE: Trail coordinates

Thanks Kelly...I have sent it to our Engineers and Landscape Architect to revise our Trails Map...Gary

----- Original Message -----

Subject: Trail coordinates
From: "Elliott, Kelly" <kelliott@parks.ca.gov>
Date: Mon, October 29, 2012 10:14 am
To: "glamb@lambholdings.net" <glamb@lambholdings.net>
Cc: "Krueper, Ron" <RKRUEPER@parks.ca.gov>

Mr. Lamb,
Here are the coordinates of the trail as it intersects
the Chino Hills State Park Boundary

N 33.899
W 117.746

I will also be taking a trip out to see if there are any
other trail connections that make sense or that may
be an additional option since the existing trail only
gives a single option for now.

Kelly Elliott
Chino Sector Superintendent
California State Parks
1879 Jackson Street
Riverside, CA 92504
951-789-1278
951-789-0347 fax



From: glamb@lambholdings.net
To: Douglas Wymore
Subject: [FWD: RE: Trail coordinates]
Date: Friday, March 9, 2018 3:34:00 PM

----- Original Message -----

Subject: RE: Trail coordinates
From: "Elliott, Kelly@Parks" <Kelly.Elliott@parks.ca.gov>
Date: Fri, January 25, 2013 1:44 pm
To: "glamb@lambholdings.net" <glamb@lambholdings.net>
Cc: "Krueper, Ron@Parks" <Ron.Krueper@parks.ca.gov>, "Arroyo, Enrique@Parks" <Enrique.Arroyo@parks.ca.gov>

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Kelly Elliott
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To: "glamb@lambholdings.net" <glamb@lambholdings.net>
Cc: "Krueper, Ron" <RKRUEPER@parks.ca.gov>

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Kelly Elliott
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From: [Douglas Wymore](#)
To: [Krueper, Ron@Parks](#)
Cc: [Kietzer, Ken@Parks](#); [Arroyo, Enrique@Parks](#); [Elliott, Kelly@Parks](#); "Gary Lamb"; [tbomkamp@wetlandpermitting.com](#); [jneville@lambarchitects.com](#)
Subject: RE: view studies
Date: Thursday, March 7, 2013 5:57:00 PM

Ron;

Thank you for agreeing to meet.

After you have had a chance to look at the view study, let us know if you need any changes. Just contact Jordan Neville directly at 480 994-5262 if you need additional angles.

If you have an issues locating the Golden Eagle nest, Kristin at Tony Bomkamp's office can give you the exact GIS coordinates. Tony is copied on this email.

Thanks for the information on the wildland fire behavior and control from Jon Keeley. We will send that to our fire behavior consultant.

If there is anything else that you feel we need to know, please let us know.

Doug

From: Krueper, Ron@Parks [mailto:Ron.Krueper@parks.ca.gov]
Sent: Thursday, March 07, 2013 5:32 PM
To: dwymore@q.com
Cc: [Kietzer, Ken@Parks](#); [Arroyo, Enrique@Parks](#); [Elliott, Kelly@Parks](#); 'Gary Lamb'
Subject: RE: view studies

Doug,

Thank you for the view study and the meeting today.

Ron Krueper
District Superintendent
California State Parks
Inland Empire District
17801 Lake Perris Drive
Perris, CA 92571
(951) 940-5622

Please note new email address: Ron.Krueper@parks.ca.gov

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From: Douglas Wymore [<mailto:dwymore@q.com>]
Sent: Thursday, March 07, 2013 7:15 AM
To: Krueper, Ron@Parks
Cc: Kietzer, Ken@Parks; Arroyo, Enrique@Parks; Elliott, Kelly@Parks; 'Gary Lamb'
Subject: view studies

Jordan put together a view study of views from the Park looking out onto Esperanza Hills. It is attached. Take a look at it and we can go over it when we meet this morning.

From: Krueper, Ron@Parks [<mailto:Ron.Krueper@parks.ca.gov>]
Sent: Thursday, February 28, 2013 2:53 PM
To: dwymore@q.com
Cc: Kietzer, Ken@Parks; Arroyo, Enrique@Parks; Elliott, Kelly@Parks; 'Gary Lamb'
Subject: RE: Esperanza Hills

Ok, we will see you next Thursday.

Ron Krueper
District Superintendent
California State Parks
Inland Empire District
17801 Lake Perris Drive
Perris, CA 92571
(951) 940-5622

Please note new email address: Ron.Krueper@parks.ca.gov

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From: Douglas Wymore [<mailto:dwymore@q.com>]
Sent: Thursday, February 28, 2013 1:24 PM
To: Krueper, Ron@Parks
Cc: Kietzer, Ken@Parks; Arroyo, Enrique@Parks; Elliott, Kelly@Parks; 'Gary Lamb';
jneville@lambarchitects.com
Subject: RE: Esperanza Hills

It will just be Gary and I, as far as I know.

I will get the GIS information over to Ken Keitzer via email, hopefully today. Hopefully I can supply that in Adobe Acrobat format so it can easily be read.

We are compiling the view study locations now, and can probably have them for you next week. We will include the points you suggest. Jordan Neville in Lamb Architect's office is getting a copy of this email, so he can include those points. We can probably get you views from those locations in Adobe Acrobat format in advance of the meeting for you to look at.

From: Krueper, Ron@Parks [<mailto:Ron.Krueper@parks.ca.gov>]

Sent: Thursday, February 28, 2013 1:58 PM

To: dwymore@g.com

Cc: Kietzer, Ken@Parks; Arroyo, Enrique@Parks; Elliott, Kelly@Parks; 'Gary Lamb'

Subject: RE: Esperanza Hills

Ok. By chance, could you show us on a map where your photo point(s) were taken and view study(s) are located? We were thinking perhaps from 3-4 various locations from within the park would be beneficial for complete viewshed analysis. Our thoughts on locations were from South Ridge trail (due north of project); San Juan Hill (northeast); Old Edison trail (west); and then from the Blue Mud Canyon area (looking northwest). Only reason for the possible onsite visit/tour with all of us together when we meet next week.

Let' plan on meeting first at the Discovery Center 3/7 10 am and review things around a table. Then if need be, we can take our vehicle(s) for a tour from within the park around the project site.

Also, would it be possible for our Environmental Scientist Ken Kietzer to contact Tony Bomkamp for information on the Golden Eagle? His contact info?

Will it just be you and Gary attending next Thursday? Or will there be others?

Ron Krueper
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From: Douglas Wymore [<mailto:dwymore@g.com>]

Sent: Thursday, February 28, 2013 11:39 AM

To: Krueper, Ron@Parks

Cc: Kietzer, Ken@Parks; Arroyo, Enrique@Parks; Elliott, Kelly@Parks; 'Gary Lamb'

Subject: RE: Esperanza Hills

We have been to San Juan and taken pictures and are constructing a view study that includes that, so we really don't need to go there.

If you want to go to the property, then I would suggest just meeting there instead of your discovery center so everyone doesn't have to travel to two different locations.

I will get you something on the golden eagle nest so you have a gis for your records.

From: Krueper, Ron@Parks [<mailto:Ron.Krueper@parks.ca.gov>]
Sent: Thursday, February 28, 2013 12:30 PM
To: dwymore@q.com
Cc: Kietzer, Ken@Parks; Arroyo, Enrique@Parks; Elliott, Kelly@Parks; Gary Lamb
Subject: RE: Esperanza Hills

Thanks Doug. 10 am then at the Discovery Center. Will we also be visiting your property and the San Juan area?

If you could send us the GIS location we could then cross reference with our records. Thanks again

Ron Krueper
District Superintendent
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From: Douglas Wymore [<mailto:dwymore@q.com>]
Sent: Thursday, February 28, 2013 11:09 AM
To: Krueper, Ron@Parks
Cc: Kietzer, Ken@Parks; Arroyo, Enrique@Parks; Elliott, Kelly@Parks; Gary Lamb
Subject: RE: Esperanza Hills

Ron;

That works. See you there.

Also, as an update, Tony Bomkamp found the Golden Eagle's nest that you referenced in your comment letter and our previous meeting. It lies north of our property. If you don't already know where it is, we can send you the GIS information.

From: Krueper, Ron@Parks [<mailto:Ron.Krueper@parks.ca.gov>]
Sent: Thursday, February 28, 2013 11:35 AM
To: 'dwymore@q.com'
Cc: Kietzer, Ken@Parks; Arroyo, Enrique@Parks; Elliott, Kelly@Parks
Subject: RE: Esperanza Hills

Hello Doug,

Following up to confirm our meeting for next week on March 7th? If need be we could meet at our Discovery Center on Carbon Canyon road. 10 am is good for us.

Ron Krueper
District Superintendent
California State Parks
Inland Empire District
17801 Lake Perris Drive
Perris, CA 92571
(951) 940-5622

Please note new email address: Ron.Krueper@parks.ca.gov

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From: Krueper, Ron@Parks
Sent: Friday, February 22, 2013 12:51 PM
To: 'dwymore@q.com'
Cc: Kietzer, Ken@Parks; Arroyo, Enrique@Parks; Elliott, Kelly@Parks
Subject: Re: Esperanza Hills

Doug

Sure we can review our wildfire management plans with you. How about March 7th? Where and what time do you want to meet?

Ron

From: Douglas Wymore [<mailto:dwymore@q.com>]
Sent: Friday, February 22, 2013 09:36 AM
To: Krueper, Ron@Parks
Cc: 'Gary Lamb' <glamb@lambholdings.net>; tbomkamp@wetlandpermitting.com <tbomkamp@wetlandpermitting.com>; Arroyo, Enrique@Parks; Elliott, Kelly@Parks; Kietzer, Ken@Parks; tbomkamp@wetlandpermitting.com <tbomkamp@wetlandpermitting.com>; Ewan, George <GeorgeEwan@ocfa.org>; Petroff, Brett <BrettPetroff@ocfa.org>; Canning, Kevin <Kevin.Canning@ocpw.ocgov.com>; Roger faubel <rfaubel@faubelpublicaffairs.com>
Subject: RE: Esperanza Hills

Thanks for the reply.

Just as you believe that whatever goes on outside the park potentially affects the park, we believe that whatever goes on inside the park affects what goes on outside the park, and fire management and rehabilitation lie at the heart of the fire protection issue that many residents say they are concerned about.

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Thanks again for your cooperation.

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Sent: Wednesday, February 20, 2013 6:42 PM

To: dwymore@g.com

Cc: Gary Lamb; tbomkamp@wetlandpermitting.com; Arroyo, Enrique@Parks; Elliott, Kelly@Parks; Kietzer, Ken@Parks

Subject: RE: Esperanza Hills

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However, I know you have been in consultation with Orange Co. Fire Authority (OCFA) and their fuel management zone requirements, setbacks, etc. have previously been used with our concurrence on other adjacent Development projects at and near Chino Hills SP. So in the meantime, use of their requirements will probably be compatible, meet our concerns and be a good starting point. For instance, the completed Pulte Home Development off Fairmont Ave (near Rim crest) in Yorba Linda has a 3 zone fuel management area on HOA property. Strict protocols are listed for annual maintenance of the 3 Fuel management zones on the north side of Pulte adjacent to the Park with permanent markers to ensure appropriate thinning, weeding of flashy fuels and wet irrigated areas remain consistent over the years. This would be a good starting template.

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From: Douglas Wymore [<mailto:dwymore@q.com>]
Sent: Wednesday, February 20, 2013 8:49 AM
To: Krueper, Ron@Parks
Cc: Gary Lamb; tbomkamp@wetlandpermitting.com
Subject: Esperanza Hills

Ron;

I haven't receive the draft fire management plan that we discussed in our meeting earlier this year. Could you send it over?

I was talking to Tony Bomkamp at Glen Lukos, our biologists, and he asked if you had any studies that showed how the non-native species have affected the park and the fire danger that has resulted from them.

One of the things that we are doing is putting together a plan for management of the vegetation in Blue Mud Canyon that will use native plants, and we are exploring the possibility of creating habitat for the vireo, which has historically never occupied that site, in addition to fostering regrowth of the Black Walnut trees.

As you know, we redesigned the trial plan to remove entry into the park except from the Old Edison trial, per your request.

It seems to me if we work together on fire issues, we can create a win/win solution for both of us, and it might serve as a template for dealing with other developments adjacent to the park where fire is also a crucial issue that can't and shouldn't be ignored.

We could meet with you Friday afternoon if you wish, if you are in the area, and I would suggest a meeting on site this time. If Friday doesn't work, then maybe we could meet Thursday or Friday or

next week, or the week after.

Looking forward to getting the fire management plan and meeting with you.

Doug

Douglas Wymore

From: Douglas Wymore <dwymore@q.com>
Sent: Friday, March 1, 2013 9:55 AM
To: Krueper, Ron@Parks
Cc: Kietzer, Ken@Parks; Arroyo, Enrique@Parks; Elliott, Kelly@Parks; 'Gary Lamb'
Subject: RE: Esperanza Hills
Attachments: Constraints map with Golden Eagle Location.pdf

Ron;

Attached is an aerial photo constraints map of our property and the surrounding property showing easements, ownerships, etc.

The location of the Golden Eagle nest found by Tony Bomkamp's office is shown to the north of the property.

From: Krueper, Ron@Parks [mailto:Ron.Krueper@parks.ca.gov]
Sent: Thursday, February 28, 2013 1:58 PM
To: dwymore@q.com
Cc: Kietzer, Ken@Parks; Arroyo, Enrique@Parks; Elliott, Kelly@Parks; 'Gary Lamb'
Subject: RE: Esperanza Hills

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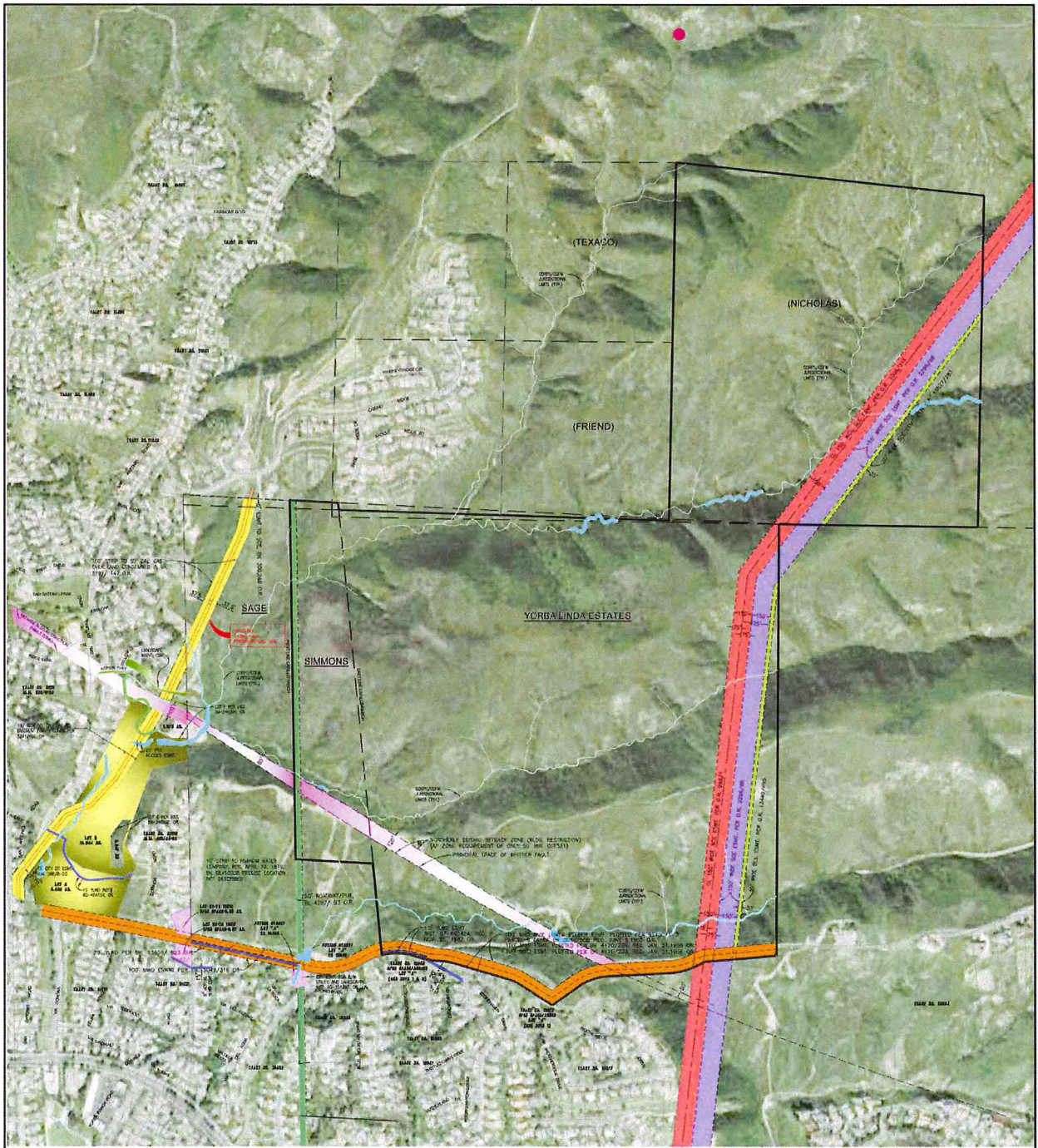
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PROPERTY OWNER & EASEMENT CONSTRAINTS MAP

- YORBA LINDA WATER DISTRICT EASEMENT
- 100' WIDE EASEMENT SOUTHERN CALIFORNIA GAS COMPANY
- METROPOLITAN WATER DISTRICT EASEMENT
- 50' WIDE ROADWAY/PUBLIC UTILITY EASEMENT
- EASEMENT FOR LANDSCAPE MAINTENANCE FOR THE CITY OF YORBA LINDA
- BLDG. RESTRICTION ZONE (FAULT ZONE)
- 20' WIDE PRIVATE ACCESS EASEMENT
- 150' WIDE SOUTHERN CALIFORNIA EDISON EASEMENT
- 150' WIDE SOUTHERN CALIFORNIA EDISON EASEMENT
- 30' WIDE SOUTHERN CALIFORNIA EDISON EASEMENT
- CITY OF YORBA LINDA 89-651276 (LOT A & H)
- CORPS/CDFW JURISDICTION DELINEATION LIMITS (PER 2013 STUDY BY GLEN LUKOS & ASSOC.)

● LOCATION OF GOLDEN EAGLE NEST



NOTES:

1) EASEMENT FOR NON-EXCLUSIVE USE OF ANY ROADS OR ROADWAYS NOW OR HEREAFTER LOCATED ON OR WITHIN THE ADI (AHManson DEVELOPMENTS, INC.) PROPERTY FOR INGRESS TO AND EGRESS FROM ALL OF ANY PORTION OF THE DHM (DAVID H. MURDOCK) PROPERTY PER AGREEMENT INST. 88-6440.56 RECORDED DEC. 12, 1988 (ADI PROPERTY IDENTIFIED AS TR. 12020, 12848, 12849, 12856, 12857, 12850, 12877, 12878, LOTS 7-11 OF TR. 12821).

2) PACIFIC AMERICAN PROPERTIES, INC., HOLDER OF AN EASEMENT FOR INGRESS AND EGRESS OVER EXISTING PRIVATE ROADS RECORDED IN BOOK 12083, PAGE 703 OF OFFICIAL RECORDS. (HISTORICAL ACCESS RIGHTS)

REVISION DATE: 02-25-13



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From: Douglas Wymore [<mailto:dwymore@q.com>]
Sent: Thursday, February 28, 2013 11:39 AM
To: Krueper, Ron@Parks
Cc: Kietzer, Ken@Parks; Arroyo, Enrique@Parks; Elliott, Kelly@Parks; 'Gary Lamb'
Subject: RE: Esperanza Hills

We have been to San Juan and taken pictures and are constructing a view study that includes that, so we really don't need to go there.

If you want to go to the property, then I would suggest just meeting there instead of your discovery center so everyone doesn't have to travel to two different locations.

I will get you something on the golden eagle nest so you have a gis for your records.

From: Krueper, Ron@Parks [<mailto:Ron.Krueper@parks.ca.gov>]
Sent: Thursday, February 28, 2013 12:30 PM
To: dwymore@q.com
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Subject: RE: Esperanza Hills

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Ron;

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Also, as an update, Tony Bomkamp found the Golden Eagle's nest that you referenced in your comment letter and our previous meeting. It lies north of our property. If you don't already know where it is, we can send you the GIS information.

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Sent: Thursday, February 28, 2013 11:35 AM

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To: [Krueper, Ron@Parks](#)
Cc: [Kietzer, Ken@Parks](#); [Arroyo, Enrique@Parks](#); [Elliott, Kelly@Parks](#); "Gary Lamb"
Subject: view studies
Date: Thursday, March 7, 2013 8:15:00 AM
Attachments: [Esperanza Hills Chino State Park Views 3 4 13.pdf](#)

Jordan put together a view study of views from the Park looking out onto Esperanza Hills. It is attached. Take a look at it and we can go over it when we meet this morning.

From: Krueper, Ron@Parks [mailto:Ron.Krueper@parks.ca.gov]
Sent: Thursday, February 28, 2013 2:53 PM
To: [dwymore@q.com](#)
Cc: [Kietzer, Ken@Parks](#); [Arroyo, Enrique@Parks](#); [Elliott, Kelly@Parks](#); 'Gary Lamb'
Subject: RE: Esperanza Hills

Ok, we will see you next Thursday.

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To: Krueper, Ron@Parks
Cc: [Kietzer, Ken@Parks](#); [Arroyo, Enrique@Parks](#); [Elliott, Kelly@Parks](#); 'Gary Lamb'; jneville@lambarchitects.com
Subject: RE: Esperanza Hills

It will just be Gary and I, as far as I know.

I will get the GIS information over to Ken Keitzer via email, hopefully today. Hopefully I can supply that in Adobe Acrobat format so it can easily be read.

We are compiling the view study locations now, and can probably have them for you next week. We will include the points you suggest. Jordan Neville in Lamb Architect's office is getting a copy of this email, so he can include those points. We can probably get you views from those locations in Adobe Acrobat format in advance of the meeting for you to look at.

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Hello Doug,

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From: Krueper, Ron@Parks
Sent: Friday, February 22, 2013 12:51 PM
To: 'dwymore@q.com'
Cc: Kietzer, Ken@Parks; Arroyo, Enrique@Parks; Elliott, Kelly@Parks
Subject: Re: Esperanza Hills

Doug

Sure we can review our wildfire management plans with you. How about March 7th? Where and what time do you want to meet?

Ron

From: Douglas Wymore [<mailto:dwymore@q.com>]
Sent: Friday, February 22, 2013 09:36 AM
To: Krueper, Ron@Parks
Cc: 'Gary Lamb' <glamb@lambholdings.net>; tbomkamp@wetlandpermitting.com <tbomkamp@wetlandpermitting.com>; Arroyo, Enrique@Parks; Elliott, Kelly@Parks; Kietzer, Ken@Parks; tbomkamp@wetlandpermitting.com <tbomkamp@wetlandpermitting.com>; Ewan, George <GeorgeEwan@ocfa.org>; Petroff, Brett <BrettPetroff@ocfa.org>; Canning, Kevin <Kevin.Canning@ocpw.ocgov.com>; Roger faubel <rfaubel@faubelpublicaffairs.com>
Subject: RE: Esperanza Hills

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From: Douglas Wymore [<mailto:dwymore@g.com>]
Sent: Wednesday, February 20, 2013 8:49 AM
To: Krueper, Ron@Parks
Cc: Gary Lamb; tbomkamp@wetlandpermitting.com
Subject: Esperanza Hills

Ron;

I haven't receive the draft fire management plan that we discussed in our meeting earlier this year. Could you send it over?

I was talking to Tony Bomkamp at Glen Lukos, our biologists, and he asked if you had any studies that showed how the non-native species have affected the park and the fire danger that has resulted from them.

One of the things that we are doing is putting together a plan for management of the vegetation in Blue Mud Canyon that will use native plants, and we are exploring the possibility of creating habitat for the vireo, which has historically never occupied that site, in addition to fostering regrowth of the Black Walnut trees.

As you know, we redesigned the trial plan to remove entry into the park except from the Old Edison trial, per your request.

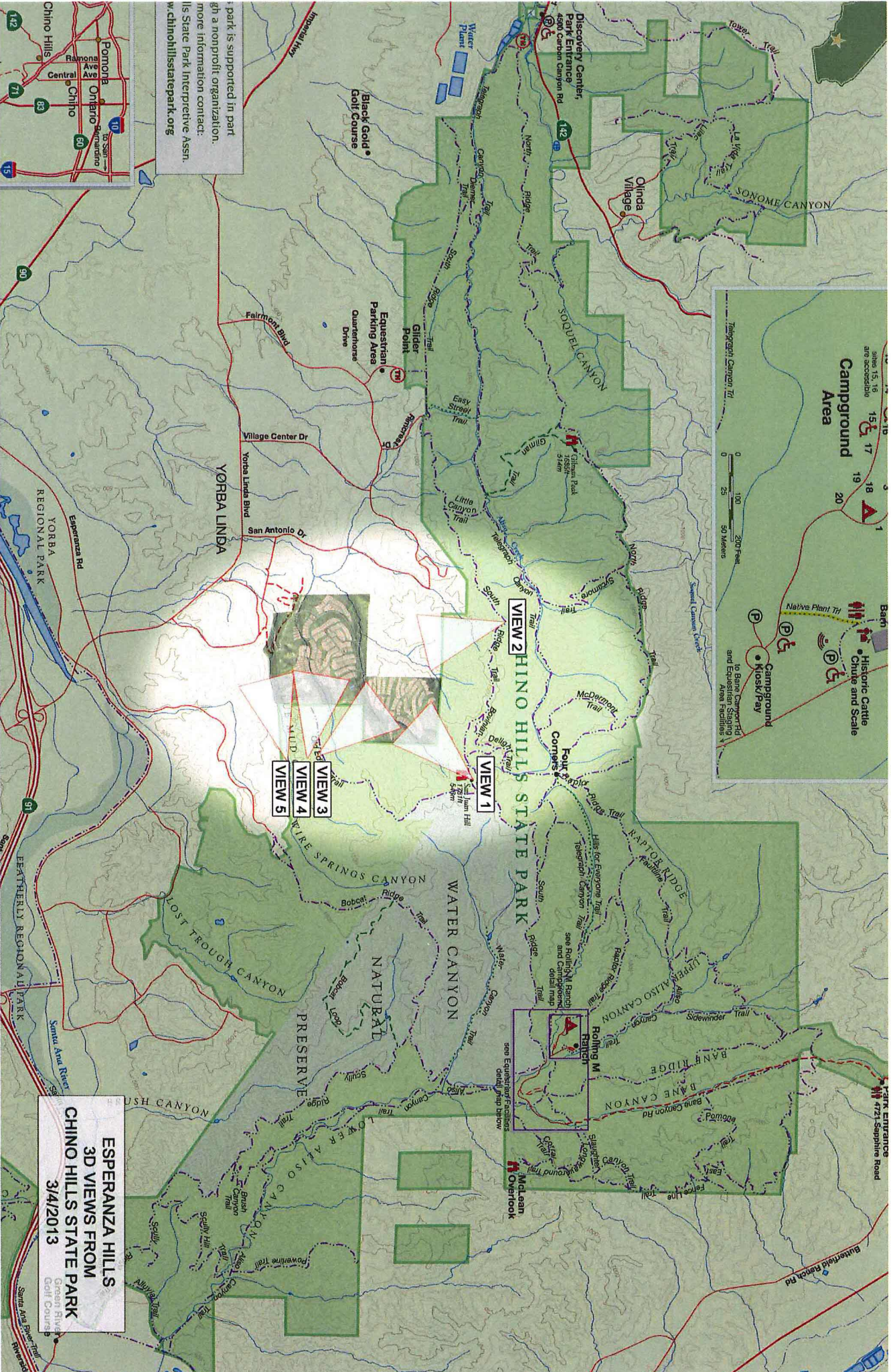
It seems to me if we work together on fire issues, we can create a win/win solution for both of us, and it might serve as a template for dealing with other developments adjacent to the park where fire is also a crucial issue that can't and shouldn't be ignored.

We could meet with you Friday afternoon if you wish, if you are in the area, and I would suggest a meeting on site this time. If Friday doesn't work, then maybe we could meet Thursday or Friday or

next week, or the week after.

Looking forward to getting the fire management plan and meeting with you.

Doug



park is supported in part
 by a nonprofit organization.
 For more information contact:
 Chino Hills State Park Interpretive Assn.
 www.chinohillstatepark.org

Campground Area

Views 15, 16 are accessible

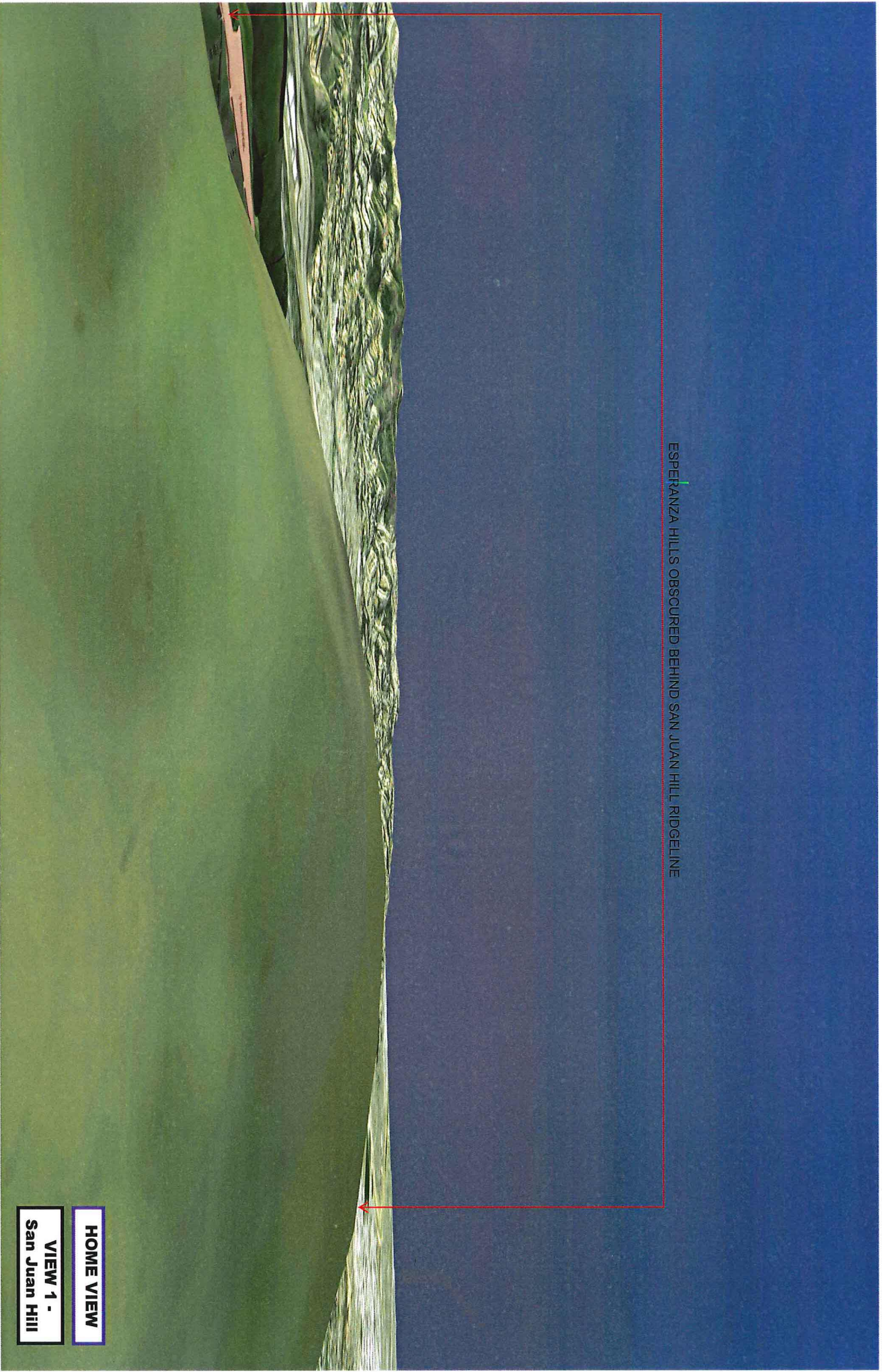
0 100 200 Feet
 0 25 50 Meters

Trail: Telegraph Canyon Tr.
 Trail: Native Plant Tr.
 Amenities: Campground, Kiosk/Pay, Historic Cattle Chute and Scale, Restrooms, Drinking Water, Picnic Area, and Equestrian Staging Area facilities.

**ESPERANZA HILLS
 3D VIEWS FROM
 CHINO HILLS STATE PARK**

3/4/2013

Chino Hills State Park
 Golf Course



ESPERANZA HILLS OBSCURED BEHIND SAN JUAN HILL RIDGELINE

HOME VIEW
VIEW 1 -
San Juan Hill



ESPERANZA HILLS VIEWED FROM SOUTH RIDGE TRAIL

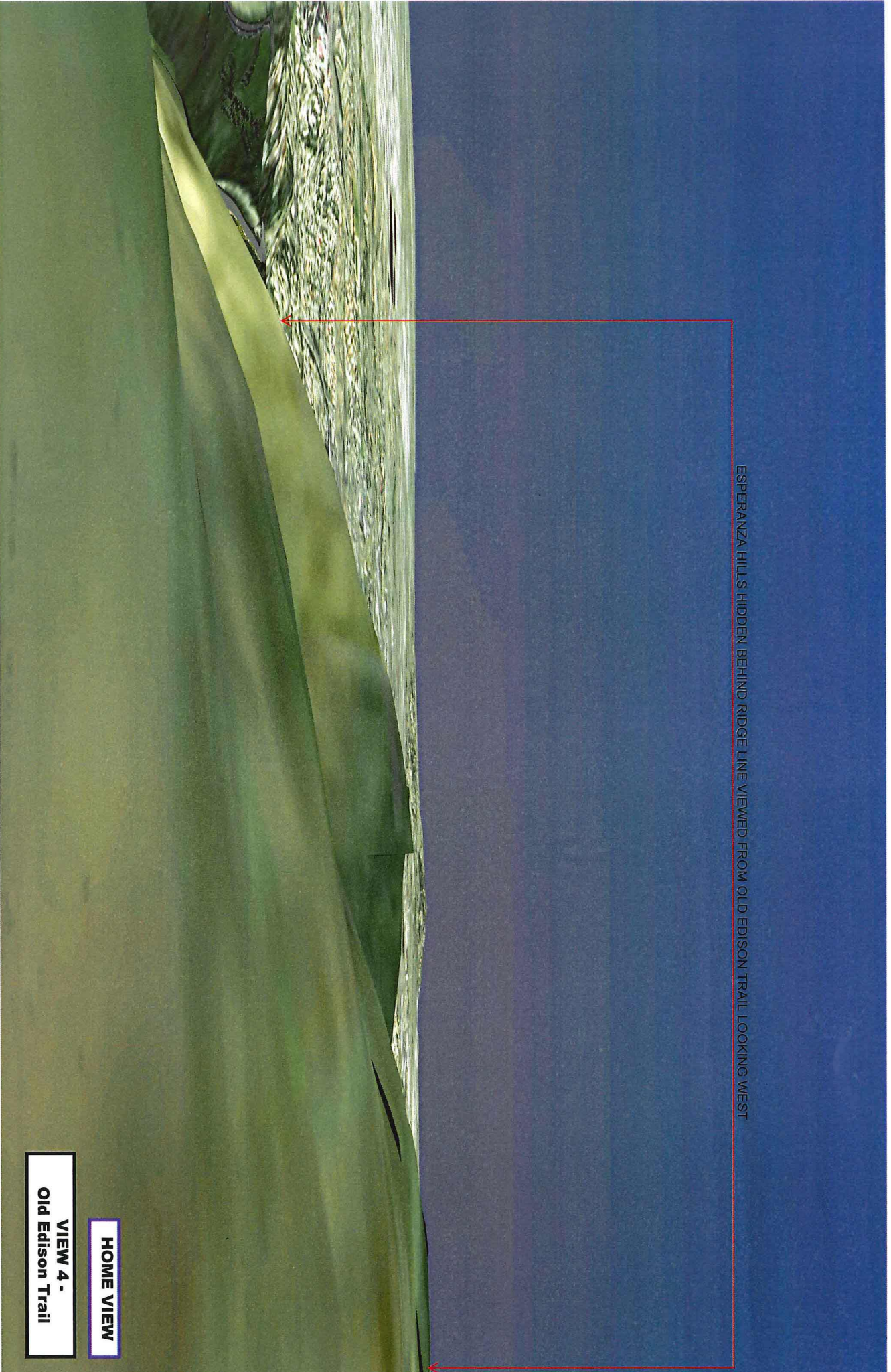
HOME VIEW

**VIEW 2 -
South Ridge Trail**

ESPERANZA HILLS HIDDEN BEHIND RIDGELINE VIEWED FROM OLD EDISON TRAIL LOOKING NORTH

HOME VIEW

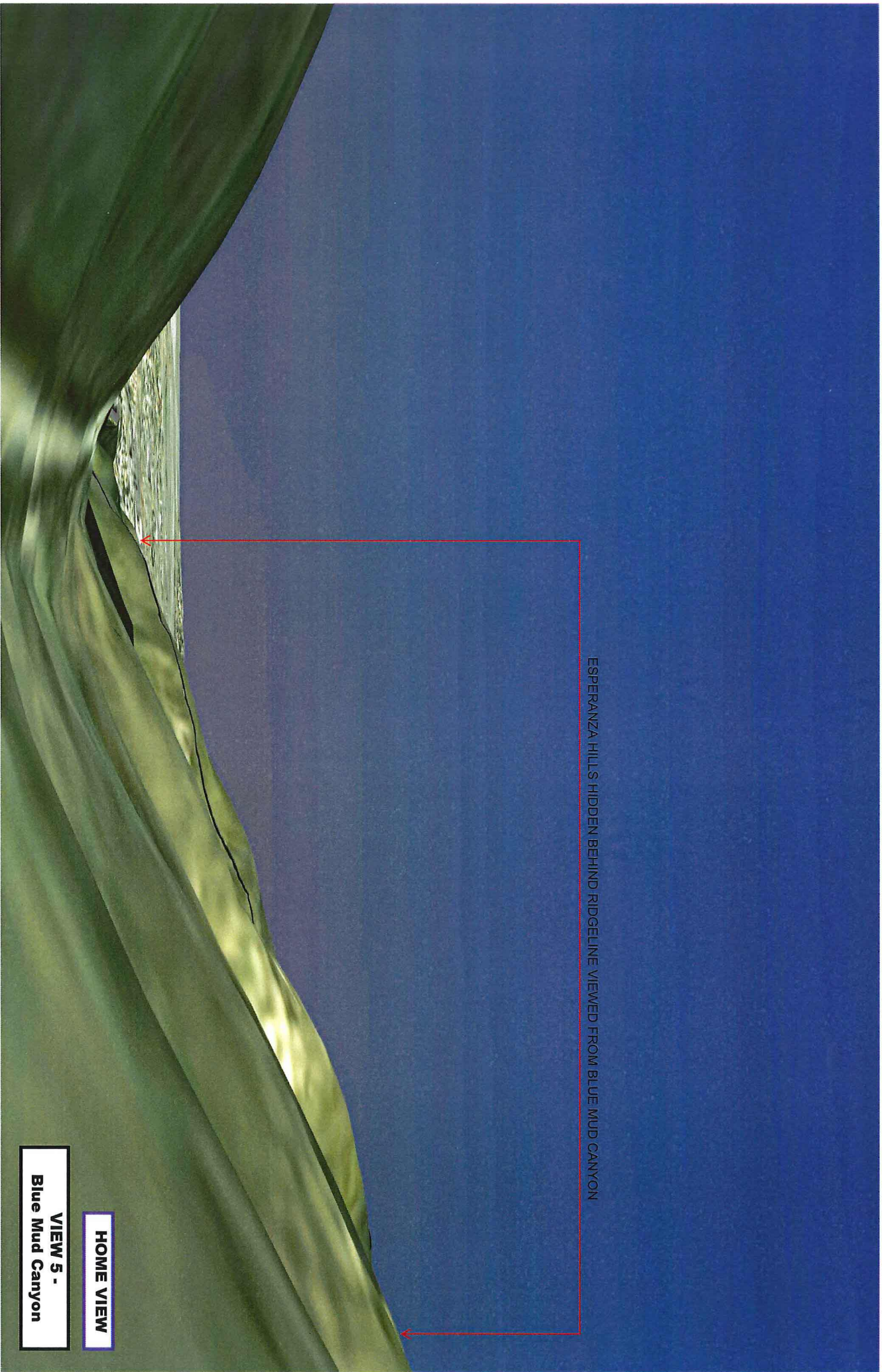
**VIEW 3 -
Old Edison Trail**



ESPERANZA HILLS HIDDEN BEHIND RIDGE LINE VIEWED FROM OLD EDISON TRAIL LOOKING WEST

HOME VIEW

**VIEW 4 -
Old Edison Trail**



ESPERANZA HILLS HIDDEN BEHIND RIDGELINE VIEWED FROM BLUE MUD CANYON

HOME VIEW

**VIEW 5 -
Blue Mud Canyon**

From: [Douglas Wymore](#)
To: [Krueper, Ron](#); [Elliott, Kelly](#); [Arroyo, Enrique](#)
Cc: [Gary Lamb](#); tbomkamp@wetlandpermitting.com; [Shawna Schaffner](#); [Tom Mathews](#); [Kietzer, Ken](#); [Carver, Larynn](#)
Subject: RE: Esperanza Hills
Date: Friday, November 2, 2012 6:56:00 AM

Thanks.

From: Krueper, Ron [mailto:RKRUEPER@parks.ca.gov]
Sent: Thursday, November 01, 2012 5:18 PM
To: dwymore@q.com; Elliott, Kelly; Arroyo, Enrique
Cc: Gary Lamb; tbomkamp@wetlandpermitting.com; Shawna Schaffner; Tom Mathews; Kietzer, Ken; Carver, Larynn
Subject: RE: Esperanza Hills

Doug, Gary,

You may have already seen this in our General Plan, but just in case regarding trail connections. See attached guidelines for Trail access from our GP page 71.

Ron Krueper
District Superintendent
California State Parks
Inland Empire District
17801 Lake Perris Drive
Perris, CA 92571
(951) 940-5622

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From: Krueper, Ron
Sent: Thursday, November 01, 2012 4:49 PM
To: 'dwymore@q.com'; Elliott, Kelly; Arroyo, Enrique
Cc: Gary Lamb; tbomkamp@wetlandpermitting.com; Shawna Schaffner; Tom Mathews; Kietzer, Ken; Carver, Larynn
Subject: RE: Esperanza Hills

Doug and Gary,

It was good to meet with you and review components of your project and likewise for you to review our concerns with the adjacent Chino Hills SP. I believe you covered the main point quite well below. See below for further thoughts and updates adjacent to your bullit points.

We certainly believe early dialogue/discussions before the EIR process takes place is in the best interest for all involved.

Ron Krueper
District Superintendent
California State Parks
Inland Empire District
17801 Lake Perris Drive
Perris, CA 92571
(951) 940-5622

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From: Douglas Wymore [<mailto:dwymore@q.com>]
Sent: Friday, October 26, 2012 6:21 PM
To: Krueper, Ron; Elliott, Kelly; Arroyo, Enrique
Cc: Gary Lamb; tbomkamp@wetlandpermitting.com; Shawna Schaffner; Tom Mathews
Subject: Esperanza Hills

Ron, Kelly and Enrique;

Thanks for meeting with us yesterday to discuss our project and the Chino Hills State Park general plan and the relationship of our project to the park.

As I understand it, you need some 3D views from us showing the proposed lot and street design in the northeast corner of our property to make sure that residents and visitors are not encouraged to put in a new trail to access the park. Instead, you want to use existing designed trails in the park, and want to discourage any new trails. Kelly was going to send us GPS coordinates of the area where you want the trail from our property to enter the park, and you want to see the entrance design. You also want the access points designed so that it will limit traffic to designed uses. Further, where there are existing roads used by OCFA and SoCal Edison, which connect into our streets, you want to make sure that located gates are installed to prohibit vehicular access except for already existing grandfathered uses.

Concur and I believe Kelly has already provided GPS coordinates to Gary. As we discussed, we should plan an onsite field trip in the park and on your property so we can discuss and visually see potential trails access points, etc. Additionally, as part of the EIR review, State Parks would request a "viewshed, visual analysis" (before and after) of the development and how it would impact views from inside the park for the visitor looking south and west. You mentioned consideration in your project design for reducing viewshed impacts, off of ridge lines, etc. for the existing City residents looking north and east. A viewshed analysis from the opposite direction before the EIR process starts (from the park) would be good. If we did collaborate on an onsite meeting to review trail connections, we could also indicate to you those points where a viewshed analysis from inside the park might be worthwhile dependent on your development layout.

You also want to make sure that no part of the park is used or required for fuel modification, as you will not allow it. [Concur](#). You will send us a copy of the draft fire management plan for the park, although it has not yet been adopted.

[Presently working on providing you a copy.](#)

You want to encourage native species to thrive, such as the walnut trees, but discourage any non-native species for the reasons set forth in the general plan, and also for fire management.

[Concur](#)

You believe that goats are a better alternative than crushing landscape for fuel breaks, such as in the Southern Cal Edison easement areas. However, you believe they should be monitored, and they would not be allowed in any portion of the park area.

[We believe "goats" maybe one option. Additional review and investigation will be needed to arrive at the preferred method.](#)

You are concerned about the development and its effect on wildlife movement, or constriction of area. You are also concerned about native plant preservation, particularly where our development borders the park. This will be covered in our biological study.

[As well as the regulatory agencies are concern about overall wildlife movement for the permitting process. An example, Golden Eagles use the area for foraging \(as well as the rest of the park\) and with their numbers dwindling in So. Calif. are a concern for USFWS, DFG & State Parks.](#)

I indicated that once we had relevant portions of the EIR drafted we would show them to you.
[Thank you.](#)

We covered a lot of subjects, and appreciate your time. I tried to cover the main points, but if I missed anything please let me know.

Thanks again.

Doug

From: [Douglas Wymore](#)
To: rkrueper@parks.ca.gov; [Elliott, Kelly \(kelliott@parks.ca.gov\)](mailto:kelliott@parks.ca.gov); [Arroyo, Enrique \(earroyo@parks.ca.gov\)](mailto:arroyo@parks.ca.gov)
Cc: [Gary Lamb; tbomkamp@wetlandpermitting.com](mailto:garylamb@wetlandpermitting.com); [Shawna Schaffner \(sschaffner@caaplanning.com\)](mailto:sschaffner@caaplanning.com); [Tom Mathews \(tmathews@caaplanning.com\)](mailto:tmathews@caaplanning.com)
Subject: Esperanza Hills
Date: Friday, October 26, 2012 6:21:00 PM

Ron, Kelly and Enrique;

Thanks for meeting with us yesterday to discuss our project and the Chino Hills State Park general plan and the relationship of our project to the park.

As I understand it, you need some 3D views from us showing the proposed lot and street design in the northeast corner of our property to make sure that residents and visitors are not encouraged to put in a new trail to access the park. Instead, you want to use existing designed trails in the park, and want to discourage any new trails. Kelly was going to send us GPS coordinates of the area where you want the trail from our property to enter the park, and you want to see the entrance design. You also want the access points designed so that it will limit traffic to designed uses. Further, where there are existing roads used by OCFA and SoCal Edison, which connect into our streets, you want to make sure that located gates are installed to prohibit vehicular access except for already existing grandfathered uses.

You also want to make sure that no part of the park is used or required for fuel modification, as you will not allow it. You will send us a copy of the draft fire management plan for the park, although it has not yet been adopted.

You want to encourage native species to thrive, such as the walnut trees, but discourage any non-native species for the reasons set forth in the general plan, and also for fire management.

You believe that goats are a better alternative than crushing landscape for fuel breaks, such as in the Southern Cal Edison easement areas. However, you believe they should be monitored, and they would not be allowed in any portion of the park area.

You are concerned about the development and its effect on wildlife movement, or constriction of area. You are also concerned about native plant preservation, particularly where our development borders the park. This will be covered in our biological study.

I indicated that once we had relevant portions of the EIR drafted we would show them to you.

We covered a lot of subjects, and appreciate your time. I tried to cover the main points, but if I missed anything please let me know.

Thanks again.

Doug

From: [Douglas Wymore](#)
To: [Krueper, Ron](#); glamb@lambholdings.net
Cc: [Elliott, Kelly](#); [Arroyo, Enrique](#); [Kietzer, Ken](#)
Subject: RE: Esperanza Hills Development, Yorba Linda CA Orange Co.
Date: Tuesday, October 23, 2012 6:43:00 AM

Thanks. See you there.

From: Krueper, Ron [<mailto:RKRUEPER@parks.ca.gov>]
Sent: Monday, October 22, 2012 5:14 PM
To: dwymore@q.com; glamb@lambholdings.net
Cc: Elliott, Kelly; Arroyo, Enrique; Kietzer, Ken
Subject: RE: Esperanza Hills Development, Yorba Linda CA Orange Co.

Ok sounds good. 10 am this Thursday 10/25.

Chino Hills SP Discovery Center
4500 Carbon Canyon Road, Hwy 142
Brea, CA 92823

The entrance to the Discovery Center parking lot is on the right side of Hwy 142 eastbound, just past the Orange County Regional Park.

My cell is 951 232 4927

Ron Krueper
District Superintendent
California State Parks
Inland Empire District
17801 Lake Perris Drive
Perris, CA 92571
(951) 940-5622

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From: Douglas Wymore [<mailto:dwymore@q.com>]
Sent: Monday, October 22, 2012 4:48 PM
To: Krueper, Ron; glamb@lambholdings.net
Cc: Elliott, Kelly; Arroyo, Enrique; Kietzer, Ken
Subject: RE: Esperanza Hills Development, Yorba Linda CA Orange Co.

How about 10 am in Brea at Chino Hills State Park?

Is there a particular room or address to meet you?

My cell phone number is 602 738-8181 if anything comes up.

From: Krueper, Ron [<mailto:RKRUEPER@parks.ca.gov>]
Sent: Monday, October 22, 2012 1:42 PM
To: dwymore@q.com; glamb@lambholdings.net
Cc: Elliott, Kelly; Arroyo, Enrique; Kietzer, Ken
Subject: RE: Esperanza Hills Development, Yorba Linda CA Orange Co.

Doug,

Thank you for the reply. By coincidence our schedule this Thursday is fairly open. Where are your other meetings taking place? We have various offices located about the Inland Empire. At Lake Perris (east of Riverside), Cal Citrus off of Van Buren in the City of Riverside and then at Chino Hills SP in Brea (on Carbon Cyn. Road, Hwy 142) where we could meet. Or we could meet at another location. 10 am works well for us.

Ron Krueper
District Superintendent
California State Parks
Inland Empire District
17801 Lake Perris Drive
Perris, CA 92571
(951) 940-5622

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From: Douglas Wymore [<mailto:dwymore@q.com>]
Sent: Monday, October 22, 2012 1:12 PM
To: Krueper, Ron; glamb@lambholdings.net
Subject: RE: Esperanza Hills Development, Yorba Linda CA Orange Co.

Ron;

We did get a general plan, and have read it. As I indicated in the meeting, we would like to meet with you. We may be able to meet with you this Thursday, depending upon where the meeting would take place. We have other meetings scheduled, so we might have to work around a few things.

Sorry for the late reply on this. I did not see your email until looking back to find another email. For whatever reason, my email was being delayed back then, so either that occurred or I just missed it.

From: Krueper, Ron [<mailto:RKRUEPER@parks.ca.gov>]
Sent: Friday, October 05, 2012 6:12 PM
To: glamb@lambholdings.net; dwymore@q.com
Subject: FW: Esperanza Hills Development, Yorba Linda CA Orange Co.

Gary Lamb and Gary Wymore,

Hello, just checking to see if this information was forwarded to you? And if you would like to meet with State Parks we are available.

Ron Krueper
District Superintendent
California State Parks
Inland Empire District
17801 Lake Perris Drive
Perris, CA 92571
(951) 940-5622

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From: Brian Lochrie [<mailto:blochrie@faubelpublicaffairs.com>]
Sent: Monday, September 17, 2012 3:18 PM
To: Krueper, Ron
Cc: Arroyo, Enrique; Elliott, Kelly; Kietzer, Ken
Subject: RE: Esperanza Hills Development, Yorba Linda CA Orange Co.

Thank you for this Ron –

I'll forward this on to the property owner Gary Lamb and the planner for the Esperanza Hills development Gary Wymore.

You can reach them directly at glamb@lambholdings.net and dwymore@q.com.

Very much appreciated!

Brian

From: Krueper, Ron [<mailto:RKRUEPER@parks.ca.gov>]
Sent: Monday, September 17, 2012 1:59 PM
To: blochrie@faubelpublicaffairs.com
Cc: Arroyo, Enrique; Elliott, Kelly; Kietzer, Ken
Subject: Esperanza Hills Development, Yorba Linda CA Orange Co.

Brian,

State Parks (representing Chino Hills State Park) attending the August 23rd, 2012 open house meeting in Yorba Linda where the Esperanza Hills Development was reviewed. I do not remember the names of everyone from your staff who made presentations, but I did leave my business card for further contact and a possible meetings. Since then I have been on vacation & out of the office, however someone from you staff did make an email inquiry to me about the project and inquired about the Chino Hills State Park General Plan. Unfortunately, I cannot find that email again now that I'm back in the office (somehow got deleted). So I'm starting with an inquiry to you to reconnect so to speak. And we can continue the dialogue.

Here is the link directly to the CHSP General Plan.

<http://www.parks.ca.gov/pages/21299/files/chino%20hills%20finalgp.pdf> This General Plan was completed in 1999 and since then a significant amount of additional property has been added to the park to satisfy mitigation requirements by regulatory agencies. Hence, the maps in the GP are not current (attached is the most recent boundary map from the park brochure).

State Parks looks forward to future discussions on this project.

Ron Krueper
District Superintendent
California State Parks
Inland Empire District
17801 Lake Perris Drive
Perris, CA 92571
(951) 940-5622

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Team meeting talking points:

- Time Line – The County has to vacate the approvals and EIR certification within 120 days, or by **August 1**. If the application is not completed by then, the County will have to take vacating the approvals as a separate item to the BOS. Within 180 days, or by **October 1**, the County has to file a return to the BOS stating we have complied with the 120 day period above and explain any/all actions that we have taken to revise the EIR. (Writ Item No.1, a & b & g)
- Vacate REIR Certification – Does the vacating of the certified REIR then require a new NOP be prepared and published? (Writ Item No.1, a & d)
- Recirculation
 - Recirculation is not required to be completed by October 1st.
 - Optional?
 - Use of Supplemental EIR?
 - Appeal on GHG in relation to recirculating REIR.
- Indirect Impacts – Must address the indirect impacts that are perceived to be “edge conditions:” to CHSP.
- CHSP Section Location – Location of the “new” CHSP section in the Second REIR. New Section 4.3, combined with Section 4.2, Section 4.2-a, etc.
- CHSP and Additional Topics – The Second REIR may need to evaluate additional topics with respect to the CHSP beyond the “Big 3” of Aesthetics, Biological Resources, and Fire Hazards referenced in the Opinion. (Opinion, Section C, par. 1, pg. 9)
- New CHSP Section – Content and style. Include or exclude explanation of changes.
- Work Flow – Who does what and when, etc.

Attachment E
Revision to Section 5.15, Utilities and Service Systems,
Second Revised FEIR on Water Use

1. Court of Appeal's Decision in *Protect Our Homes and Hills v County of Orange*

The Court of Appeal issued an opinion in *Protect Our Homes and Hills v County of Orange*, G054185, in which it examined the analysis as to whether the Esperanza Hills Project (Project) would require new or expanded entitlements to have sufficient water supplies available to serve the Project, stating:

Consistent with the CEQA Guidelines, the DEIR posed the question of whether the Project would “[r]equire new or expanded entitlements to have sufficient water supplies available to serve the [P]roject[.]” To determine what, if any, new water facilities would be needed, a County consultant prepared a preliminary water report. The report assumed a density of approximately one dwelling unit per acre and used an average day water demand of 1,070 gallons per day per dwelling unit. Based on these numbers, and an assumed development of 340 residential lots, it estimated “total” average daily demand would be 0.36 million gallons per day. The report made no mention of construction phase water demand or projected water demand for the Project’s common areas, including its many parks, once the Project is built. *[Slip Opinion page 20]*

The water demand analysis referred to by the Court of Appeal was the 50-page March 2013 Northeast Area Planning Study (NEAPS), which was prepared by Carrollo Engineers for the Yorba Linda Water District (YLWD), not the County, “to evaluate the capacity of existing distribution system facilities and size new infrastructure required to provide water under anticipated operational conditions for future demands.”¹

As detailed in Revised Final Environmental Impact Report (RFEIR) Chapter 5, Section 5.15.3.1(a) in Utilities and Service Systems, the NEAPS analyzed water storage capacity and locations for fire flow, pump station capacity and locations, alternative water supply routes, water quality, planned developments, existing district demands, historical district demands, assumed demands for other developments in progress, projected demands by pressure zone, and various other factors to determine what infrastructure was necessary to serve YLWD’s demands for its northeast area, including projected demands for developments to serve the Project and Cielo Vista (aka Sage).

The Court of Appeal determined that the estimated water demand needed to be provided in more detail, stating:

In order to answer the question of whether there will be sufficient water supplies for the Project, one need first explain the Project’s estimated water demand. Yet, the only demand calculated in the FEIR and its appendices is that of each “dwelling unit” or “lot.” There is no explanation of the anticipated water demand associated with the community’s landscaped common areas, roughly 85

1 NEAPS, page ES-1, Appendix R to RFEIR

acres of fuel modification zones and habitation mitigation areas. This includes, for example, roughly 13 acres of active and passive parks “dramatic fountain geysers and [a] boulder-lined babbling brook[,]” and fruit tree groves. Also absent is any discussion of water demand associated with the projected two years of grading for the Project and three to seven years of construction. *[Slip Opinion, page 23]*

The Court also criticized the analysis and lack of detail for construction phase water demand and projected demand for the Project’s common areas, stating:

“The report made no mention of construction phase water demand or projected water demand for the Project’s common areas, including its many parks, once the Project is built.” *[Slip Opinion, page 20]*

As the reader will see from the discussion below, the analysis mandated by the Court of Appeal resulted in a determination by the County concluding that the overall water demand for the project will be substantially less than what the NEAPS projected, despite its apparent omissions according to the Court of Appeal, as noted below. As set forth below, the new analysis reflects updated assumptions for water usage within the 340 individual residential lots within the Project, resulting in lower per-lot consumption than previously projected and provided in the RFEIR. The analysis also reflects the fact that the landscaping in common areas is intended to use as little water as feasible.

Thus, although the NEAPS estimated the total water use for the Project at 1,070 gallons per day per acre, which assumed a density of one (1) dwelling unit (or residence) per acre,² or approximately 363,000 gallons per day for the entire Project, the revised analysis shows that, even accounting for water demand in common areas, the total projected actual long-term demand for the entire Project upon completion is only 263,428.8 gallons per day, or 72.4% of the original estimate from the NEAPS. Because NEAPS equated gallons per day and one dwelling unit per acre, this section will use the terms interchangeably but with the same meaning.

To determine whether the baseline demand of 1,070 gallons per day per dwelling unit, estimated in the NEAPS was sufficient to conclude that the infrastructure requirements set forth in the NEAPS were adequate to serve the Project and Cielo Vista, the Applicant retained consultants to calculate water use for grading and construction of streets and roads, domestic household purposes for each residence, landscape use for each lot, parks, fuel modification zones on the perimeter of the Project, interior landscape zones, and mitigation areas. Letters from the various consultants documenting their conclusions are attached to the 2018 Additional Environmental Analysis (2018 AEA) as Attachment F.

² NEAPS, page 3, Table 1 – Estimated Development Demand, Appendix R to RFEIR

To comply with the Court of Appeal Decision, this Revised Water Demand Analysis section provides the following analyses under each of the following subsections:

2. Original Water Demand Analysis contained in the RFEIR
3. Total Short-Term Construction Water Analysis
4. Total Long-Term Household Water Use Estimate
5. Total Long-Term Landscape Water Use
6. Total Long-Term Water Use

The domestic water use for each household was based on historical use and reports from the Metropolitan Water District of Southern California. The water use for each landscape component was estimated based on compliance with the California Model Water Efficient Landscape Ordinance (MWELO) as well as the low water use plant palettes from the Project's Specific Plan by Summers Murphy & Partners, licensed California landscape architects based in Dana Point, California. Construction water for the infrastructure construction was based on an estimate from Sukut Construction (Sukut), a grading contractor that has been constructing large residential, public works, and commercial projects in Orange County since 1968. Sukut was involved in Pelican Hill, Aviara, Vista Del Verde, Crystal Cove, and the 26-mile Foothill/Eastern Transportation Corridor. Construction water necessary for the vertical construction of homes was estimated by Todd Cunningham of Woodbridge Pacific. Mr. Cunningham has been involved in residential construction in Orange County and the Yorba Linda area since the 1980s, and was responsible for construction of the homes and subdivision south of the Project in the 1990s and Casino Ridge in the mid-2000s. The water demand for mitigation areas in the Project was determined by Glenn Lukos & Associates, the biological consulting firm responsible for designing the mitigation areas.

2. Original Water Demand Analysis Contained in Revised FEIR

5.15 Utilities and Service Systems

5.15.3 Project Impacts Prior to Mitigation

1. Water Service

d) *Revised Projected Water Demand*

Under Option 1 and Option 2, a projected water demand factor of 1,070 gallons per day per dwelling unit (gpd/DU) was used to determine the Average Day, Maximum Day, and Peak Hour Demands. This assumes an approximate density of 1 dwelling unit per acre (DU/ac). The maximum day and peak hour demands are estimated as 1.48 and 2.55 times the average daily demand, respectively, as identified in the YLWD Water Master Plan. The 1000 Zone has 46 proposed lots, the 1200 Zone has 200 proposed lots, and the 1390 Zone has 88 proposed residential lots, including two

(2) estate lots. The following tables summarize the projected water demands for Option 1 and Option 2.

Table 5-15-2 Project Development Water Demand Summary, Esperanza Hills Option 1

Watershed ID	Tributary Lots (dwelling units)	Average Day Demand (mgd)	Maximum Day Demand (mgd)	Peak Hour Demand (mgd)
Esperanza Hills	334	0.36	0.53	0.91
Total	334	0.36	0.53	0.91

Note: Demands based on unit count within each zone assuming an approximate density of 1 dwelling unit per acre

Table 5-15-3 Esperanza Hills Water Demand Summary - Option 1

Watershed ID	Tributary Lots (dwelling units)	Average Day Demand (mgd)	Maximum Day Demand (mgd)	Peak Hour Demand (mgd)
1000 Zone	46	0.04	0.06	0.11
1200 Zone	200	0.22	0.33	0.56
1390 Zone	88	0.09	0.14	0.24
Total	334	0.36	0.53	0.91

Table 5-15-4 Project Development Water Demand Summary, Esperanza Hills Option 2

Watershed ID	Tributary Lots (dwelling units)	Average Day Demand (mgd)	Maximum Day Demand (mgd)	Peak Hour Demand (mgd)
Esperanza Hills	340	0.36	0.54	0.93
Total	340	0.36	0.54	0.93

Note: Demands based on unit count within each zone assuming an approximate density of 1 dwelling unit per acre

Table 5-15-5 Esperanza Hills Water Demand Summary - Option 2

Watershed ID	Tributary Lots (dwelling units)	Average Day Demand (mgd)	Maximum Day Demand (mgd)	Peak Hour Demand (mgd)
1000 Zone	46	0.05	0.07	0.13
1200 Zone	206	0.22	0.33	0.56
1390 Zone	88	0.09	0.14	0.24
Total	340	0.36	0.54	0.93

The results show that there is no difference between the Average Daily Demand and a slight increase, from 0.53 to 0.54 mgd, in water demands between Option 1 and Option 2. This will have no significant impact on the sizing of the proposed water infrastructure facilities within the Project. The Project's water infrastructure system shall be designed to meet YLWD's design minimum and maximum requirements for system pressures, pipe velocity, reservoir storage, and fire flow capacities. A minimum static pressure of 60 pounds per square inch (psi) shall be provided for the Project based on the reservoirs' designed high water level for each pressure zone. The Orange County Fire Authority (OCFA) is the agency responsible for establishing the fire flow requirements for the YLWD's service area. These flows are based on the current California Fire Code. A minimum fire flow storage of 1,500 gpm for a 2-hour duration with a minimum residual pressure of 20 psi is proposed for the project to meet OCFA's and YLWD's fire flow requirements for single-family residential developments. OCFA

normally allows a reduction to the fire flow requirements for developments that have incorporated fire sprinkler systems, specific building construction types, fuel modification, fire breaks, and other special fire protection measures. However, OCFA has indicated that it will not allow credits or reduction on the fire flow requirements for this project, because it is located in a Very High Fire Hazard Severity Zone (VHFHSZ).

A model of the Project’s water system will be prepared and analyzed during final design to ensure that the proposed infrastructure system meets YLWD’s design minimum and maximum requirements for pressures, pipe velocity, reservoir storage, and fire flow capacities. The water storage required for the homes within the proposed 1000 Zone will be supplied by the proposed 1200 Zone Reservoir.

Table 5-15-6 summarizes the water system’s static pressures based upon the proposed pad elevations of each lot. The Proposed Project’s water infrastructure system will meet YLWD’s design minimum and maximum requirements for system pressures, pipe velocity, reservoir storage, and fire flow capacities.

Table 5-15-6 Esperanza Hills Water Service Zone Static Pressure Summary

Watershed ID	Maximum Lot Elevation (feet)	Maximum Static Pressure (pounds per square inch)
1000 Zone	881	82
1200 Zone	1,086	132
1390 Zone	1,275	119

e) Total Short-Term Construction Water Analysis

1. Grading and Infrastructure

Sukut completed a preliminary analysis of the grading necessary for the Project, and estimated that 15,000,000 cubic yards of material would be moved. Based on its experience, which includes grading large projects in Orange County and Southern California since 1968, Sukut estimated that approximately 20 gallons of water would be required for each cubic yard of material moved. There are two phases to the Project, and the grading for each phase is approximately equal. Sukut projected that the total construction time for construction of the Phase 1 would be 15.5 months, and Phase 2 for construction would be 15 months. Sukut estimated that peak use for water during grading could reach up to 800,000 gallons per day, while water for use during non-grading infrastructure activities such as installation of utilities, curbs, medians, roads, and monuments would be as low as approximately 50,000 gallons per day. The average construction water use for grading Phase 1 is 10,103,226 gallons per month, while the average construction water use for Phase 2 is 10,440,000 gallons per month.

The water available for use during the Project’s short-term construction phase has been available since 2015, although none has been used to date. Because no dwelling units will be constructed and occupied, and the landscape and mitigation areas will not be installed until the infrastructure improvements are complete for both phases,

the construction water used, when allocated across both construction phases, will be less than the long-term water use estimated to be available by the YLWD upon Project completion. Average water use upon completion of the Project was projected by YLWD at approximately 11,041,250 gallons per month (363,000 gpd x 365 days/12 months). Because the water used during each of the construction phases is less than the estimated monthly water use upon completion, and because the water has been available per the NEAPS but unused, the construction water to be used for grading and infrastructure construction of improvements does not exceed the original estimates for total long-term water demand contained in the NEAPS.

2. Residential Construction

The County received information regarding water usage associated with residential construction in the region from Woodbridge Development and Woodbridge Pacific Group, which have been involved in home building in Southern California since 1994, and have completed 24 new home neighborhoods in Southern California, including the Casino Ridge Development adjacent to Esperanza Hills. Recently, Woodbridge Pacific has also been involved in home building in Bakersfield, Palm Springs, San Juan Capistrano, and Huntington Beach. Based on his review of the Esperanza Hills site plan, site visits, and experience in building homes in the range of 4,500 to 6,500 square feet, Todd S. Cunningham, President and COO of the Woodridge Pacific Group, has estimated that the water necessary for the construction of each home from the issuance of construction permits to delivery of the home to the buyer will be approximately 25,000 to 30,000 gallons in the typical 6 month period necessary to construct a house, which equates to approximately 166.67 gallons per day, assuming 30,000 gallons per lot is used.

f) Total Long-Term Domestic Household Water Use Estimate

Steve Nielsen, a registered Professional Engineer with Dexter Wilson & Company, an engineering firm that specializes in water use and infrastructure design, was retained to project domestic water use, based on historical water use. The baseline residential use per lot was determined from an Executive Report on the Orange County Water Reliability Study (Reliability Study) by the Municipal Water District of Orange County completed in December 2016, which determined that the single-family residential use for the Yorba Linda Water District was 586 gallons per day per dwelling unit, including landscape water. Landscape water generally consists of the water used for ornamental uses such as lawns, shrubs, trees, etc.

To determine what portion of the residential lot use of 586 gallons per day was domestic use and what portion was landscape use, Mr. Nielsen referred to a publication issued by the Yorba Linda Water District called "Water 101" that states, on page 5: "Within the Yorba Linda Water District, more than 60% of all the water used in the home is on the lawn and garden."³ This would mean that 40% of the 586

3 <https://ylwd.com/community/water-101#4>

gallons per day, or 234.4 gallons per day, is for domestic use on each single-family residential lot.

The Project will achieve significant water conservation savings in relation to historical water use by implementing current state and local green building code standards for indoor water use, also known as domestic water use. Indoor water use savings will be achieved through the use of low flow toilets, low flow showerheads, low water use dishwashers and washing machines, and other fixtures as dictated by state and local green building code requirements.

With the implementation of state mandated and Green Building Code water conservation measures, it is conservatively estimated that indoor water use can be reduced by 20% compared to historical data, but to be conservative, no reduced water usage for domestic household use is estimated for purposes of this water use demand analysis.

Because the landscape for each lot is subject to the MWELo, it was not appropriate to use historical landscape water use, as MWELo only applies to new construction and has only been in existence for a few years, so landscape use for each lot was estimated by Summers Murphy & Partners.

g) Total Long-Term Project Landscape Water Use

Total landscape water use, for both lots and common areas, was determined by Summers Murphy & Partners, by determining the exact square feet of each irrigated area, inserting the requirements for the plant palettes or uses, categorizing the uses, and then inserting the water use factors into spreadsheet format. The projected water use was then compared to the Maximum Allowed Water Allocation (“MAWA”) for each component of landscape under MWELo.

The total landscape water use for all landscape purposes is estimated at 540.22 gallons per lot per day, as shown on Table 5-15-7 below. This estimate was based on determining the total irrigated area and water use for each component of landscape use as shown on the Project landscape plan, calculating the total gallons used on the Project and then determining how many gallons could be attributed to the 340 lots within the Project on a per lot basis.

Table 5-15-7 Total Landscape Water Use Estimate Summary

	Days	Lot Number	Gallons per Day	Gallons per Day per Lot	Gallons per Year
Special Maintenance MAWA* % of MAWA	365	340	66,024	194.19	24,098,602 24,166,227 100%
Parks MAWA % of MAWA	365	340	21,375	62.87	7,801,734 8,029,510 97%
Zone B (Fuel Modification) MAWA % of MAWA	365	340	29,445	86.60	10,747,432 11,317,046 95%

	Days	Lot Number	Gallons per Day	Gallons per Day per Lot	Gallons per Year
Typical Lot (est. 17,000 SF) MAWA % of MAWA	365	338	64,445	191	23,522,570 24,582,226 96%
Estate Lot 1 (est. 48,308 SF) MAWA % of MAWA	365	1	552	552	201,490 203,655 96%
Estate Lot 2 (est. 165,391 SF) MAWA % of MAWA	365	1	1,833	1,833	669,197 699,344 96%
Total site gallons per year					67,041,025
Total site acre-feet per year					205.74
Total site gallons per day per lot					540.22

* Maximum allowed water allowance

Yorba Linda Water District Water allowance, all lots 132,787,000 gallons per year (number of days × number of lots × 1,070)
 540.22 gallons per lot per day
 Total site yearly use 67,041,025 gallons
 % of allocation – landscape 50.5%

1. Residential Lot Landscape Use Estimate

The Project has 338 typical residential lots that average 17,545 square feet with minimum building pads of 9,800 square feet to be conservative. Instead of estimating irrigation use for the building pad only, the irrigation area is estimated at approximately 4,300 square feet for each lot because some of the building pads are larger, and landscaping may occur outside the building pad area in some instances. Landscaping will consist of primarily low water use landscaping with limited turf area. Taking into account the restrictions for MAWA for each residential lot, Summers Murphy & Partners completed calculations as set forth below in Table 5-15-8 for the landscape use for the 338 typical lots. Average outdoor water usage for each lot is 191 gpd/unit, as shown on Table 5-15-7 above.

Exhibit 5-15-8 Water Usage for a Typical 17,000-SF Lot

Hydrozone No./Planting Description	Plant Factor (PR)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF × Area	Est. Total Water Use (ETWU)
Regular Landscape Areas							
1. Low water use shrubs (70%)	0.3	drip	0.81	0.370	1,131	419	12,881
2. Medium water use shrubs (30%)	0.5	drip	0.81	0.617	1,333	823	25,304
3. Low water use shrubs (70%)	0.3	drip	0.81	0.370	1,346	498	15,329
4. Rear yard lawn (30%)	0.8	overhead spray	0.75	1.067	490	523	16,080
Totals					4,300	2,263	69,593
Special Landscape Areas (SLA)							
1. Low water use shrubs				1	0	0	0
2. Medium water use shrubs				1	0	0	0
4. High water use turf				1	0	0	0
Totals					0	0	0
Estimated Total Water Use (ETWU)							69,593
Maximum Allowed Water Allowance (MAWA)							72,728

2. Special Maintenance Area Landscape Use Estimate

The landscape plan for the Project shows 2,033,270 square feet of irrigated area within the Special Maintenance Areas. The landscape palette is divided into low, medium, and high water use, and is set forth below in Table 5-15-9. The projected water use for special maintenance areas is 194.19 gallons per lot per day as shown in Table 5-15-7.

Table 5-15-9 Water Usage for Special Maintenance Areas

Hydrozone No./Planting Description	Plant Factor (PR)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF × Area	Est. Total Water Use (ETWU)
Regular Landscape Areas							
1. Low water use shrubs	0.3	drip	0.81	0.370	1,646,949	609,981.00	\$16,110,818
2. Medium water use tree	0.5	drip	0.81	0.617	0	0.00	0
3. Medium water use shrubs	0.5	drip	0.81	0.617	243,992	150,612.59	3,977,980
4. High water use turf	0.8	overhead spray	0.75	1.067	142,329	151,817.49	4,089,804
Totals					2,033,270	912,411.09	24,098,602
Special Landscape Areas (SLA)							
1. Low water use shrubs				1	0	0	0
2. Medium water use shrubs				1	0	0	0
4. High water use turf				1	0	0	0
Totals					0	0	0
Estimated Total Water Use (ETWU)							24,098,602
Maximum Allowed Water Allowance (MAWA)							24,166,227

3. Estate Lot 1

Estate Lot 1 is a 48,308-square-foot lot located in the northwest corner of Phase 2 of the Project near the underground reservoir located at an elevation of 1,390 feet. The total landscape area is 12,041 square feet. The landscape palette is divided into low, medium, and high water use, and is set forth below in Table 5-15-10. The total projected water use for landscaping for Estate Lot 1 is 552 gallons per day as shown in Table 5-15-7.

Table 5-15-10 Water Use for Estate Lot 1 (48,308 Square Feet)

Hydrozone No./Planting Description	Plant Factor (PR)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF × Area	Est. Total Water Use (ETWU)
Regular Landscape Areas							
1. Low water use shrubs (70%)	0.3	drip	0.81	0.370	4,227	1,566	48,143
2. Medium water use shrubs (30%)	0.5	drip	0.81	0.617	2,657	1,640	50,436
3. Low water use shrubs (70%)	0.3	drip	0.81	0.370	3,094	1,146	35,240
4. Rear yard lawn (30%)	0.8	overhead spray	0.75	1.067	2,063	2,201	67,671
Totals					12,041	6,552	201,490
Special Landscape Areas (SLA)							
1. Low water use shrubs				1	0	0	0
2. Medium water use shrubs				1	0	0	0
4. High water use turf				1	0	0	0
Totals					0	0	0
Estimated Total Water Use (ETWU)							201,490
Maximum Allowed Water Allowance (MAWA)							203,655

4. Estate Lot 2

Estate Lot 2 is a 165,391-square-foot lot located in the northeast corner of Phase 2 of the Project immediately bordering Chino Hills State Park. The total landscape area is 41,348 square feet. The landscape palette is divided into low, medium, and high water use, and is set forth below in Table 5-15-11. The total projected water use for landscaping for Estate Lot 2 is 1,833 gallons per day as shown in Table 5-15-7.

Table 5-15-11 Water Usage for Estate Lot 2 (165,391 Square Feet)

Hydrozone No./Planting Description	Plant Factor (PR)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF × Area	Est. Total Water Use (ETWU)
Regular Landscape Areas							
1. Low water use shrubs (70%)	0.3	drip	0.81	0.370	10,875	4,028	123,857
2. Medium water use shrubs (30%)	0.5	drip	0.81	0.617	12,818	7,912	243,318
3. Low water use shrubs (70%)	0.3	drip	0.81	0.370	12,942	4,793	147,404
4. Rear yard lawn (30%)	0.8	overhead spray	0.75	1.067	4,714	5,028	154,618
Totals					41,348	21,761	669,197
Special Landscape Areas (SLA)							
1. Low water use shrubs				1	0	0	0
2. Medium water use shrubs				1	0	0	0
4. High water use turf				1	0	0	0
Totals					0	0	0
Estimated Total Water Use (ETWU)							669,197
Maximum Allowed Water Allowance (MAWA)							699,344

5. Fuel Modification

The Project has 952,181 square feet of Zone B fuel modification zones that will be irrigated as necessary to preserve their character as required by OCFA regulations. The landscape palette is divided into low and medium water use, as set forth below in Table 5-15-12. The plant palette is governed by the OCFA regulations for plants and for maintenance. The total projected water use for the Zone B fuel modification translates into 86.60 gallons per day per lot as shown in Table 5-15-7 above.

Table 5 -15-12 Water Usage for Zone B

Hydrozone No./Planting Description	Plant Factor (PR)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF × Area	Est. Total Water Use (ETWU)
Regular Landscape Areas							
1. Low water use shrubs	0.3	drip	0.81	0.370	732,447	271,276.48	7,164,954
2. Medium water use tree	0.5	drip	0.81	0.617	73,245	45,212.96	1,194,165
3. Medium water use shrubs	0.5	drip	0.81	0.617	146,489	90,425.31	2,388,313
4. High water use turf	0.8	overhead spray	0.75	1.067	0	0.00	0
Totals					952,181	406,914.75	10,747,432
Special Landscape Areas (SLA)							
1. Low water use shrubs				1	0	0	0
2. Medium water use shrubs				1	0	0	0
4. High water use turf				1	0	0	0
Totals					0	0	0
Estimated Total Water Use (ETWU)							10,747,432
Maximum Allowed Water Allowance (MAWA)							11,317,046

6. Parks

The Project has 454,482 square feet of park area that will be irrigated, including 99,493 square feet of high water use turf and the water features near the entrance to the Project. The landscape palette is divided into low, medium, and high water use, as set forth below in Table 5-15-13. The projected water use for the park areas translates into 62.87 gallons per lot per day as shown in Table 5-15-7 above.

Table 5-15-13 Water Usage for Parks

Hydrozone No./Planting Description	Plant Factor (PR)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF × Area	Est. Total Water Use (ETWU)
Regular Landscape Areas							
1. Low water use shrubs	0.3	drip	0.81	0.370	120,969	44,803.18	1,183,342
2. Medium water use tree	0.5	drip	0.81	0.617	0	0.00	0
3. Medium water use shrubs	0.5	drip	0.81	0.617	234,020	144,456.77	3,815,392
4. High water use turf	0.8	overhead spray	0.75	1.067	99,493	106,126.03	2,803,001
Totals					454,482	295,385.97	7,801,734
Special Landscape Areas (SLA)							
1. Low water use shrubs				1	0	0	0
2. Medium water use shrubs				1	0	0	0
4. High water use turf				1	0	0	0
Totals					0	0	0
Estimated Total Water Use (ETWU)							7,801,734
Maximum Allowed Water Allowance (MAWA)							8,029,510

7. Mitigation Water Use

The Project includes 2.05 acres of riparian mitigation area, which is created through grading adjacent to areas subject to the jurisdiction of the U.S. Army Corp of Engineers in Blue Mud Canyon and at the northwest corner of Phase 1 of the Project in Drainage D. The mitigation areas have been designed so that no irrigation should be necessary, and none is contemplated to maintain the habitat once it is established.

Irrigation may be used for the first three years to establish mitigation areas should insufficient rainfall occur, which is estimated at 1.50 acre-feet per acre of the mitigation areas. The water necessary for mitigation would occur by flooding the mitigation areas to simulate drainage flow three or four times per dry season in any year where rainfall and other drainage is insufficient to provide sufficient water for the plants. The mitigation water would require a maximum of 3.08 acre-feet (one acre-foot of water is equal to 325,851 gallons) of water applied over a 6-month period. Irrigating all of the mitigation areas would use a maximum of 1,003,621 gallons per year, spread over a 6-month period, increasing monthly demand in the month in which the mitigation occurred by 16.40 gallons per lot per day, assuming that all 340 lots were completed and occupied. However, because the mitigation areas will be installed as part of Phase 1, which is the construction of the 218 lots on the 310 acres owned by Yorba Linda Estates and OC 33 and is expected to occur two to three years prior to completion of the grading and vertical construction for Phase 2 representing the 122 lots on the property owned by Yorba Linda North, LLC, the mitigation water

will not increase beyond the total water use for the Project as shown on Table 5-15-14 below.

h) Total Long-Term Water Use

The total water use for the project is set forth in Table 5-15-14 below.

Table 5-15-14 Total Water Use Upon Project Completion

Type of Use	Total Gallons per Day for 340 Lots	Gallons Per Lot per Day
Domestic Use	79,696	234.4
Landscape Use	183,675	540.22
Total Operational Use	263,371	774.62

The total water use for the 340-lot Project was estimated in the NEAPS at 1,070 gallons per lot per day, or 363,000 gallons per day upon completion of all lots and residences. The total projected actual long-term demand once the Project is completed is 263,371 gallons per day, or 72.6% of the original estimate from the NEAPS after the short-term construction phase water demand has been completed. This does not take into account the expected 20% savings from low water use fixtures and appliances. Therefore, the projected actual water demand is less than the water demand estimates made by the YLWD in its NEAPS study in 2013.

Attachment F
Letters from Consultants Regarding Water Use



Douglas Wymore
Yorba Linda Estates, LLC
7114 E. Stetson Drive #350
Scottsdale, AZ 85251

Dear Doug;

As you are aware, Sukut Construction has been involved in hundreds of earthmoving projects in Southern California since its inception in 1968, including golf courses and residential communities at Pelican Hill and Aviara. We have also been involved in major earthmoving residential projects in Yorba Linda, including Vista Del Verde. Some of our larger projects include the 26-mile Foothill/Eastern Transportation Corridor, which involved moving 67 million cubic yards, Crystal Cove, which involved moving 30 million cubic yards, and the Walnut Grove residential project, which involved moving 17.5 million cubic yards.


The Engineering News – Record has named us a top 400 contractor in 2015 - 2017 and one of the top 200 environmental firms in 2014 – 2017. Sukut also recently received awards from the American Public Works Association for Project of the Year for the 2016 La Plata Avenue Gap Closure in San Juan Capistrano in 2016 and the La Novia Roundabout Project in San Juan Capistrano in 2017.

You requested that we provide you with an estimate of the water that will be required for construction of the project's infrastructure. We reviewed the site plans for the Esperanza Hills project and visited the site on numerous occasions, including the geotechnical exploration phase. Based on our internal grading estimates, we believe that the project will involve moving approximately 15 million cubic yards of material. We require approximately 20 gallons of water per cubic yard of material moved, and our goal is to move approximately 40,000 cubic yards per day, with peak water use at approximately 800,000 gallons per day. After the grading is completed we estimate that an average of approximately 50,000 gallons of water per day will be required to complete installation of the roads and utilities, compaction of the lots and completion of the remaining infrastructure so that vertical construction can begin.

We estimate that this project will require 15.5 months to complete the first phase and 15 months to complete the second phase, based on working 22 days per month. Both phases are balanced, and approximately equal in material required to be moved. Based on the assumptions set forth above, our estimated average water use is approximately 10,103,226 gallons per month for the first phase and 10,440,000 gallons per month for the second phase.

Please contact me should you require additional information or have any questions.

Sincerely



Steve Yurosek
President

Moving Earth to Award-Winning Levels

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Contractor's License No. 985106



WOODBRIDGE PACIFIC GROUP

June 5, 2018

Douglas Wymore
Yorba Linda Estates, LLC
7114 E. Stetson #350
Scottsdale, AZ 85251

Dear Doug

You have requested that we give you an estimate of the amount of construction water used during the vertical construction of the homes that are planned for the Esperanza Hills community.

Woodbridge Development has been involved in homebuilding in Southern California since its inception in 1994, and completed twenty four new home neighborhoods in Southern California, including the Casino Ridge Development adjacent to Esperanza Hills. Recently, Woodbridge Pacific has been involved in homebuilding in Bakersfield, Palm Springs, San Juan Capistrano, and Huntington Beach. I manage community planning, housing product design, and project planning for all construction, marketing, merchandising and sales functions.

I have reviewed the site plan for Esperanza Hills, and personally visited the site. I am familiar with the product type that will need to be constructed, and have experience as a project manager for construction oversight in Yorba Linda, having also worked for M.J. Brock, which developed homes directly south of the Esperanza Hills site in the 1990's.

The homes are planned to be in the 4,500 to 6,500 square foot range, and we have built many homes of this size over the past several years in Southern California. Generally, based on our experience, these homes take six to twelve months to build. During the course of construction, we use water for various purposes, including dust control, construction, compaction, landscape and clean up.

Based on our experience, the amount of water that we will use during the course of construction of each home is approximately 25,000 to 30,000 gallons, from the time that we pull the construction permit to the time that we deliver the finished home to the buyer.

Please contact me directly should you have any further questions.

Sincerely

Todd S Cunningham
President, COO
Woodbridge Pacific Group

MEMORANDUM

GLENN LUKOS ASSOCIATES

Regulatory Services



PROJECT NUMBER: 10500002ESPE
TO: Douglas G. Wymore
FROM: Tony Bomkamp
DATE: July 13, 2018
SUBJECT: Potential Biological Mitigation Water Use, Esperanza Hills, Orange County, California

The project proposes 2.05 acres of riparian mitigation, which is to be established through grading adjacent to U.S. Army Corp of Engineers and California Department of Fish and Wildlife Jurisdiction in Blue Mud Canyon and at the northwest corner of Phase 1 of the Project adjacent to Drainage D. The mitigation areas have been designed so that no irrigation would be necessary beyond two years for establishment of the vegetation to ensure that performance standards are achieved. Irrigation would be discontinued no more than two years (three years maximum) following establishment, thus there would be no irrigation once the habitat is established.

As noted, irrigation for establishment is permitted and it is estimated that it will require a maximum of 1.5-acre feet of water per year per acre of habitat to achieve establishment. If there are normal rainfall levels spread throughout the rainy season, less irrigation may be sufficient, as the mitigation areas have been designed to slow down drainage in the canyons, providing sufficient hydrology for establishment of the mitigation areas. The riparian area that the project is seeking to mitigate only became established after the Metropolitan Water District placed K-rails in Blue Mud Canyon sometime after the 2008 Freeway Complex Fire, thereby slowing the drainage in the lower reach of Blue Mud Canyon, and the design of the mitigation areas was in part based on that occurrence. We have monitored the proposed mitigation areas over the past several years and observed that the existing vegetation is recovering from the 2008 Freeway Complex Fire, even with the lower levels of rainfall in the past few years, indicating that these areas have a normal water supply now, which will be enhanced by the mitigation design.

If necessary, the irrigation required for mitigation would consist of flooding the mitigation areas to simulate drainage flow three or four times per dry season in any year where rainfall and other drainage is insufficient to provide sufficient water for establishment of the plants. During below-normal rainfall, annual irrigation would total approximately 3.0-acre feet of water. One acre-foot of water is equal to 325,851 gallons, so irrigating all of the mitigation area would use a maximum of 1,003,621 gallons per year, spread over a six-month period, increasing monthly demand in the months that the mitigation occurred by 16.40 gallons per unit per day.



Douglas Wymore
 Yorba Linda Estates, LLC
 7114 E. Stetson #350
 Scottsdale, AZ 85251

Dear Mr. Wymore;

Summers Murphy and Partners (“SMP”) is a full service professional landscape architectural planning firm that has been in business in Orange County for over 50 years. Our portfolio includes landscape planning for residential design, master planned community design, commercial institutional design, recreational golf course, resort and hospitality design. We have won awards for multiple projects in the Yorba Linda area, including awards for the Enclave Project and Amalfi Hills. Other representative award winning residential projects in Southern California include Sanabria – Terraces at Robertson Ranch in Carlsbad, the Estates at Del Sur in San Diego, Beacon Park at Great Park in Irvine, Capri Collection at Hidden Canyon in Irvine, the Highlands at Baker Ranch in Lake Forest, the Fields at Lambert Ranch at Irvine, Lambert Ranch in Irvine, and the Tides at Crystal Cove.

We have been involved in the landscape design for Esperanza Hills since its inception in 2012, and completed a landscape water usage study earlier this year. To determine the projected water use, we determined the square feet of each irrigated area, inserting the requirements for the plant palettes or uses, categorizing the uses, and then inserting the water use factors into spreadsheet format. The projected water use was then compared to the Maximum Allowed Water Allocation (MAWA) for each component of landscape under the Model Water Efficiency Landscape Ordinance.

The landscape areas are shown on the landscape plan contained in the Specific Plan for the project and landscaped areas were calculated using Autocad. We then took into account the landscape palette for each area, the irrigation requirements for each area, and then used industry standards and our experience to determine the irrigation necessary for each component of the landscape.

The total landscape water use for all landscape purposes is estimated at 540.22 gallons per lot per day, as shown on Table 1 below. This estimate was based on determining the total irrigated area and water use for each component of landscape use as shown on the Project landscape plan, calculating the total gallons used on the Project and then determining how many gallons could be attributed to the 340 lots within the proposed Project on a per lot basis.

Table 1 Total Landscape Water Use Estimate Summary

	Days	Lot Number	Gallons per Day	Gallons per Day	
				per Lot	Gallons per Year
Special Maintenance	365	340	66,024	194.19	24,098,602
MAWA*					24,166,227
% of MAWA					100%
Parks	365	340	21,375	62.87	7,801,734
MAWA					8,029,510
% of MAWA					97%

	Days	Lot Number	Gallons per Day	Gallons per Day per Lot	Gallons per Year
Zone B (Fuel Modification)	365	340	29,445	86.60	10,747,432
MAWA					11,317,046
% of MAWA					95%
Typical Lot (est. 17,000 SF)	365	338	64,445	191	23,522,570
MAWA					24,582,226
% of MAWA					96%
Estate Lot (est. 48,308 SF)	365	1	552	552	201,490
MAWA					203,655
% of MAWA					96%
Estate Lot 2 (est. 165,391 SF)	365	1	1,833	1,833	669,197
MAWA					699,344
% of MAWA					96%
Total site gallons per year					67,041,025
Total site acre-feet per year					205.74
Total site gallons per day per lot					540.22

* Maximum allowed water allowance

Yorba Linda Water District	Water allowance, all lots	132,787,000 gallons per year (number of days × number of lots × 1,070)
		540.22 gallons per lot per day
	Total site yearly use	67,041,025 gallons
	% of allocation – landscape	50.5%

a. Residential Lot Landscape Use Estimate

Esperanza Hills has 338 typical residential lots that average 17,545 square feet with minimum building pads of 9,800 square feet. Instead of estimating irrigation use for the building pad only, the irrigation area is estimated at approximately 4,300 square feet for each lot because some of the building pads are larger, and landscaping may occur outside the building pad area in some instances. This estimate is based on approximately 20 - 25% of the total lot area being landscaped, which is a conservative estimate that assumes landscaping outside of the actual building pad area. Landscaping will consist of primarily low water use landscaping with limited turf area. Taking into account the restrictions for MAWA for each residential lot, the landscape water for a typical residential lot are set forth below in Table 2 below for each of the 338 typical lots. Average outdoor water usage for each typical lot is 191 gpd/unit, as shown on Table 1 above.

Table 2 Water Usage for a Typical 17,000-SF Lot

Hydrozone No./Planting Description	Plant Factor (PR)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF × Area	Est. Total Water Use (ETWU)
Regular Landscape Areas							
1. Low water use shrubs (70%)	0.3	drip	0.81	0.370	1,131	419	12,881
2. Medium water use shrubs (30%)	0.5	drip	0.81	0.617	1,333	823	25,304
3. Low water use shrubs (70%)	0.3	drip	0.81	0.370	1,346	498	15,329
4. Rear yard lawn (30%)	0.8	overhead spray	0.75	1.067	490	523	16,080
Totals					4,300	2,263	69,593
Special Landscape Areas (SLA)							
1. Low water use shrubs				1	0	0	0
2. Medium water use shrubs				1	0	0	0
4. High water use turf				1	0	0	0
Totals					0	0	0
Estimated Total Water Use (ETWU)							69,593
Maximum Allowed Water Allowance (MAWA)							72,728

b. Special Maintenance Area Landscape Use Estimate

The landscape plan for the Project shows 2,033,270 square feet of irrigated area within the Special Maintenance Areas. The landscape palette is divided into low, medium, and high water use, and is set forth below in Table 3. The projected water use for special maintenance areas is 194.19 gallons per lot per day as shown in Table 1.

Table 3 Water Usage for Special Maintenance Areas

Hydrozone No./Planting Description	Plant Factor (PR)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF × Area	Est. Total Water Use (ETWU)
Regular Landscape Areas							
1. Low water use shrubs	0.3	drip	0.81	0.370	1,646,949	609,981.00	\$16,110,818
2. Medium water use tree	0.5	drip	0.81	0.617	0	0.00	0
3. Medium water use shrubs	0.5	drip	0.81	0.617	243,992	150,612.59	3,977,980
4. High water use turf	0.8	overhead spray	0.75	1.067	142,329	151,817.49	4,089,804
Totals					2,033,720	912,411.09	24,098,602
Special Landscape Areas (SLA)							
1. Low water use shrubs				1	0	0	0
2. Medium water use shrubs				1	0	0	0
4. High water use turf				1	0	0	0
Totals					0	0	0
Estimated Total Water Use (ETWU)							24,098,602
Maximum Allowed Water Allowance (MAWA)							24,166,227

c. Estate Lot 1

Estate Lot 1 is a 48,308-square-foot lot located in the northwest corner of Phase 2 of the Project near the underground reservoir located at an elevation of 1,390 feet. The total landscape area is 12,041 square feet. The landscape palette is divided into low, medium, and high water use, and is set forth below in Table 4. The total projected water use for landscaping for Estate Lot 1 is 552 gallons per day as shown in in Table 1.

Table 4 Water Use for Estate Lot 1 (48,308 Square Feet)

Hydrozone No./Planting Description	Plant Factor (PR)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF × Area	Est. Total Water Use (ETWU)
Regular Landscape Areas							
1. Low water use shrubs (70%)	0.3	drip	0.81	0.370	4,227	1,566	48,143
2. Medium water use shrubs (30%)	0.5	drip	0.81	0.617	2,657	1,640	50,436
3. Low water use shrubs (70%)	0.3	drip	0.81	0.370	3,094	1,146	35,240
4. Rear yard lawn (30%)	0.8	overhead spray	0.75	1.067	2,063	2,201	67,671
Totals					12,041	6,552	201,490
Special Landscape Areas (SLA)							
1. Low water use shrubs				1	0	0	0
2. Medium water use shrubs				1	0	0	0
4. High water use turf				1	0	0	0
Totals					0	0	0
Estimated Total Water Use (ETWU)							201,490
Maximum Allowed Water Allowance (MAWA)							203,655

d. Estate Lot 2

Estate Lot 2 is a 165,391-square-foot lot located in the northeast corner of Phase 2 of the Project immediately bordering Chino Hills State Park. The total landscape area is 41,348 square feet. The landscape palette is divided into low, medium, and high water use, and is set forth below in table 5-15-11. The total projected water use for landscaping for Estate Lot 2 is 1,833 gallons per day as shown in Table 5.

Table 5 Water Usage for Estate Lot 2 (165,391 Square Feet)

Hydrozone No./Planting Description	Plant Factor (PR)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF × Area	Est. Total Water Use (ETWU)
Regular Landscape Areas							
1. Low water use shrubs (70%)	0.3	drip	0.81	0.370	10,875	4,028	123,857
2. Medium water use shrubs (30%)	0.5	drip	0.81	0.617	12,818	7,912	243,318
3. Low water use shrubs (70%)	0.3	drip	0.81	0.370	12,942	4,793	147,404
4. Rear yard lawn (30%)	0.8	overhead spray	0.75	1.067	4,714	5,028	154,618
Totals					41,348	21,761	669,197
Special Landscape Areas (SLA)							
1. Low water use shrubs				1	0	0	0
2. Medium water use shrubs				1	0	0	0
4. High water use turf				1	0	0	0
Totals					0	0	0
Estimated Total Water Use (ETWU)							669,197
Maximum Allowed Water Allowance (MAWA)							699,344

e. Fuel Modification

The Project has 952,181 square feet of Zone B fuel modification zones that will be irrigated as necessary to preserve their character as required by Orange County Fire Authority (OCFA) regulations. The landscape palette is divided into low and medium water use, as set forth below in Table 6. The plant palette is governed by the OCFA regulations for plants and for maintenance. The total projected water use for the Zone B fuel modification translates into 86.60 gallons per day per lot as shown in Table 1.

Table 6 Water Usage for Zone B

Hydrozone No./Planting Description	Plant Factor (PR)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF × Area	Est. Total Water Use (ETWU)
Regular Landscape Areas							
1. Low water use shrubs	0.3	drip	0.81	0.370	732,447	271,276.48	7,164,954
2. Medium water use tree	0.5	drip	0.81	0.617	73,245	45,212.96	1,194,165
3. Medium water use shrubs	0.5	drip	0.81	0.617	146,489	90,425.31	2,388,313
4. High water use turf	0.8	overhead spray	0.75	1.067	0	0.00	0
Totals					952,181	406,914.75	10,747,432
Special Landscape Areas (SLA)							
1. Low water use shrubs				1	0	0	0
2. Medium water use shrubs				1	0	0	0
4. High water use turf				1	0	0	0
Totals					0	0	0
Estimated Total Water Use (ETWU)							10,747,432
Maximum Allowed Water Allowance (MAWA)							11,317,046

f. Parks

The Project has 454,482 square feet of park area that will be irrigated, including 99,493 square feet of high water use turf and the water features near the entrance to the Project. The landscape palette is divided into low, medium, and high water use, as set forth below in Table 7. The projected water use for the park areas translates into 62.87 gallons per lot per day as shown in Table 1 above.

Table 7 Water Usage for Parks

Hydrozone No./Planting Description	Plant Factor (PR)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF × Area	Est. Total Water Use (ETWU)
Regular Landscape Areas							
1. Low water use shrubs	0.3	drip	0.81	0.370	120,969	44,803.18	1,183,342
2. Medium water use tree	0.5	drip	0.81	0.617	0	0.00	0
3. Medium water use shrubs	0.5	drip	0.81	0.617	234,020	144,456.77	3,815,392
4. High water use turf	0.8	overhead spray	0.75	1.067	99,493	106,126.03	2,803,001
Totals					454,482	295,385.97	7,801,734
Special Landscape Areas (SLA)							
1. Low water use shrubs				1	0	0	0
2. Medium water use shrubs				1	0	0	0
4. High water use turf				1	0	0	0
Totals					0	0	0
Estimated Total Water Use (ETWU)							7,801,734
Maximum Allowed Water Allowance (MAWA)							8,029,510

The landscape water estimates contained in this letter will be refined once the final engineering plans and final landscape design are submitted and approved, but represent an accurate estimate of the irrigation water use based on the existing design contained in the Specific Plan.

Please contact us should you have any further questions.

Sincerely,



Michael McMillen

DEXTER WILSON ENGINEERING, INC.

DEXTER S. WILSON, P.E.
ANDREW M. OVEN, P.E.
STEPHEN M. NIELSEN, P.E.
NATALIE J. FRASCHETTI, P.E.
STEVEN J. HENDERSON, P.E.

August 7, 2018

1037-001

Yorba Linda Estates, LLC
7114 E. Stetson Dr. #350
Scottsdale, AZ 88251

Attention: Gary Lamb

Subject: Esperanza Hills Projected Water Use

As requested, this letter summarizes our findings for the projected water use of the proposed residences on the Esperanza Hills project in Yorba Linda. The following provides a comparison of projected demands based on the following three approaches:

- Baseline demands used for planning and design of water facilities for the project.
- Demands based on historical residential use for Yorba Linda Water District
- Demands based on evaluation of specific water use for Esperanza Hills.

Baseline Demands

The Northeast Area Planning Study (“NEAPS”) was prepared for the Yorba Linda Water District (YLWD) by Carrollo Engineers in March 2013 “to evaluate the capacity of existing distribution system facilities and size new infrastructure required to provide water under anticipated operational conditions for future demands.” (NEAPS, page ES-1). This study established the sizing of major water facilities for the Esperanza Hills project and provided

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the basis for an agreement between YLWD and the project that was signed on October 13, 2016. The Carrollo study based the sizing of water facilities on an assumed water use of 1,070 gallons per day (gpd) per single family residence. This factor was derived from the YLWD 2005 Water Master Plan.

Historical Use Approach

Another approach for estimating demands is to estimate the water use based on historical use within the Yorba Linda Water District.

The Municipal Water District of Orange County, which is the primary supplier to the Yorba Linda Water District for imported water, issued an Executive Report on Orange County Water Reliability Study in December 2016 “to comprehensively evaluate current and future water supply and system reliability for all of Orange County.”

Appendix B, Water Demand Forecast and Supply Gap, dated April 2016, determined that the single family residential use for the Yorba Linda Water District was 586 gallons per day per household. This provided a baseline for the water use on each residential lot.

The Yorba Linda Water District issued a publication called Water 101 that states, on page 5: “Within the Yorba Linda Water District, more than 60% of all the water used in the home is on the lawn and garden.” This would mean that 40% of the 586 gallons per day, or 234.4 gallons per day is for domestic use, while 351.6 gallons per day is for landscape use on each single family residential lot.

Project Specific Approach

Because of the size of the lots, executive orders on maximum allowed water allowances, the low water plant restrictions, and on lot fuel modifications, landscape water use for each lot was estimated by Summers & Murphy, the landscape architects for the project.

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Water use for the parks, special maintenance areas and fuel modification areas were also estimated by Summers & Murphy, based on formulas that showed total area, estimated plant density, character of use and state restrictions on maximum water allowance, and that water use analysis was used to estimate total water use for the project. A letter from Summers & Murphy is attached to this letter along with their calculations for each landscape component.

The Esperanza Hills project will achieve significant water conservation savings in relation to historical water use by implementing current state and local green building code standards for indoor water use and landscaping standards for outdoor water use. Indoor water use savings will be achieved through the use of low flow toilets, low flow showerheads, low water use dishwashers and washing machines, and other fixtures as dictated by state and local green building code requirements. Outdoor water savings will be achieved by compliance with California Model Water Efficient Landscape Ordinance (MWELo).

As set forth above, the indoor water use, excluding savings, is 234.4 gpd/unit. With the implementation of State mandated and Green Building Code water conservation measures, it is conservatively estimated that indoor water use can be reduced by 20 percent compared to historical data, but to be conservative, no reduced indoor water usage is estimated. A typical residential lot within Esperanza Hills will have an average area of 17,545 square feet with minimum building pads of 9,800 square feet. Typically, twenty five percent of a residential lot is irrigated, with most of the irrigated area on the flat building pad area. Because the lots are larger, the irrigation area was estimated based on the average lot area instead of the building pad area, so irrigated landscape area was estimated at approximately 4,300 square feet per lot. Landscaping will consist of primarily low water use landscaping with limited turf area. Summers & Murphy has completed calculations that take into account the restrictions for MWELo for each lot, which results an estimated average outdoor water usage of 191 gpd/unit. Thus, the total estimated residential water use for the 338 lots is 425.4 gpd/unit.

In addition to water use for the 338 residential lots, there are two large estate lots. Summers & Murphy have estimated the 48,308 square foot lot to require 552 gpd for landscape water and the 165,391 square foot lot to require 1,833 gpd for landscape water, for a total of 2,385 gpd. Adding the indoor water use for these units at a total of 234.4 gpd/unit results in a total water use of 2,854 gpd for both estate lots.

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Esperanza Hills Project

The project also includes 2,033,270 square feet of special maintenance area, as shown on the landscape plans for the project, which will require an estimated 66,024 gpd, or 194.19 gpd/unit.

The project also includes 952,181 square feet of Zone B fuel modification, as shown on the landscape plans for the project, which will require an estimated 29,445 gpd, or 86.60 gpd/unit. The project also includes 454,482 square feet of parks and the entry features for the parks, including the entry water features, which will require an estimated 21,375 gpd, or 62.87 gpd/lot.

The total landscape water for all uses, including on site lot use, parks, special maintenance areas and fuel modification is 69,217,723 gallons per year, or 540.22 gpd/unit.

Conclusion

In sizing regional water facilities, it is appropriate to use conservative water demand factors. In evaluating actual projected water use, new projects like Esperanza Hills are required by MWELD to comply with water conservation standards and will use significantly less landscape water than existing subdivisions or residential uses. The domestic use water will likely also decrease due to the requirements under the 2016 Green Building Code and the restrictions placed on the project by the County in the Specific Plan, although that decrease has not been applied here. The water use for planning purposes estimated by the Yorba Linda Water District is 1,070 gpd/unit, but based on the information contained herein, we believe the total actual water use will be closer to an average of 540.22 gpd/unit for the landscape portion of the project and 234.4 gpd/unit for the in-house portion of the project, for a total of 774.62 gpd/unit, or approximately 72.4% of the projected demand as contained in the NEAPS. Based on the information contained in this letter, Table 1 provides a comparison of total water use in project planning versus projected water use.

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TABLE 1 ESPERANZA HILLS WATER USE SUMMARY			
Description	Quantity	Unit Water Demand	Total Water Demand, gpd
Baseline Demand			
SF Residential	340 units	1,070 gpd/unit	363,800
Total Baseline Demand			363,800
Projected Actual Demand			
Typical SF Residential	338 units	425.4 gpd/unit	143,785
Estate SF Residential	2 units	2,854 gpd	2,854
Special Maintenance	2,033,270 sf	194.19 gpd	66,024
Fuel Modification	952,181 sf	86.6 gpd	29,445
Parks	454,483 sf	62.87 gpd	21,375
Total Projected Actual Demand			263,483

If you have any questions, please let us know.

Dexter Wilson Engineering, Inc.



Stephen M. Nielsen, P.E.

SMN:pjs

Attachment(s)



Douglas Wymore
 Yorba Linda Estates, LLC
 7114 E. Stetson #350
 Scottsdale, AZ 85251

Dear Mr. Wymore;

Summers Murphy and Partners (“SMP”) is a full service professional landscape architectural planning firm that has been in business in Orange County for over 50 years. Our portfolio includes landscape planning for residential design, master planned community design, commercial institutional design, recreational golf course, resort and hospitality design. We have won awards for multiple projects in the Yorba Linda area, including awards for the Enclave Project and Amalfi Hills. Other representative award winning residential projects in Southern California include Sanabria – Terraces at Robertson Ranch in Carlsbad, the Estates at Del Sur in San Diego, Beacon Park at Great Park in Irvine, Capri Collection at Hidden Canyon in Irvine, the Highlands at Baker Ranch in Lake Forest, the Fields at Lambert Ranch at Irvine, Lambert Ranch in Irvine, and the Tides at Crystal Cove.

We have been involved in the landscape design for Esperanza Hills since its inception in 2012, and completed a landscape water usage study earlier this year. To determine the projected water use, we determined the square feet of each irrigated area, inserting the requirements for the plant palettes or uses, categorizing the uses, and then inserting the water use factors into spreadsheet format. The projected water use was then compared to the Maximum Allowed Water Allocation (MAWA) for each component of landscape under the Model Water Efficiency Landscape Ordinance.

The landscape areas are shown on the landscape plan contained in the Specific Plan for the project and landscaped areas were calculated using Autocad. We then took into account the landscape palette for each area, the irrigation requirements for each area, and then used industry standards and our experience to determine the irrigation necessary for each component of the landscape.

The total landscape water use for all landscape purposes is estimated at 540.22 gallons per lot per day, as shown on Table 1 below. This estimate was based on determining the total irrigated area and water use for each component of landscape use as shown on the Project landscape plan, calculating the total gallons used on the Project and then determining how many gallons could be attributed to the 340 lots within the proposed Project on a per lot basis.

Table 1 Total Landscape Water Use Estimate Summary

	Days	Lot Number	Gallons per Day	Gallons per Day	
				per Lot	Gallons per Year
Special Maintenance	365	340	66,024	194.19	24,098,602
MAWA*					24,166,227
% of MAWA					100%
Parks	365	340	21,375	62.87	7,801,734
MAWA					8,029,510
% of MAWA					97%

	Days	Lot Number	Gallons per Day	Gallons per Day per Lot	Gallons per Year
Zone B (Fuel Modification)	365	340	29,445	86.60	10,747,432
MAWA					11,317,046
% of MAWA					95%
Typical Lot (est. 17,000 SF)	365	338	64,445	191	23,522,570
MAWA					24,582,226
% of MAWA					96%
Estate Lot (est. 48,308 SF)	365	1	552	552	201,490
MAWA					203,655
% of MAWA					96%
Estate Lot 2 (est. 165,391 SF)	365	1	1,833	1,833	669,197
MAWA					699,344
% of MAWA					96%
Total site gallons per year					67,041,025
Total site acre-feet per year					205.74
Total site gallons per day per lot					540.22

* Maximum allowed water allowance

Yorba Linda Water District	Water allowance, all lots	132,787,000 gallons per year (number of days × number of lots × 1,070)
		540.22 gallons per lot per day
	Total site yearly use	67,041,025 gallons
	% of allocation – landscape	50.5%

a. Residential Lot Landscape Use Estimate

Esperanza Hills has 338 typical residential lots that average 17,545 square feet with minimum building pads of 9,800 square feet. Instead of estimating irrigation use for the building pad only, the irrigation area is estimated at approximately 4,300 square feet for each lot because some of the building pads are larger, and landscaping may occur outside the building pad area in some instances. This estimate is based on approximately 20 - 25% of the total lot area being landscaped, which is a conservative estimate that assumes landscaping outside of the actual building pad area. Landscaping will consist of primarily low water use landscaping with limited turf area. Taking into account the restrictions for MAWA for each residential lot, the landscape water for a typical residential lot are set forth below in Table 2 below for each of the 338 typical lots. Average outdoor water usage for each typical lot is 191 gpd/unit, as shown on Table 1 above.

Table 2 Water Usage for a Typical 17,000-SF Lot

Hydrozone No./Planting Description	Plant Factor (PR)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF × Area	Est. Total Water Use (ETWU)
Regular Landscape Areas							
1. Low water use shrubs (70%)	0.3	drip	0.81	0.370	1,131	419	12,881
2. Medium water use shrubs (30%)	0.5	drip	0.81	0.617	1,333	823	25,304
3. Low water use shrubs (70%)	0.3	drip	0.81	0.370	1,346	498	15,329
4. Rear yard lawn (30%)	0.8	overhead spray	0.75	1.067	490	523	16,080
Totals					4,300	2,263	69,593
Special Landscape Areas (SLA)							
1. Low water use shrubs				1	0	0	0
2. Medium water use shrubs				1	0	0	0
4. High water use turf				1	0	0	0
Totals					0	0	0
Estimated Total Water Use (ETWU)							69,593
Maximum Allowed Water Allowance (MAWA)							72,728

b. Special Maintenance Area Landscape Use Estimate

The landscape plan for the Project shows 2,033,270 square feet of irrigated area within the Special Maintenance Areas. The landscape palette is divided into low, medium, and high water use, and is set forth below in Table 3. The projected water use for special maintenance areas is 194.19 gallons per lot per day as shown in Table 1.

Table 3 Water Usage for Special Maintenance Areas

Hydrozone No./Planting Description	Plant Factor (PR)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF × Area	Est. Total Water Use (ETWU)
Regular Landscape Areas							
1. Low water use shrubs	0.3	drip	0.81	0.370	1,646,949	609,981.00	\$16,110,818
2. Medium water use tree	0.5	drip	0.81	0.617	0	0.00	0
3. Medium water use shrubs	0.5	drip	0.81	0.617	243,992	150,612.59	3,977,980
4. High water use turf	0.8	overhead spray	0.75	1.067	142,329	151,817.49	4,089,804
Totals					2,033,720	912,411.09	24,098,602
Special Landscape Areas (SLA)							
1. Low water use shrubs				1	0	0	0
2. Medium water use shrubs				1	0	0	0
4. High water use turf				1	0	0	0
Totals					0	0	0
Estimated Total Water Use (ETWU)							24,098,602
Maximum Allowed Water Allowance (MAWA)							24,166,227

c. Estate Lot 1

Estate Lot 1 is a 48,308-square-foot lot located in the northwest corner of Phase 2 of the Project near the underground reservoir located at an elevation of 1,390 feet. The total landscape area is 12,041 square feet. The landscape palette is divided into low, medium, and high water use, and is set forth below in Table 4. The total projected water use for landscaping for Estate Lot 1 is 552 gallons per day as shown in in Table 1.

Table 4 Water Use for Estate Lot 1 (48,308 Square Feet)

Hydrozone No./Planting Description	Plant Factor (PR)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF × Area	Est. Total Water Use (ETWU)
Regular Landscape Areas							
1. Low water use shrubs (70%)	0.3	drip	0.81	0.370	4,227	1,566	48,143
2. Medium water use shrubs (30%)	0.5	drip	0.81	0.617	2,657	1,640	50,436
3. Low water use shrubs (70%)	0.3	drip	0.81	0.370	3,094	1,146	35,240
4. Rear yard lawn (30%)	0.8	overhead spray	0.75	1.067	2,063	2,201	67,671
Totals					12,041	6,552	201,490
Special Landscape Areas (SLA)							
1. Low water use shrubs				1	0	0	0
2. Medium water use shrubs				1	0	0	0
4. High water use turf				1	0	0	0
Totals					0	0	0
Estimated Total Water Use (ETWU)							201,490
Maximum Allowed Water Allowance (MAWA)							203,655

d. Estate Lot 2

Estate Lot 2 is a 165,391-square-foot lot located in the northeast corner of Phase 2 of the Project immediately bordering Chino Hills State Park. The total landscape area is 41,348 square feet. The landscape palette is divided into low, medium, and high water use, and is set forth below in table 5-15-11. The total projected water use for landscaping for Estate Lot 2 is 1,833 gallons per day as shown in Table 5.

Table 5 Water Usage for Estate Lot 2 (165,391 Square Feet)

Hydrozone No./Planting Description	Plant Factor (PR)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF × Area	Est. Total Water Use (ETWU)
Regular Landscape Areas							
1. Low water use shrubs (70%)	0.3	drip	0.81	0.370	10,875	4,028	123,857
2. Medium water use shrubs (30%)	0.5	drip	0.81	0.617	12,818	7,912	243,318
3. Low water use shrubs (70%)	0.3	drip	0.81	0.370	12,942	4,793	147,404
4. Rear yard lawn (30%)	0.8	overhead spray	0.75	1.067	4,714	5,028	154,618
Totals					41,348	21,761	669,197
Special Landscape Areas (SLA)							
1. Low water use shrubs				1	0	0	0
2. Medium water use shrubs				1	0	0	0
4. High water use turf				1	0	0	0
Totals					0	0	0
Estimated Total Water Use (ETWU)							669,197
Maximum Allowed Water Allowance (MAWA)							699,344

e. Fuel Modification

The Project has 952,181 square feet of Zone B fuel modification zones that will be irrigated as necessary to preserve their character as required by Orange County Fire Authority (OCFA) regulations. The landscape palette is divided into low and medium water use, as set forth below in Table 6. The plant palette is governed by the OCFA regulations for plants and for maintenance. The total projected water use for the Zone B fuel modification translates into 86.60 gallons per day per lot as shown in Table 1.

Table 6 Water Usage for Zone B

Hydrozone No./Planting Description	Plant Factor (PR)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF × Area	Est. Total Water Use (ETWU)
Regular Landscape Areas							
1. Low water use shrubs	0.3	drip	0.81	0.370	732,447	271,276.48	7,164,954
2. Medium water use tree	0.5	drip	0.81	0.617	73,245	45,212.96	1,194,165
3. Medium water use shrubs	0.5	drip	0.81	0.617	146,489	90,425.31	2,388,313
4. High water use turf	0.8	overhead spray	0.75	1.067	0	0.00	0
Totals					952,181	406,914.75	10,747,432
Special Landscape Areas (SLA)							
1. Low water use shrubs				1	0	0	0
2. Medium water use shrubs				1	0	0	0
4. High water use turf				1	0	0	0
Totals					0	0	0
Estimated Total Water Use (ETWU)							10,747,432
Maximum Allowed Water Allowance (MAWA)							11,317,046

f. Parks

The Project has 454,482 square feet of park area that will be irrigated, including 99,493 square feet of high water use turf and the water features near the entrance to the Project. The landscape palette is divided into low, medium, and high water use, as set forth below in Table 7. The projected water use for the park areas translates into 62.87 gallons per lot per day as shown in Table 1 above.

Table 7 Water Usage for Parks

Hydrozone No./Planting Description	Plant Factor (PR)	Irrigation Method	Irrigation Efficiency (IE)	ETAF (PF/IE)	Landscape Area (sq. ft.)	ETAF × Area	Est. Total Water Use (ETWU)
Regular Landscape Areas							
1. Low water use shrubs	0.3	drip	0.81	0.370	120,969	44,803.18	1,183,342
2. Medium water use tree	0.5	drip	0.81	0.617	0	0.00	0
3. Medium water use shrubs	0.5	drip	0.81	0.617	234,020	144,456.77	3,815,392
4. High water use turf	0.8	overhead spray	0.75	1.067	99,493	106,126.03	2,803,001
Totals					454,482	295,385.97	7,801,734
Special Landscape Areas (SLA)							
1. Low water use shrubs				1	0	0	0
2. Medium water use shrubs				1	0	0	0
4. High water use turf				1	0	0	0
Totals					0	0	0
Estimated Total Water Use (ETWU)							7,801,734
Maximum Allowed Water Allowance (MAWA)							8,029,510

The landscape water estimates contained in this letter will be refined once the final engineering plans and final landscape design are submitted and approved, but represent an accurate estimate of the irrigation water use based on the existing design contained in the Specific Plan.

Please contact us should you have any further questions.

Sincerely,



Michael McMillen



(<https://www.yorbalinda.gov/employment/governmentjobs.com/ylwd/default.asp?tabid=10>)
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Water 101

We've put together some interesting facts and information about water to help you understand how water is measured, where your water comes from, what's in the water, and much more!



- [Water Equivalents](#)
- [Where Your Water Comes From](#)
- [Water Quality](#)
- [Conservation](#)

Here are some informative publications about water:

-  [Water Footprints \(/images/community/water-101/Conserve_WaterFootprint.pdf\)](/images/community/water-101/Conserve_WaterFootprint.pdf)
-  [How Much Water Do You Use? \(/images/community/water-101/Kids-WaterUse.pdf\)](/images/community/water-101/Kids-WaterUse.pdf)
-  [Pharmaceuticals in Drinking Water \(/images/community/water-101/WQ-PharmaceuticalsWater.pdf\)](/images/community/water-101/WQ-PharmaceuticalsWater.pdf)

Water Equivalents

- 1 cubic foot = 7.48 gallons
- 100 cubic feet = 1ccf (standard billing unit) = 748 gallons
- 1 acre-foot = 43,560 cubic feet = 325,900 gallons

At Yorba Linda Water District's rate of \$2.70 per ccf, \$3.79 (about the price of 1-gallon of milk) will buy you 1,550 gallons of water.

Where Your Water Comes From

Approximately 45% of Yorba Linda Water District's drinking water is purchased from the Metropolitan Water District of Southern California (MWD). This water, known as "imported water", comes from the Colorado River via the Colorado River Aqueduct and from Northern California via the State Water Project. The remaining 55% of our water supply comes from local wells that extract high quality water from the Orange County Groundwater Basin.



Colorado River Project

The Colorado River Aqueduct brings water 240 miles through deserts and mountains to its main reservoir, Lake Mathews, in Riverside County where it is distributed to multiple local communities. Originally built to ensure a steady supply of water to Los Angeles, it now serves southern California communities from Ventura County to San Diego County. The construction of the Colorado River Aqueduct is widely credited as being a principal reason for the industrial growth of the four counties during World War II and the following decades. In 1992, the Aqueduct was recognized by the American Society of Civil Engineers (ASCE) as one of the seven "wonders" of the American engineering world.

State Water Project

The State Water Project, also known as the California Aqueduct, transports water 600 miles from Northern California and the Sacramento-San Joaquin Delta. This aqueduct system is owned and operated by the State of California and is the longest aqueduct in the world. It is comprised of 23 dams and reservoirs, 22 pumping stations, 473 miles of canals, 175 miles of pipeline and 20 miles of tunnels.

Orange County Groundwater Basin

The District's groundwater wells tap an underground aquifer that underlies most of northern Orange County. The aquifer is carefully managed by the Orange County Water District, and is replenished by water from the Santa Ana River, local rainfall, and surplus water purchased from imported sources.

Groundwater Replenishment System

The Orange County Water District (OCWD) GWR System is a purification process that begins with up to one-third of treated wastewater that undergoes one of the most advanced water purification processes in the world using microfiltration, reverse osmosis and ultraviolet light with hydrogen peroxide. The near-distilled quality water is then pumped to percolation ponds that replenishes Orange County Water District's groundwater basin.

Water Quality

Providing our customers with safe, high quality drinking water is a main priority of the Yorba Linda Water District. All water provided by the Yorba Linda Water District is safe and meets all quality standards set by both the State and Federal government and in accordance with the Safe Water Drinking Act of 1996, the District continues to monitor more than 100 compounds in your water supply. Additional



information can be found in the latest version of the Consumer Confidence Report. Some local water agencies utilize non-potable water for landscaping needs. As the Yorba Linda Water District only has one set of “pipes”, all water provided by the District is of “drinking water” quality.

Fluoride

Yorba Linda Water District does not add fluoride to your water. Naturally occurring fluoride is present in the water, but not at a level that provides dental health benefits. In 1995, the California Legislature passed a bill mandating that all large water agencies fluoridate their supplies, but only if the State provided the agencies to money to do so.

Metropolitan Water District of Southern California began fluoridation of southern California’s drinking water supplies in November of 2007. Due to MWD’s decision and the District’s dual sources of water, some Yorba Linda Water District customers will get fluoridated water, some will get non-fluoridated water and some will get a blend of fluoridated and non-fluoridated water.

Conservation

Utilizing water wisely not only saves you money, it also saves energy and prevents urban runoff that causes ocean pollution. In California, 40% of all the energy used goes to treating, heating and moving water around the state. “The less water used, the more energy saved.” To that end, the best place to save water is on landscaping.



Within the Yorba Linda Water District, more than 60% of all the water used in the home is on the lawn and garden. When too much water is applied or over-sprays onto the streets and sidewalks, it flows into the street and becomes “urban runoff”-

carrying fertilizers, pesticides, oil and trash into storm drains, which ultimately empty into the ocean. The remaining 40% of water used in the typical residential home is used for washing dishes, laundry, and daily personal care, with the largest indoor user being the toilet.

Additional information on how to conserve water and available rebates for water efficient devices can be found on the District's website (www.ylwd.com (<http://www.ylwd.com/>)) under the "[Conservation \(/conservation/index-cons.html\)](/conservation/index-cons.html)" link or the Customer Service desk at District Headquarters, located at 1717 E. Miraloma Ave, Placentia.

How much water do you "need"?

A family of four needs approximately 7,800 gallons of water per month for inside-the-home use only. This equates to about 65 gallons of water per person, per day. To check how much water your household typically uses, check your bill or www.H2Oconserve.org (<http://www.h2oconserve.org/>) to determine your "water footprint".

Navigate

[Resources \(/community/resources\)](/community/resources)

[Education \(/community/education\)](/community/education)

[Bottled Water \(/community/bottled-water\)](/community/bottled-water)

[Bottled Water Label Contest \(/community/bottled-water-label-contest\)](/community/bottled-water-label-contest)

[Water Use Efficiency \(/community/water-use-efficiency\)](/community/water-use-efficiency)

[Conservation Ordinance \(/community/conservation-ordinance\)](/community/conservation-ordinance)

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[Facilities Tour \(/community/facilities-tour\)](/community/facilities-tour)

[Ad Hoc Advisory Committee \(/community/ad-hoc-advisory-committee\)](/community/ad-hoc-advisory-committee)

Tweets by @YLWD

Yorba Linda WD

@YLWD

Help Mayor Hernandez win this challenge, take the pledge today!

1h

Yorba Linda WD

@YLWD

.@YLWD office will be closed on 3/29/2018 btwn the hours of 11a- 1:30p. We'll resume business @ 1:30p.

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WHO WE ARE

Yorba Linda Water District is a public agency serving residents of Yorba Linda and portions of Placentia, Brea, Anaheim and areas of unincorporated Orange County.

Yorba Linda Water District is totally independent of all city and county governments. None of the revenue obtained by Yorba Linda Water District is used to subsidize non-water related activities or the activities of any other agency.

CONTACT DETAILS



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EMERGENCY?


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 [_ \(https://mail.ylwd.com/\)](https://mail.ylwd.com/)

 [_ \(https://www.ylwd.com/component/users/\)](https://www.ylwd.com/component/users/)

Table 1. Water Use Factors from Survey of Water Agencies in Orange County (FY 2013-14)

	SF Res		MF Res		Com/Instit.		Indust.		Non Revenue	
	Units ¹	Unit Use ²	Units	Unit Use	Units	Unit Use	Units	Unit Use	total acc	%
Basin Area										
ANAHEIM	50,030	441	58,618	193	169,902	90	19,260	160	63,004	7%
BUENA PARK	16,455	346	8,600	224	31,566	137	4,837	39	19,004	11%
FOUNTAIN VALLEY	12,713	336	6,964	141	30,282	124	2,093	134	17,149	13%
FULLERTON	26,274	454	22,575	176	60,839	115	6,251	398	31,557	5%
GARDEN GROVE	31,400	422	17,580	295	48,394	134	7,221	163		
GSWC	38,038	383	17,218	215	58,901	122	6,857	68	No data	
HUNTINGTON BEACH	44,605	297	35,964	154	69,266	99	10,355	58	52,855	6%
IRVINE RANCH WATER DISTRICT	39,182	444	80,854	196	263,393	80	39,484	207	85,508	9%
MESA WATER DISTRICT	16,585	320	23,173	215	80,999	97	4,832	87	No data	
NEWPORT BEACH	19,455	329	15,517	177	59,754	86			26,517	5%
ORANGE	28,545	470	15,483	246	96,606	97	No data		35,363	9%
SANTA ANA	35,547	461	42,027	288	151,008	96			No data	
TUSTIN	11,788	505	9,435	253	25,265	79	1,293	92	14,178	3%
WESTMINSTER	17,648	318	10,973	215	24,148	109	976	84	20,379	5%
YORBA LINDA WATER DISTRICT	22,046	586	3,746	249	22,164	120	2,745	230	No data	
Weighted Average		411		211		97		167		7.3%
South County										
IRVINE RANCH WATER DISTRICT	16,581	444	12,864	196	32,554	80			22,730	9%
MOULTON NIGUEL WATER DISTRICT	47,673	345	17,077	189	70,067	156	Included in		55,149	10%
SAN CLEMENTE	12,047	361	9,045	186	22,921	119	commerical/		No data	
SAN JUAN CAPISTRANO	7,176	502	6,146	206	16,483	158	institutional		11,277	3%
SANTA MARGARITA WATER DISTRICT	36,022	436	19,885	268	37,241	254	category		54,129	2%
Weighted Average		397		216		158				65%
Brea/La Habra										
BREA	9,094	425	6,898	160	42,654	93	5,931	140	No data	
LA HABRA	11,995	436	8,051	177	17,331	90	680	135	13,674	6%
Weighted Average		431.06		169.31		92.13		139.49		6%

¹Units represent:
 SF Res = SF accounts or SF housing (CDR) if SF account data looks questionable.
 MF Res = total housing (CDR) minus SF units.
 Com/Instit = total employment (CDR) minus industrial employment (CDR).
 Industrial = industrial employment (CDR).

²Unit Use represents billed water consumption (gallons/day) divided by units.

To understand the historical variation in water use and to isolate the impacts that weather and future climate has on water demand, a statistical model of monthly water production was developed. The explanatory variables used for this statistical model included population, temperature, precipitation, unemployment rate, presence of mandatory drought restrictions on water use, and a cumulative measure of passive and active conservation. Figure 4 presents the results of the statistical model for the three areas and the total county. All models had relatively high correlations and good significance in explanatory variables. Figure 5 shows how well the statistical model performs using the OC Basin model as an example. In this figure, the solid blue line represents actual per capita water use for the Basin area, while the dashed black line represents what the statistical model predicts per capita water use to be based on the explanatory variables.

Using the statistical model, each explanatory variable (e.g., weather) can be isolated to determine the impact it has on water use. Figure 6 presents the impacts on water use that key explanatory variables have in Orange County.

Attachment G
Revision to Section 5.7, Hazards and Hazardous Materials,
Second Revised FEIR on Community Evacuation Plan

1. Court of Appeal's Decision in Protect Our Homes and Hills v County of Orange

The Court of Appeal issued an opinion in *Protect Our Homes and Hills v. County of Orange*, Appeal No. G054185, in which it examined the fire hazards analysis and the Community Evacuation Plan (CEP) for the Project, as required by Mitigation Measure Hazard Haz-6 ("MM Haz-6"). While the Court of Appeal found that the fire hazards analysis was adequate, it found that MM Haz-6, which addressed the required contents of the CEP for the Project, lacked any performance standards to guide the Orange County Fire Authority's (OCFA) approval process for the CEP, and for that reason constituted improper deferral of mitigation.

The Court of Appeal approved the fire hazards analysis, stating:

Protect criticizes the County's analysis, asserting it should have included, but failed to include, data and analysis concerning: (1) how much the spread rate of a fire would be reduced by having the Project on the site versus leaving the site in its natural condition; (2) whether there would be adequate evacuation time if a fire originated closer to the Project site than in the 2008 fire; (3) how residents will be notified of the need for offsite evacuation or onsite relocation; and (4) where residents will take shelter if onsite relocation is deemed advisable in a given situation.

Aside from the fact that some of these items were, in fact, discussed in the FEIR, CEQA does not require a lead agency to discuss and evaluate every theoretical scenario, nor does it require an exhaustive impact assessment. (CEQA Guidelines, § 15151; *Association of Irrigated Residents v. County of Madera* (2003) 107 Cal.App.4th 1383, 1397 (*Irrigated Residents*).) What it does require is analysis of a sufficient degree, supported by substantial evidence, to provide decisionmakers with the information needed to make an intelligent decision concerning a project's environmental impacts. (CEQA Guidelines, § 15151; *Irrigated Residents*, at p. 1398; *Dry Creek Citizens Coalition v. County of Tulare* (1999) 70 Cal.App.4th 20, 26.) The FEIR's fire hazard analysis did just that. [*Slip Opinion, pages 14 – 15*]

As noted above, however, the Court of Appeal determined that MM Haz-6 violated CEQA insofar as the requirements for the CEP lacked performance standards that would guide OCFA's approval of the CEP. The Court reasoned as follows:

The problem with MMH6 is there are no performance standards to guide OCFA's approval process. For example, while "emergency evacuation plan details" must be included in the CEP, nothing in the measure guides the minimum standards for those details, nor is there mention of any statutes or regulations that do so. The fire protection plan appended to the FEIR, which is to form "the basis of" the CEP, does not fill the gap. Though titled a "plan", it is

truly just an analysis that provides recommendations for minimizing impacts. The FEIR relied on those recommendations in concluding fire hazard impacts would be less than significant, but there is no requirement each of them actually be included in the CEP.

Under these circumstances, deferred mitigation is improper. (citations omitted) Therefore, the fire hazard mitigation measures must be revised to eliminate the improper deferral. [*Slip Opinion, pages 16 – 17*]

In response to the Court's decision on this issue, the County has determined that, rather than modify MM Haz-6 to include all of the relevant performance standards, a more comprehensive approach would be to delete that particular mitigation measure and to create in its place several separate new mitigation measures (MM Haz-15 through MM Haz-31) that set forth the specific performance standards that must be incorporated into the CEP for the Project. This approach exceeds what the Court of Appeal mandated by providing an even more thorough and detailed approach for ensuring the effectiveness of the CEP. The new measures are listed below, after a general explanation regarding what they contain. Rather than simply provide performance standards to guide the OCFA in its approval of the CEP, many of these measures require individual homeowners and the homeowners' association (HOA) for the Project to implement concrete obligations intended to reduce fire risk to residents as well as to facilitate their safe and efficient evacuation from the Project site when necessary due to fire conditions.

The CEP will require that the Esperanza Hills Project (Project) be built in compliance with applicable regulations of the Orange County Fire Authority ("OCFA") for Fire Master Plans for Commercial and Residential Development, Guideline B-09¹ ("Guideline B-09") and the Orange County Fire Authority, Fire Safe Development in State Responsibility Areas, Guideline B-09a², both revised on January 1, 2017, to provide fire protection to the Project and meet minimum evacuation requirements. Project Design Features 18 through 29 incorporated into the Project and listed in Chapter 4 – Project Description, Section 4.4 of the Revised Final EIR require that the Project be designed in accordance with Guideline B-09 and B-09a, as applicable, which outlines the requirements for fuel modification, fire apparatus access roads, access gates, and the requirement for an approved Fire Master Plan prior to commencement of the construction of any residence. The CEP will also contain requirements for the required maintenance of fuel modification zones (FMZs), fire apparatus access roads, access gates for evacuation or fire apparatus access, and other requirements contained in the regulations of OCFA.

In addition, the CEP will require that the HOA for the Project adopt the following during any evacuation emergencies: 1) Ready! Set! Go! safety program outlined on the

1 <https://www.ocfa.org/Uploads/CommunityRiskReduction/OCFA%20Guide-B09-Fire%20Master%20Plan%20For%20Commercial%20and%20Residential.pdf>

2 <https://www.ocfa.org/Uploads/CommunityRiskReduction/OCFA%20Guide-B09a-Fire%20Safe%20Development%20in%20State%20Responsibility%20Areas.pdf>

OCFA website,³ 2) provide for annual education of residents regarding wildfires, 3) distribute educational materials approved by OCFA to any new residents, and 4) facilitate communication between residents of the Project, the OCFA, the Orange County Sheriff's Department ("OCSD"), and the City of Yorba Linda. The Ready! Set! Go! safety program is incorporated into Mitigation Measure MM Haz-16. The CEP is structured to work in conjunction with the County's Ready!, Set!, Go! and OC Alert programs once the OCFA has determined a risk is imminent and has issued an evacuation order.

The Ready!, Set!, Go! safety program educates the public to be Ready! for wildfire by pre-planning, being Set! through ongoing preparedness training and implementing the Go! by immediately responding to OCFA's and OCSD's evacuation orders. OC Alert provides residents with phone calls, text messages, or both to directly inform them of emergency evacuation needs.

The CEP requires that the Project will be designed to include emergency vehicle staging areas in three locations, allowing five fire trucks in each of two staging areas and the third staging area for one engine with access to fire hydrants. Fire fighter access will be a key priority and the array of dedicated fire apparatus access roads in the Proposed Project refer to Exhibit 5-78 – Emergency Ingress/Egress Plan, Option 1 and Exhibit 5-79 – Emergency Ingress/Egress Plan, Option 2, which depict the Proposed Project ingress in the event of a wildfire. Additional discussion on fire apparatus access roads and staging is located in Chapter 5, Section 5.12 – Public Services.

In addition, the OCSD developed a plan for the City of Yorba Linda and the adjacent area that includes the Project site for evacuation procedures that will include the Alert OC Reverse 911 messaging system, a helicopter public address system alert, public address announcements via patrol cars, door-to-door alerts, and a traffic control plan to move traffic off Yorba Linda Boulevard with restricted entry to the Project site and adjacent area by only emergency vehicles. The CEP will require that HOA implement any evacuation instructions received from OCSD or OCFA.

2. New Mitigation Measures

MM Haz-6, which required compliance with the Esperanza Hills Fire Protection and Emergency Evacuation Plan (FPEP), has been deleted and replaced with MMs Haz-15 through Haz-31. The following additional mitigation measures will ensure Project compliance with the recommendations in the FPEP.

MM Haz 15 – Prior to issuance of grading permits, Developer shall ensure that the following implementation measures and conditions will be provided to ensure fire protection during construction activities to the satisfaction of the Manager of Planning, OC Development Services:

³ Orange County Fire Authority, Ready! Set! Go! Program link: <https://www.ocfa.org/rsg>

1. The Applicant/Owner shall contact OCFA during site grubbing to provide for fire protection equipment and procedures as required by OCFA.
2. Ongoing restrictions on Hot Works (2016 California Fire Code, Section 3501.2) shall apply on the Project site. The Applicant/Owner shall document all precautions and safety procedures will be in place, including required permits, before Hot Work is conducted. In addition, Hot Work conducted during Red Flag Warning periods will be limited to within an approved structure with Hot Work occurring outside, unless a 50-foot radius area clear of combustibles is provided and a water truck is available onsite during the duration of the Hot Work.
3. Between May 1 and November 30 of each year, and when Red Flag Watches or Warnings have been declared, The Applicant/Owner shall document a water truck shall be on-site during all construction activities with the potential to extinguish fires, including but not limited to welding, pipe cutting, grinding, grubbing, and rough grading.
4. The Applicant/Owner shall notify all contractors in writing of the restrictions contained in this mitigation measure and shall provide written confirmation of receipt of these restrictions to the County. Written notification shall be provided three (3) days in advance of construction activities.

The following Mitigation Measures include mandatory obligations of the HOA that shall be included in the Codes, Covenants and Restrictions (CCR's) established for the community:

MM Haz-16 – Prior to issuance of any residential building permit, the Applicant/Owner shall demonstrate to the satisfaction of the Manager of Planning, OC Development Services that the CCR's for the Project require the Homeowners Association (HOA) to participate in the Ready! Set! Go! safety program recommended by the OCFA. The HOA shall have the following responsibilities under the Ready!, Set!, Go! safety program:

1. The HOA shall distribute or otherwise make available annually on-going education materials to all residents regarding fire safety, and evacuation that OCFA will review and approve prior to printing and distribution, relating to landscape/fuel modification, private property maintenance, Ready!, Set!, Go! preparations, and personal evacuation plans.
2. The HOA shall distribute materials showing emergency evacuation routes as set forth on Exhibit 5-78 – Emergency Ingress/Egress Plan, Option 1 and Exhibit 5-79 – Emergency Ingress/Egress Plan, Option 2 in the of the Revised Final EIR.
3. The HOA shall maintain contact records for each resident and shall require each resident to join the reverse 9-1-1 or Alert OC! Program to ensure that each resident has notification of any fire warnings or evacuation notices issued by OCSD, OCFA, or any other joint firefighting authorities.
4. The HOA shall annually provide educational materials and cover fire safety and evacuation at each annual meeting of residents, and shall annually update educational materials as the Ready!, Set!, Go! program is updated on the OCFA website.

5. As each new resident purchases or rents/leases a house in the subdivision, the HOA shall contact the new resident and provide them with the materials for the Ready!, Set!, Go! Program.
6. The OCFA and OCSD shall be notified of each annual HOA meeting and invited to attend to either make presentations or be available to answer questions relating to emergency procedures or the Ready!, Set!, Go! program. Any charge for services for either OCFA or OCSD shall be paid for by the HOA.
7. The HOA shall provide both the OCSD and the OCFA with an emergency contact number so that the HOA can be notified of any evacuation instructions. In the event that the HOA receives notification of any evacuation instructions from either the OCSD or OCFA, it shall notify each resident via phone calls to the designated contact number for each resident, and shall also text each resident if the resident provides a cell phone number. HOA notification shall be provided to residents within two hours of receipt of the OCSD and OCFA notifications, whichever should be received first.
8. The HOA shall also open any gates on the Project site to allow access within the property on alternate access routes or onto the fire apparatus access road extending to Stonehaven through the Cielo Vista project if requested by either OCFA or OCSD.
9. In the event that the City of Yorba Linda, OCSD or OCFA make off-site presentations regarding emergency preparedness, the HOA shall notify each resident of the time and location of each presentation.

MM Haz-17 – Prior to the Homeowner Association (HOA) Maintenance Acceptance from the Developer on each phase of the completed infrastructure, the HOA manager shall meet with a representative from OCFA, the Landscape Design Professional, the installing landscape contractor, an HOA management representative, and an HOA landscape maintenance contractor for the purpose of reviewing the finished infrastructure improvements to ensure that all fuel modification zones (FMZs) are built to specification, and that all infrastructure improvements comply with the Fire Master Plan approved by OCFA and incorporate Chapter 49 – Requirements for Wildland-Urban Interface Fire Areas, Sections 4905 – 4907 of the 2016 California Fire Code as performance standards. Section 4905 provides standards for wildfire protection building construction, Section 4906 provides standards for hazardous vegetation and fuel management, and Section 4907 provides standards for defensible space. The HOA shall be provided with instructions regarding the maintenance of the FMZs to the satisfaction of the Manager of Planning, OC Development Services.

The following Mitigation Measures, incorporated into the FEIR, provide requirements related to the Project Specific Plan, Fire Master Plan, Community Evacuation Plan and Fuel Modification Plans.

MM Haz-18 – Prior to precise grading, the Applicant/Owner shall provide evacuation plans for the primary access and emergency access roadways, showing the road widths, emergency egress and emergency evacuation routes, fire hydrants, road width requirements, and OCFA access points for firefighting access outside the boundaries of the developed portions of the subdivision, including into CHSP to the east as detailed in the Specific Plan for approval by the OCFA as required in

OCFA Guidelines B-09 and B-09a, as applicable, to the satisfaction of the Manager of Planning, OC Development Services .

MM Haz-19 – Prior to issuance of any grading permits by the County of Orange, the Applicant/Owner shall obtain written approval from the OCFA of the evacuation plans set forth the Specific Plan and Hazards section of the FEIR and conceptual approval of the evacuation plans to the satisfaction of the Manager of Planning, OC Development Services.

MM Haz-20 – Prior to the issuance of any precise grading permits, the Applicant/Owner shall obtain approval from OCFA for a Fire Master Plan in accordance with OCFA Guideline B-09 Plan Submittal Requirement 1, and Guideline B-09a, as applicable, which shall detail the fire access roadway designs, fire hydrant designs, road designs, fire hydrant locations, turning radius for a cul-de-sac, gate and locking device installation to the satisfaction of the Manager of Planning, OC Development Services.

MM Haz-21 – Prior to issuance of any building permit for a residence, the Applicant/Owner shall obtain approval from OCFA that any road that might be used for emergency access shall comply with the Orange County Fire Code and OCFA standards as set forth in OCFA Guideline B-09 Plan Submittal Section 2 and Guideline B-09a, as applicable. Such roads and features shall be maintained by the HOA and inspected bi-annually by a third-party inspector approved by OCFA at the expense of the HOA. The HOA shall send a written report containing the results of the inspection to OCFA, shall correct any deficiencies within ten (10) days of notice of the deficiency, and shall send notice of the repair to the OCFA. The written documentation shall be provided to the satisfaction of the Manager of Planning, OC Development Services.

MM Haz-22 – Prior to issuance of any building permit for a residence, the Applicant/Owner shall obtain written approval from OCFA that any road that might be used for emergency access is subject to signage and regulations as required by the Orange County Fire Code and OCFA standards as set forth in OCFA Guideline B Plan Submittal Section 3, and Guideline B-09a, as applicable. Such roads and features shall be maintained by the HOA and inspected bi-annually by a third-party inspector approved by OCFA at the expense of the HOA. The HOA shall send a written report containing the results of the inspection to OCFA, shall correct any deficiencies within ten (10) days of notice of the deficiency, and shall send notice of the repair to OCFA. The written approval shall be provided to the satisfaction of the Manager of Planning, OC Development Services.

MM Haz-23 – Prior to issuance of any building permit for a residence, the Applicant/Owner shall obtain written confirmation from OCFA that any proposed gates or barriers that might be used for emergency access comply with the Orange County Fire Code and OCFA standards as set forth in OCFA Guideline B-09 Plan Submittal Section 3, and Guideline B-09a, as applicable. Such proposed gates and barriers shall be maintained by the HOA and inspected bi-annually by a third-party inspector approved by OCFA at the expense of the HOA. The HOA shall send a written report containing the results of the inspection to OCFA, shall correct any deficiencies within ten (10) days of notice of the deficiency, and shall send notice of the repair to OCFA. The written

confirmation shall be provided to the satisfaction of the Manager of Planning, OC Development Services.

MM Haz-24 – Prior to the issuance of a precise grading permit by the County of Orange, the Applicant/Owner shall obtain written approval from the OCFA for all fuel modification plans for the community and all evacuation roads pursuant to the regulations of OCFA as set forth in Guidelines B-09 and B-09a, as applicable and other regulations. The FEIR and Specific Plan shall contain a fuel modification exhibit showing the minimum standards for fuel modification as conceptually approved by OCFA prior to approval by the Board of Supervisors. Fuel Modification zones (FMZs) shall be consistent with OCFA guidelines for Zone A, Zone B, Zone C and Zone D size, irrigation and plant types. The written approval shall be provided to the satisfaction of the Manager of Planning, OC Development Services.

MM Haz-25 – Prior to issuance of any building permits for any structures on site, the Applicant/Owner shall ensure that the final fuel modification plans shall be submitted to OCFA for review and approval as part of the Fire Master Plan to be approved by OCFA as part of OCFA Guidelines B-09 and B-09a, as applicable. The fuel modification plans shall be provided to the satisfaction of the Manager of Planning, OC Development Services.

MM Haz-26 – Prior to Rough Grading Permit Issuance, the Developer/Builder shall obtain from OCFA an approved/stamped “Conceptual or Precise Fuel Modification Plan” and be provided to the satisfaction of the Manager of Planning, OC Development Services.

MM Haz-27 – Prior to Precise Grading Permit Issuance, the Developer/Builder shall have an approved/stamped Precise Fuel Modification Plan approved by the OCFA, with an applicable note stating that maintenance language will be provided in CCR’s and reviewed prior to issuance of certificate of occupancy to the satisfaction of the Manager of Planning, OC Development Services.

MM Haz-28 – Prior to delivery of construction materials for any residence, the Developer/Builder shall implement those portions of the approved fuel modification plan determined to be necessary by the OCFA prior to the introduction of any combustible materials (i.e., lumber drop) into the Project site and shall provide written documentation to the satisfaction of the Manager of Planning, OC Development Services.

MM Haz-29 – Prior to precise grading permit, the Project Applicant/Owner shall provide written documentation, to facilitate firefighting and safe evacuation, the Project design includes fire access ways through the residential planning areas to provide access to the open space areas and Chino Hills State Park in accordance with OCFA standards for a Very High Fire Hazard Severity Zone (“VHFHSZ”) and approved by OCFA. The OCFA approval shall be provided to the satisfaction of the Manager of Planning, OC Development Services.

MM Haz-30 – Prior to issuance of a precise grading permit, the Applicant/Owner shall obtain from OCFA written confirmation that the street plans provide that driveways, roads, and additional on-site roadways with fire engine turnarounds are designed to provide access to within 150 feet of all sides of every building.

The OCFA approval shall be provided to the satisfaction of the Manager of Planning, OC Development Services.

MM Haz -31 – Prior to issuance of any rough grading permit, the Applicant/Owner shall provide access routes and other mitigation features as required by OCFA under Guideline B-09 Plan Submittal Section 10, and Guideline B-09a, as applicable. The access routes and other measures shall be provided to the satisfaction of the Manager of Planning, OC Development Services.

3. Level of Significance After Mitigation

Implementation of the Proposed Project will not result in a significant hazard to the public or the environment through the transport, use, or disposal of hazardous materials because the 340-residence subdivision will engage in the normal use and storage of household materials, and no industrial or commercial uses are included in the Project. Therefore, the impact is less than significant concerning this topic.

The Proposed Project has the potential for accidental release of combustible gas/methane from continued operation of on-site oil wells. Mitigation Measures Haz-1, Haz-2, and Haz-3 have been incorporated into the Project. Mitigation includes a Combustible Gas/Methane Assessment Study to assess release of combustible gas/methane, implementation of a Methane Control Plan if a measurable quantity of methane is detected, and preparation of a remedial action plan (RAP) prior to any oil well closure. With implementation of these mitigation measures, Project impacts related to accidental release of hazardous materials into the environment are less than significant.

The Proposed Project will not produce hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter of an existing school. The Proposed Project involves the construction of single-family residential homes, and no hazardous or acutely hazardous materials, substances, or waste will be emitted by the normal operation of the Project. Oil wells within the Project site have the potential to emit hazardous emissions. However, no existing or proposed schools are located within one-quarter mile of the Project site and, therefore, the Project impact is less than significant.

The Project is not located on a site that is included on a list of hazardous materials sites compiled pursuant to *California Government Code* §65962.5; therefore, the Project impact is less than significant.

The Proposed Project is not located within an airport land use plan or within two miles of a public airport or public airport use that would result in a safety hazard for people residing or working in the Proposed Project. Therefore, potential impacts associated with airport hazards is less than significant.

The Proposed Project is not located in the vicinity of a private airport that would result in a safety hazard for people residing or working in the Proposed Project. Therefore, the Project impact from private airport hazard is less than significant.

The Project will not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan. Mitigation Measures Haz-5 and Haz-15 through Haz-31 have been incorporated into the Project requiring preparation and implementation of a Community Evacuation Plan. Provisions in the CC&R's will require compliance with the OCFA Ready!, Set!, Go! Program for orderly evacuation notification and procedures as required by OCFA and OCSD, participation by residents in the OC Alert Program and require the HOA to conduct annual training of the Project residents regarding evacuation procedures.

The Project has a potential to expose people or structures to a significant risk of loss, injury, or death involving wildfire given the climate, topography, and wildland-urban interface. The Project will greatly reduce the potential of a wildfire to break out on-site because the Project is subject to the 2016 California Building Code and the 2016 California Fire Code, which require strict regulations for ember- and ignition-resistant structure construction. The FMZs work in tandem with the other components of the fire protection system, including interior automatic fire sprinklers (with the added attic heads in each structure), firefighting staging area, emergency access, and water flow and supply, to provide protection for the site's structures. Implementation of the Proposed Project will reduce areas of native vegetation on the Project site resulting in less burnable fuels, which reduces Project impacts of wildfire starting on the site.

Mitigation Measures Haz-7 through Haz-14 have been incorporated into the Project to implement OCFA FMZs that surround the Project, to require fuel modification easements from adjacent property owners and fuel modification area deed restrictions, to require educational material on fire-safe vegetation management to homeowners, to require Project CC&Rs provisions and notice on vegetation management and funding of annual Fire Safety inspection of FMZs, to require adequate fire hydrants and water capabilities, and to require Project entry gates that meet OCFA standards for entrance during emergency. With implementation of Project design features and mitigation measures, the likelihood of exposing people or structures to fire hazards will be reduced to a level of less than significant.

New Mitigation Measures Haz-15 through Haz-19 are included to ensure compliance with the mitigation recommended in the Project's Fire Protection and Emergency Evacuation Plan. Mitigation measure Haz-15 requires that the CEP include components ranging from compliance with OCFA/OCSD directions, identification of potential triggers for OCFA evacuation orders and coordination between the community, OCFA, OCSD and the Incident Command System.

Mitigation Measure Haz-16 requires compliance with and identifies off-site evacuation strategies as directed by OCFA and OCSD.

Mitigation Measure Haz-18 requires compliance with and identifies contingency on-site relocation strategies as directed by OCFA and OCSD.

Mitigation Measure Haz-19 requires implementation measures and conditions be provided as part of the development plan for the Project. These measures and conditions include a Construction Fire Prevention Plan, the use of ignition resistant construction materials, provision of OCFA-recommended dimensions for FMZs, and provision of adequately sized fire apparatus access roads. Mitigation Measures Haz-15 through Haz-19 will provide additional fire protection to the Project site's location in a VHFHSZ will not result in significant impacts due to wildfires by incorporating a construction phase mitigation measure, mitigation measures obligating the HOA to perform evacuation procedures notifications and documenting consistency with the Fire Master Plan, and mitigation measures documenting emergency evacuation plans..

Mitigation Measures Haz-15 through Haz-31 include obligations of the Homeowners Association Codes, Covenants and Restrictions, and requirements related to the Specific Plan, Fire Master Plan, Community Evacuation Plan, and Fuel Modification Plans. These Mitigation Measures further ensure that all proposed obligations and requirements are identified and carried out by the responsible parties to reduce potential impacts.

The Proposed Project also includes a mitigation measure, Mitigation Measure PS-1 in Chapter 5, Section 5.12 – Public Services, that requires a Secured Fire Protection Agreement with the OCFA that will specify the Project Applicant's pro-rata fair share funding of capital improvements necessary to establish adequate fire protection facilities and equipment and/or personnel for the Project. Therefore, with mitigation, Project impacts to implementation of or physical interference with an adopted emergency response plan or emergency evacuation plan are less than significant.

Attachment H
Orange County Fire Authority, Fire Master Plans for
Commercial and Residential Development, Guideline B-09

Orange County Fire Authority

Community Risk Reduction

1 Fire Authority Road, Building A, Irvine, CA 92602 www.ocfa.org 714-573-6100

Fire Master Plans for Commercial & Residential Development



Guideline B-09

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Fire Master Plans for Commercial & Residential Development

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Fire Master Plans for Commercial & Residential Development

PURPOSE

The effectiveness of emergency response and firefighting operations is directly related to the proper installation and maintenance of fire access roadways, the proper siting of hydrants, adequate water supply, and access to structures. This document is a general guideline pertaining to the creation and maintenance of fire department access roadways, access walkways to and around buildings, and hydrant quantity and placement as required by the 2016 California Fire and Building Codes (CFC and CBC) and as amended by local ordinance. This guideline includes requirements for:

- Plan submittal
- Fire access roadway design
- Fire lane identification
- Premises identification
- Fire lane obstructions
- Access for residential development
- Alternative engineered fire access systems
- Access requirements in wildfire risk areas
- Hydrant quantity, spacing, placement, and identification
- Water availability and fire flow
- Access to structures
- Access during construction
- Fire Safe Regulations for State Responsibility Areas (SRA)

SCOPE

These guidelines apply to new, remodeled, reconstructed, or relocated residential or commercial structures and developments to which emergency response may be necessary. The information contained in this document is intended to assist the applicant in attaining compliance and to ensure that privately owned roadways necessary for emergency response purposes will be available for use at all times. Some of the issues discussed within this document may be covered in more detail through other OCFA guidelines, as referenced. Areas of particular importance and requirements that are commonly overlooked on fire master plan submittals have been identified with a black arrow in the left margin. Items available on the OCFA website (www.ocfa.org) will be identified by underlining.

NOTE!

For projects located in State Responsibility Areas (SRA), this Guideline must be used in conjunction with the detailed fire safe regulations (FSR) in Guideline B-09a to ensure that the project complies with applicable local and state fire access and hydrant requirements.

The following definitions are provided to facilitate the consistent application of this guideline:

Access Walkways - An approved walking surface leading from fire access roadways to exterior doors, the area beneath rescue windows, and other required openings in structures.

Bollards - Permanent or removable poles that are placed across a roadway for the purpose of restricting vehicular access to a portion of a site or to protect a piece of equipment from potential vehicular damage. Bollards are not permitted across a fire access roadway.

Fire Apparatus Access Roads - The means for emergency apparatus to access a facility or structure for emergency purposes. Roadways must extend to within 150 feet of all portions of the exterior of the first floor of any structure and must meet specified criteria for width, pavement characteristics, roadway gradient, turning radius, etc. Fire apparatus access roads are also referred to as fire lanes.

Fire Lane Identification – Signs or curb markings that allow fire apparatus access roads to be readily recognized so that they will remain unobstructed and available for emergency use at all times.

Gates and Barriers - Devices that restrict pedestrian and vehicle ingress and egress to and from a facility.

Gate and Barrier Locks - Devices that are installed on gates and barriers to secure a property or facility.

Hose Pull – The effective distance (150 feet is standard) that firefighters can drag a hose from fire apparatus to attack a fire. Hose pull is measured along a simulated path of travel accounting for obstructions and not “as the crow flies.” See Attachments 27 and 29.

Premises Identification - The visual means (address numbers) used to readily identify a property or facility street address. It may also be used to distinguish separate buildings within a single facility or property.

Rescue Openings – Exterior doors or windows required in sleeping rooms in R occupancies located below the fourth story of a building that allow rescue of trapped occupants. See CBC Section 1029.

State Responsibility Area (SRA) – Land where the State of California has primary *financial* responsibility for the prevention and suppression of wildland fires. All SRA land is located within County unincorporated areas; SRA does not include lands within city boundaries or in federal ownership. A map showing SRA lands within Orange County can be found at: http://frap.fire.ca.gov/data/frapgismaps/sra11_2/sramap.30.pdf. For access and hydrant requirements for projects in the SRA, also refer to Guideline B-09a.

Very High Fire Hazard Severity Zone (VHFHSZ) – A designated area in which the type and condition of vegetation, topography, fire history, and other relevant factors increase the possibility of uncontrollable wildland fire. Structures within a VHFHSZ require special construction features to protect against wildfire hazards; please consult with the local building department and refer to CBC Chapter 7A for specific requirements.

Wildfire Risk Area - Land that is covered with vegetation, 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. For purposes of this document, Wildfire Risk Area includes Very High Fire Hazard Severity Zones (see above), Wildland-Urban Interfaces (WUI), and similarly hazardous areas.

SUBMITTAL REQUIREMENTS

1. Plan Submittal Requirements

Plans shall be provided to demonstrate compliance with all codes and other regulations governing water availability for firefighting and emergency access to sites and structures within the jurisdictions served by the OCFA. In addition, changes to existing structures or sites shall be reviewed by the OCFA to ensure that the modifications do not affect water availability or access.

- A. Submittals – Two plan sets will need to be submitted at the location specified in the OCFA Plan Submittal Routing list. In addition, an electronic copy of the plan in .pdf format on a CD, USB memory stick, or other acceptable medium shall be provided. Accompanying sets of documentation for items such as gates, water availability data, paving certification, soil gas assessment (See Guideline C-03), and conditions of approval shall be supplied, as needed. The OCFA plan review and inspection fee, as well as any city administrative fees, is due upon submittal of plans. Refer to the OCFA Fee Schedule for the current fire master plan fee.
- B. Scope – The scope of work shall be clearly indicated on the plan. If the building or site in question was approved previously, include the OCFA Service Request number of that prior approval on the new plans. A copy of the previously approved fire master plan shall be submitted along with new plan sets for any revision.
- C. Building Data – Information related to the building’s location, use, and construction shall be clearly indicated on the plan.



- 1) Include the project’s street address (or a working or proposed address of the job trailer or future building on the site if an address is not assigned yet) and the tract, tentative tract, or parcel *map* number (this is NOT the County Assessor’s parcel number or APN).
- 2) Indicate the types of occupancies that will be housed in the structure as listed in California Building Code (CBC) Section 302.
- 3) Indicate the construction type of each building (e.g., I-A, III-B, IV, V-B).
- 4) Indicate the building height on the plans as defined in CBC Chapter 2. If the building height is greater than 70 feet, also indicate the elevation change (measured from finished floor to finished floor) between the lowest floor giving access to the structure and the highest occupied floor or occupied roof deck. If this distance is more than 75 feet, the building will be subject to additional requirements for high-rise structures; see OCFA Guideline H-01.
- 5) Note the type of sprinkler system installed/proposed (e.g., NFPA 13, 13-R, or 13-D).
- 6) For unsprinklered structures larger than 6,000 square feet or sprinklered structures larger than 18,000 square feet, provide an



allowable area calculation (and a mixed occupancy calculation, if the building houses multiple occupancies) to demonstrate that the building can be of the specified size and construction type. *CBC 506*



D. Fire Master Plan Notes – Include the OCFA Fire Master Plan Notes on the plan. Some notes may need to be customized depending on the type of project or scope of work. See Attachment 1.



E. Water Availability – To facilitate the review process and avoid untimely delays in project approval, applicants are strongly encouraged to arrange a hydrant flow test with the local water department *prior to submitting plans to the OCFA* if the project includes a new structure or increase in the floor area of an existing structure. Water availability information may not be required to be submitted for every project, and plans may be submitted with a hydrant flow test pending, but the applicant should understand that project approval may be delayed if it is determined during review that this information is required. If the project requires evaluation of the available fire flow, it will not be approved without a completed OCFA Water Availability form or equivalent data sheets from a water district. Water availability information must be no older than six months.

F. Conditions of Approval – To ensure consistency of the fire master plan with project conditions, include any conditions of approval pertaining to OCFA review of the project on the plans. If the project does not require review and entitlement by the Planning Commission, City Council, Board of Supervisors, or similar body, or the planning department permit review process is required but has not yet been completed, please state this on the plan. If you are unsure whether your project requires planning approval, please contact your city or County planner.

G. Complete Attachment 2, Fire Master Plan Submittal Checklist, and verify that basic project information has been provided and that general access and water requirements have been addressed on the plan.

2. Fire Access Roadways

Fire access roadways, commonly referred to as fire lanes, shall be provided for every facility or building when any portion of an exterior wall of the first story is located more than 150 feet from a public roadway, as measured along an approved route. Extenuating circumstances, increased hazards, and additional fire safety features may affect these requirements. For additional information related to residential tract development, see Section 6. For information related to access during construction, see Section 10. For projects in the SRA, also see Guideline B-09a. CFC 503

A. Fire Apparatus Access Road Design - Fire access roadways must be engineered to support emergency response apparatus. Roadways must be designed to facilitate turning radii of apparatus and meet requirements for gradient, height clearance, and width. Specific criteria pertaining to the design of fire access roadways are detailed below.

1) Fire access roadways shall be designed, constructed, and maintained to support the imposed loads of OCFA fire apparatus with a total weight of 68,000 pounds (75,000 pounds for projects located in the



SRA—see FSR Section 1273.02 in Guideline B-09a). Apparatus weight is distributed as 46,000 pounds on tandem rear axles and 22,000 pounds on the front axle. The surface shall be designed, constructed, and maintained to provide all-weather driving capabilities. *A letter or statement, wet-stamped and signed by a registered engineer, shall be provided on the plans certifying that any new roadway meets this 68,000-pound (75,000 pounds for projects in the SRA), all-weather requirement.* Road base without an appropriate topping or binding material does not satisfy the all-weather requirement. *CFC 503.2.3*

2) Number of Fire Apparatus Access Roads Required:

- a. One is required if any portion of an exterior wall of the first story of a building is located more than 150 feet from a fire access roadway. That access is to be measured by an approved route around the exterior of the building (see Section 9: Access to Structures and Attachment 27). *CFC 503.1.1*

EXCEPTION: Hose-pull distance to the main entry door of a detached single-family home or duplex or related accessory structure (poolhouse, casita, garage, workshop, barn, etc.) may be up to 300 feet when protected throughout by a sprinkler system. See Section 6.C.

EXCEPTION: When approved by the fire code official, this distance may be increased to 300 feet for open parking garages that comply with either (a) or (b) below:

- (a) The structure is protected throughout with an NFPA 13 sprinkler system; or
- (b) The structure meets all of the following requirements:
- (i) Two stairways are directly accessible via exterior doors/doorways.
 - (ii) These stairways provide direct access to all tiers of the parking structure.
 - (iii) These stairways are equipped with Class I wet standpipe outlets at each floor or intermediate landing.
 - (iv) The doors/doorways serving these stairs are within 40' travel distance from a fire access roadway.
 - (v) These stairs are sufficiently separated and located in a manner that facilitates firefighting operations within the structure, as determined by the fire code official.
- b. More than one road is required if it is determined that access by a single road may be insufficient due to terrain, location, travel distance, potential fire or life-safety hazards, or other factors that could limit access or if vehicle congestion, railways, or weather conditions could impair the single entry point. Supplementary access points shall be located to facilitate evacuation and

emergency operations and minimize congestion or obstruction during an emergency incident. *CFC 503.1.2*

(a) A minimum of two vehicle access points is required for any development containing 150 or more residential units.

(b) A secondary access point may also be required for commercial projects more than 124,000 sq.ft. in building area. Requirements may vary depending on factors such as building use, expected vehicle and occupant load on site, traffic stacking, or impact on surrounding streets. When specified, OCFA staff will coordinate with the local jurisdiction's community development and public works or engineering departments.

(c) For projects in the SRA, see also FSR Section 1273.09 in Guideline B-09a.

3) Location of Fire Apparatus Access Roads:

For purposes of determining the suitability of public roads and fire access roadways for staging fire apparatus and facilitating fire suppression operations for a particular structure, the following criteria shall apply:

a. To protect fire apparatus, personnel, and equipment from damage and injury from falling debris, the edge of fire access roadways serving multi-story buildings should be located no closer than 10 to 30 feet from the building, the actual distance being a function of overall building height with consideration given to building construction, presence of openings, and other potential hazards. As distances greater than 40 feet inhibit the use of vehicle-mounted ladders while distances closer than 20 feet do not allow for a proper laddering angle, the edge of fire lanes serving structures four or more stories in height shall be located between 20 and 40 feet from the building. These distances are measured from the face of the building to the top edge of the curb face or rolled curb flow line nearest the structure. To ensure that vehicular access and egress from dead-end fire access roadways serving multi-story buildings are maintained at all times, staging areas shall be provided along the roadway to permit fire apparatus to pass ladder trucks that have outriggers extended. Consideration shall be given to the length of the roadway, roof and building design, obstructions to laddering, and other operational factors in determining the number, location, and configuration of such staging areas. *CFC 503.1.1, 503.2.2*

b. Access may be taken from an on-site fire apparatus access road or from a public road with an average daily trip (ADT) count below 30,000 unless a recorded access easement agreement is in effect to obtain access from adjacent properties. Contact the city or County Traffic Engineer's office or Public Works Department for ADT information. *CFC 503.1.1, 503.1.2*

c. Public roads with an ADT count of 30,000 or more may be acceptable as a fire department access point serving an adjacent

site when certain conditions and features (e.g., vehicle turnouts, acceleration/deceleration lanes) are present that limit the hazard to firefighters and other drivers. Such access roads will be evaluated on a case-by-case basis. *CFC 503.1.1, 503.1.2*



- 4) Width of Fire Access Roads - The minimum width of a fire access roadway is 20 feet. If a center median is included, the required width shall be provided on both sides of the median. *CFC 503.2.1, 503.2.2, 503.4*

In wildfire risk areas, fire lanes shall be at least 28 feet wide; *Exception: fire lanes that are 150 feet or less in length may be 24 feet wide if serving one to three dwelling units; where all structures served by the fire lane are protected with fire sprinklers, this length may be increased to 400 feet.* This width shall be provided to a logical termination outside of the wildfire risk area. Refer to the Fire Hazard Severity Zone maps or contact the OCFA Planning and Development Services Section to determine whether your project is located within a wildfire risk area.

The minimum width of roadways in the SRA may vary from these requirements depending on whether they are a required fire lane and other factors; please refer to Guideline B-09a for specific requirements.

The width of fire department access roads is measured from top face of the curb to top face of the curb on streets with standard vertical curbs and gutters, and from flow line to flow line on streets with rolled, sloped, flared, or other non-vertical curb and gutter configurations. Flow line is the lowest continuous elevation on a curb. Road sections and curb details or approved city street improvement plans may be required to verify method of measurement.

- 5) Parking Restrictions - No parking is permitted on roadways that are narrower than 28 feet in width. Parking on one side is permitted on a roadway that is at least 28 feet but less than 36 feet in width. Parking on two sides is permitted on a roadway 36 feet or more in width. These restrictions apply to all roads serving as fire lanes, including those located in wildfire risk areas. See Attachment 3. *Note: Minimum street widths for allowed parking may be more restrictive in some cities. Check with the local Planning Department for specific requirements. CFC 503.4*



- 6) Vertical Clearance - Fire access roads shall have an unobstructed vertical clearance of not less than 13 feet 6 inches (15 feet for driveways and at gates for projects in the SRA; see FSR Sections 1273.10 and 11 in Guideline B-09a). If trees are located adjacent to the fire access roadway, place a note on the plans stating that all

vegetation overhanging the fire access roadway shall be maintained to provide a clear height of 13 feet 6 inches (or 15 feet, if applicable) at all times. See Attachments 4 and 5. *CFC 503.2.1*

- 7) Fire Apparatus Access Road Grade - The grade for access roads shall not exceed 10% or 5.7 degrees (7% or 4 degrees in Irvine unless otherwise approved by the City Engineer). The grade may be increased to a maximum of 15% or 8.5 degrees for approved lengths of access roadways, when all structures served by the access road are protected by automatic fire sprinkler systems. Cross-slope shall not be greater than 2% for paved access roadways. *CFC 503.2.7, 503.2.8*
- 8) Inside and Outside Turning Radii - The inside turning radius for an access road shall be 17 feet or greater. The outside turning radius for an access road shall be 38 feet or greater. As fire apparatus are unable to negotiate tight "S" curves, a 56-foot straight leg must be provided between these types of compound turns or the radii and/or road width must be increased accordingly. See Attachment 6. Minimum radii for projects in SRA may be greater; see Guideline B-09a. *Note: to accommodate the OCFA's largest fire apparatus an inside and outside turning radius of 20 and 42 feet, respectively, is recommended and requested. CFC 503.2.4*
- 9) Dead-end Access Roadways - Dead-end roadways in excess of 150 feet shall be designed and constructed with approved turnarounds or hammerheads. Turnarounds shall meet the turning radius requirements identified above. The minimum cul-de-sac radius is 38 feet with no parking allowed. The maximum length of a cul-de-sac or other dead-end road without mid-way turnarounds or other mitigating features is 800 feet. See Attachment 7. Additional turnarounds may be required for projects in the SRA—see FSR Sections 1273.09 and 10 in Guideline B-09a. *Note: to accommodate the OCFA's largest fire apparatus, an outside turning radius of 42 feet or larger is recommended and requested. CFC 503.2.5*
- 10) Bridges - When a bridge is required as part of an access road, it shall be a minimum of 20' in width and designed and constructed to accommodate a total weight of 68,000 pounds (75,000 pounds for projects in the SRA—see FSR Sections 1273.02 and 07 in Guideline B-09a). Apparatus weight is distributed as 46,000 pounds on tandem rear axles and 22,000 pounds on the front axle. *CFC 503.2.6*
- 11) Median breaks - Where medians or raised islands are proposed that prevent emergency apparatus from crossing over into opposing traffic lanes, breaks or pass-throughs may be required to be provided. The location and design specifications for the pass-throughs shall be coordinated with the city/County public works or engineering department. *CFC 503.1.2*
- 12) Continuity of fire lanes – When any portion of a street, drive aisle, or other roadway is required to be a fire lane and the roadway is longer than 150 feet, the remainder of the roadway shall be treated as a fire

lane to a logical point of termination at another approved fire lane; at an approved hammerhead or turnaround; at an intersection with a public road suitable for use as a fire lane.

At the discretion of the fire code official, if the portion of the roadway that is required to be a fire lane is no more than 150 feet long, the fire lane may be terminated at that point provided that the remainder of the roadway beyond is clearly not suitable or intended for use as a fire lane. This may be due to factors including, but not limited to, insufficient width or vertical clearance, excessive grade, change in paving material/driveway apron, or other physical constraints or obvious visual indicators, as approved. *CFC 503.1.1, 503.2.5*

3. Fire Access Roadway Identification *CFC 503.3*

Fire lane identification will be required when it is necessary to restrict parking of vehicles in order to maintain the required width of fire access roadways for emergency vehicle use. Unlawful use of fire lanes will be enforced by the local law enforcement agency in accordance with the California Vehicle Code (CVC). See Attachment 8.

A. Sign and Curb Marking Options - Areas designated as a fire lane require an acceptable method of marking that shall be approved prior to installation. Examples of dimensions and acceptable options for signage installations and markings are found in Attachments 9 through 14. The following methods are acceptable means of identifying designated fire lanes for public and private streets. Choose either option 1 OR option 2 below. Acceptable signage and/or marking requirements for streets in each jurisdiction must be verified with the appropriate city or County public works, community development, or traffic engineering department prior to submittal to the OCFA. Where parking is otherwise restricted by city/County planning or traffic standards, and no parking zones are clearly identified with signs or curb markings in accordance with those standards, additional "FIRE LANE—NO PARKING" signs are not required, when approved by the Fire Code Official.

- 1) Specific areas designated by the OCFA as fire lanes must be marked with red curbs meeting the specifications in Attachment 9. In addition, where the number of entrances into the area marked with fire lanes is limited, all such vehicle entrances to the designated area shall be posted with approved fire lane entrance signs meeting the specifications in Attachment 10. This option is preferred by the OCFA.
- 2) "Fire Lane—No Parking" signs meeting the specifications in Attachment 12 shall be posted immediately adjacent to each designated fire lane and at intervals not to exceed 50 feet, unless otherwise approved by the fire code official. In addition, where the number of entrances into the area marked with fire lanes is limited, all such vehicle entrances to the designated area shall be posted with approved fire lane entrance signs.



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Note: All alternative signs must be approved through the OCFA and by the city/County engineer and/or police agency, as applicable. In areas where fire lane parking restrictions are enforced by the California Highway Patrol, “NO STOPPING—FIRE LANE” signs meeting Caltrans standards shall be used.

4. Premises Identification *CBC 501.2, CFC 505.1*

Three possible configurations of buildings or units within a building may exist and are identified as follows: freestanding buildings, multi-unit buildings, or multi-building clusters. Common to all configurations are the requirements listed in sections A through E below. Projects may also be subject to specific address and wayfinding signage requirements contained in the local jurisdiction’s municipal ordinance or security code, which may be more restrictive than the requirements listed in this guideline. For projects located in the city of Irvine, please see Irvine Uniform Security Code, Sections 5-9-516.B & C and Section 5-9-517L. For projects located in SRA land, please see FSR Article 3 in [Guideline B-09a](#) for additional addressing requirements.

- A. Approved numbers or addresses shall be placed on the front elevation of all new or existing buildings in such a position that is plainly visible and legible from the street or road on which the property is addressed. Addresses shall not be located where they have the potential of being obstructed by signs, awnings, vegetation, or other building/site elements. An address monument at the vehicle entrance or other location clearly visible and legible from the public road may be provided in lieu of an address on the structure where only a single building with a single street address is present and no other structures are accessible from the fire lane serving that structure.
- B. The numbers shall contrast with their background.
- C. The numbers shall be a *minimum* of 4 inches or more in height for single-family residential structures/duplexes, or individual unit numbers in multi-family residential structures and 6 inches or more for commercial structures or the primary building address or address range posted on multi-family residential structures. The 6-inch numbers shall have a one-inch stroke and the 4-inch numbers shall have a ½-inch stroke, or as required by local ordinance, whichever is more restrictive. Building setbacks, elevation, and landscaping can affect these minimum size requirements.
- D. Address numbers may be required to be internally or externally illuminated by the local jurisdiction’s security code. While not required by the OCFA, illumination of addresses is recommended to facilitate rapid location of a site or building.
- E. Where it is unclear as to which street a building is addressed to (e.g., a building is accessed only from a street other than the one it is addressed to; multiple main entrances to the site, or building itself, front different streets), the name of the street shall also be identified as part of the posted address.

In addition to common requirements specified above, the following additional requirements pertain to each building configuration described below:

- F. Multi-Unit Buildings - Suite/apartment numbers shall be placed on or adjacent to the primary entrance for each suite/apartment and any other door providing access to fire department personnel during an emergency. Multiple residential and commercial units having entrance doors not visible from the street or road shall, in addition, have approved numbers grouped for all units within each structure and positioned to be plainly visible from the street or road.
 - G. Multi-Building Clusters - Approved numbers or addresses shall be placed on the front elevation(s) of all buildings that form the cluster. If all building addresses are not clearly visible or legible from the public road serving the structures, an address monument shall also be provided at the entry point(s) to the site indicating the range of addresses accessible from that entrance.
5. Obstructions to Emergency Vehicle Access
- Existing or proposed gates and barriers crossing fire apparatus access roadways must be shown on the plans. Information such as the location, type of gate (e.g., swinging, sliding), dimensions, and method of operation (manual, electric) must also be provided. Note or identify the following on the fire master plan:
- A. Clear Width – Gated openings for egress and ingress of vehicles shall have at least 13 feet of clear width when serving a single 13-foot wide fire lane designed for traffic travelling in one direction and 20 feet clear for a 20-foot wide fire lane serving traffic travelling in two directions. The vertical clearance shall not be less than 13 feet 6 inches including landscaping and/or trees. This reduction in width is applicable only to the area immediately adjacent to the guard house or gate. Roads leading up to and beyond the guard house or gate shall meet standard fire lane width requirements prescribed in Section 2.A.5 of this guideline. See Attachment 4. *CFC 503.2.1*
- For projects in SRA, gate openings shall be at least 2 feet wider than the width of the traffic lane(s) passing through the gate (minimum 15' for one-way traffic, 22' for two-way traffic). An unobstructed vertical clearance of 15 feet shall be provided. See FSR Section 1273.11 in Guideline B-09a.
- B. Turning Radii - The minimum inside turning radius is 17 feet with an outside radius of 38 feet for both the exterior and the interior approach to the gate. To accommodate the OCFA's largest fire apparatus, 20 feet and 42 feet or larger for inside and outside turning radii, respectively, is recommended and requested where possible. For projects in the SRA, see FSR Sections 1273.04 and 11 in Guideline B-09a. *CFC 503.2.4*

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- C. Setbacks from the Street - Gates and barriers shall be located a minimum of 46 feet (for existing developments) and 56 feet (for new developments) from any major street. A private driveway serving only one single-family residence is exempt from this requirement. If existing conditions prevent installation of the minimum setback, documentation supporting an acceptable alternative shall be provided. The alternative solution must facilitate emergency ingress without endangering emergency response personnel, emergency apparatus, and the general public. The alternative shall be subject to review and approval. See Attachment 15. Note: The required minimum setback from the street may also vary from city to city. Check with the local Planning Department for specific requirements as they may be more restrictive.
- D. Setbacks from First Interior Turn - A 27-foot minimum unobstructed setback is required from a gate to the first turn to allow emergency apparatus clearance. See Attachment 15.
- E. Manually Operated Gate and Barrier Design - Typical gate designs may include sliding gates, swinging gates or arms, or guard posts with a chain traversing the opening.
- 1) Permanent or removable bollards are not permitted to be placed across fire access roadways. *CFC 503.4*
 - 2) For gates and barriers that are not used on a frequent basis or those that are located such that they have a reasonable likelihood of being blocked by vehicles, vegetation, furniture, or other obstructions (e.g., secondary fire department vehicle ingress/egress points, gates accessed from plazas or turf block areas), permanent signage constructed of 18-gauge steel or equivalent shall be attached on each face of the gate or barrier that reads "NO PARKING—FIRE LANE" or similar. See Attachment 16 for an example of a barrier sign. *CFC 503.3*
 - 3) Manually operated gates and barriers shall have frangible padlocks, Knox padlocks, or weather-resistant Knox key boxes. The key box shall be placed four to five feet above the roadway surface at the right side of the access gate in a conspicuous location that is readily visible and accessible. The key box must be clearly labeled "FIRE DEPT." *CFC 506*
 - 4) Where the gate will be used for purposes other than emergency vehicle access, installation of a Knox box containing a key to operate an owner-supplied padlock is recommended. If the gate can be reached by emergency personnel from both sides (such as for a secondary emergency access roadway serving a residential tract), the lock shall also be capable of being accessed from both sides. Knox boxes shall be provided as necessary to ensure that the lock can be accessed and opened from any direction of approach available to emergency personnel. For projects in Irvine, see also section 5-9-519.D of the Irvine Uniform Security Code for specific requirements. *CFC 503.6, 506.1*

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F. Electrically Operated Gates and Barriers *CFC 503.6*

- 1) In the event of loss of normal power to the gate operating mechanism, it shall be automatically transferred to a fail-safe mode allowing the gate to be pushed open by a single firefighter *without any other actions, knowledge, or manipulation of the operating mechanism being necessary and without the use of battery back-up power, except as noted below.* The manufacturer's specification sheet demonstrating compliance with this method of operation during power loss shall be provided or scanned directly onto the plan. Should the gate be too large or heavy for a single firefighter to open manually, a secondary source of reliable power by means of an emergency generator or a capacitor with enough reserve to automatically, immediately, and completely open the gate upon loss of primary power shall be provided for fail-open operation. A capacitor, *but not a battery*, may also be used for fail-open operation where the gate operating mechanism does not have a fail-safe mode.
 - a. A battery may only be used in place of fail-safe manual operation when the gate operator has a fail-open mode that will automatically, immediately, and completely open the gate and keep it open upon reaching a low power threshold, regardless of the presence of normal power.
- 2) The gate control for electronic gates shall be operable by a Knox emergency override key switch (with dust cover). The key switch shall be placed between 42" and 48" above the roadway surface at the right side of the access gate within two feet of the edge of the roadway. The key switch shall be readily visible and unobstructed from the fire lane leading to the gate. The key switch shall be clearly labeled "FIRE DEPT."

To facilitate use by the Irvine Police Department, key switches serving electronic gates in that city shall be located in accordance with the city's security code. Apart from the location (left side of the access road), accessibility, and mounting requirements described therein, they shall otherwise meet all OCFA requirements listed in this guideline.

- 3) For electrically operated gates, the type of remote gate opening device that will be installed shall be noted on the plan. The remote opening device is required in addition to the Knox key switch. The remote opening systems currently available for use by OCFA are either optical or radio-controlled. Optical systems work the same as the traffic signal preemption system by using the emergency vehicle's strobe light to open the gate. The radio-controlled system opens the gate when the emergency responder clicks the receiver on an 800 MHz radio. A gate serving an individual single family residence or duplex is exempt from this requirement.

Currently approved gate opening systems include:

- 3M Opticom
- Click2Enter* (system shall be configured in single-pulse mode with 1.5 second transmission window)
- Fire Strobe Access Products, Inc.
- Tomar

**For projects located in the city of Irvine, Click2Enter shall be used.*

- 4) Upon activation of the key switch, the gate shall open and remain open until returned to normal operation by means of the key switch. Where a gate consists of two leaves, the key switch shall open both simultaneously if operation of a single leaf on the ingress side does not provide for the width, turning radii, or setbacks necessary for fire apparatus to navigate the vehicle entry point.
- 5) The key switch shall be labeled with a permanent red sign with not less than ½" contrasting letters reading "FIRE DEPT" or with a "Knox" decal. Note this requirement on the plan.
- 6) Place the OCFA notes for electric gates on the plan verbatim. See Attachment 31.

For projects in the City of Irvine, refer also to Knox and Click2Enter system requirements in the Irvine Uniform Security Code, Section 5-9-519 Emergency Access.

- G. Gate and Barrier Locks - Gate or barrier locks shall be reviewed and approved prior to their installation on any new and/or existing access gate or barrier. Authorization for Knox products is processed through the Knox Box company website at www.knoxbox.com. Knox key switches and key boxes serving only vehicle gates and not buildings shall be submastered for use by both the fire and sheriff/police department. Call the OCFA Planning and Development Services Section at 714-573-6100 for any questions regarding the need for key boxes or switches. See section 9.C.3 for information regarding installation of key boxes and key switches on pedestrian gates and buildings.

6. Requirements for Residential Tract Developments

The following requirements apply to all new residential tract developments with single-family homes or duplexes. They may also be applied to individual single-family homes or duplexes or to multi-family housing projects as approved by the fire code official.

A. Cul-de-sacs.

- 1) Any street that is a required fire lane and greater than 150 feet in length shall be provided with a 38-foot minimum outside turning radius (40 feet for projects located in the SRA—see FSR Sections 1273.05

- and 09 in Guideline B-09a) or other approved turnaround within 150' of the end of the fire lane. See Attachment 17. *CFC 503.2.5*
- 2) The cul-de-sac “bulb” (the portion at the dead-end of the cul-de-sac street which is wider than the cul-de-sac “neck” leading to it—see Attachment 17) shall be identified as a fire lane with red curbs or “Fire Lane—No Parking” signs (see Attachment 13a). Fire lane markings may be omitted from the bulb if one or more of the following applies:
 - a. A three-point turn may be made within 150' of the end of the cul-de-sac with all areas along the curb assumed to be occupied by parked vehicles. Auto-Turn software or other approved methods shall be used to demonstrate this unless a standard hammerhead turnaround template is used. See Attachment 13a; or
 - b. The length of the cul-de-sac street, including any driveway or spur road accessed from the bulb that is a required fire lane, is not more than 150 feet (see Attachment 17). For cul-de-sac streets where all homes are protected with fire sprinklers, the cul-de-sac does not need to be a designated fire lane if the distance to the front door of the most remote home, as measured from entrance to the cul-de-sac street, is no more than 300 feet (see Attachment 20); or
 - c. The radius of the cul-de-sac is at least 46 feet (48 feet in SRA); or
 - d. The cul-de-sac is a public street and local traffic or planning restrictions prohibit the designation of fire lanes in the bulb:
 - (a) The homes accessed from the bulb of the cul-de-sac shall be protected with an automatic fire sprinkler system complying with NFPA 13-D. The sprinkler system shall include full protection of the attic space(s).
 - (b) Written concurrence shall be provided from the appropriate city or County development official or engineer indicating that such a prohibition on fire lane signs or red curbs is consistent with local zoning, development, and traffic codes.
 - 3) Cul-de-sacs longer than 150 feet that are required to be designated as fire lanes may contain a center island provided that:
 - a. A minimum 28-foot-wide drive lane with an adequate inside turning radius is provided around the island, and
 - b. Island landscaping will not intrude into the drive lane, and
 - c. Any home that uses the portion of the cul-de-sac beyond the beginning of the island to satisfy hose-pull requirements is protected with an automatic fire sprinkler system complying with NFPA 13 D; the sprinkler system shall include full protection of the attic space(s) or another approved method of mitigation
 - (a) Where the radius of the cul-de-sac and size of the island is such that access can be taken only from the portion of the drive lane beyond the beginning of the island (i.e., the road around the island is effectively a curved road and no longer presents the same obstruction to suppression activities as an island cul-de-

sac would), attic protection need not be provided when approved by the fire code official.

- d. The island is designated a no parking area with red curbs or fire lane signs. See Attachments 18 and 19.
 - 4) Cul-de-sac streets that are not required fire lanes as determined by the fire code official are exempt from fire lane identification, turnaround, and other standard requirements; see Attachment 20. Cul-de-sacs, driveways, and other roadways located in the SRA shall comply with the regulations listed in Guideline B 09a regardless of whether they are required fire lanes.
- B. Residential eyebrow roads
- 1) If the “eyebrow” does not meet OCFA’s turning radius and minimum width, fire department access will be measured around the island and any other obstructions from the nearest available fire lane. See Attachment 21.
- C. When a detached single-family home or duplex, or related accessory structure (poolhouse, casita, garage, workshop, barn, etc.) on a single-family residential lot, is protected throughout by an approved NFPA 13-D, 13-R, or 13 fire sprinkler system, access distance as measured along an approved route from the fire apparatus to the main entry door serving the interior of the structure may be up to 300 feet. Enhancements to the sprinkler system or project may be required when this distance exceeds 300 feet or when otherwise necessary to mitigate deficiencies in water supply, hydrant location, inaccessible portions of the building’s perimeter, location in a cul-de-sac with an island, etc.
- D. Since local law enforcement resources are limited for parking enforcement purposes in private developments, the OCFA requires a viable parking enforcement plan from the developer prior to approving the fire master plan. Parking enforcement plans shall include:
- 1) Detailed information specifically identifying who will be responsible for enforcing the plan, and
 - 2) Powers granted to the entity shall include vehicle towing for parking violations (include language similar to that provided in Attachment 8 of this guideline), and
 - 3) The level of enforcement to be carried out within the development.

This information must be integrated into the fire master plan. Evidence that the enforcement plan is permanently incorporated into the Conditions, Covenants, and Restrictions (CCRs) and/or recorded against the deed shall be provided prior to OCFA approval of the final map or print of linen. Once approved, these provisions cannot be amended without written approval by the OCFA. See Attachment 22 for a sample enforcement letter.

7. Engineered Alternative Fire Apparatus Access Systems

The following criteria will be used when evaluating an alternative engineered access surface material for a specific application (e.g., “Turf block,” “Grasscrete”). Prior to installation, the design professional must incorporate these criteria into a plan submittal subject to approval by OCFA P&D, which reserves the right to limit the amount or extent of alternative surface serving as required fire department access to a structure or site.

- A. Calculations and a statement stamped and signed by a registered civil engineer or other qualified registered professional shall certify that the proposed surface and substrate meets the criteria of an all-weather driving surface and is capable of withstanding the minimum weight of 68,000 pounds imposed by OCFA apparatus (75,000 pounds for projects located in the SRA—see FSR Section 1273.02 in Guideline B-09a). Apparatus weight is distributed as 46,000 pounds on tandem rear axles and 22,000 pounds on the front axle. *Note: the OCFA recommends a minimum weight capability of 71,000 pounds in order to support our largest apparatus.*
- B. Manufacturer’s specification of the material being installed must indicate that the application is consistent with the manufacturer’s recommendations.
- C. Material shall only be installed on slopes of no more than one degree (1.75% grade), unless otherwise specified by the manufacturer, and drainage shall be provided as required to provide adequate traction for OCFA apparatus. Surfaces shall be crowned or sloped to one side to drain water away from the roadway; surfaces shall not have a “V” or other configuration causing water to accumulate in the fire access roadway. This information shall be detailed on the plan.
- D. The design shall include a curb cut that delineates entry onto the engineered fire access surface from a street. A 4” or lower curb cut or a rolled/ramped curb is acceptable. The curb cut must be shown on the plan. The entry to the area shall be clearly marked as a fire lane with either a red curb or sign to prevent the entry from being blocked.
- E. A minimum four-inch wide concrete strip around the perimeter of the designated area shall be specified on the plan to clearly delineate the extent of fire department access. If the area is accessible to or intended to be used by anyone other than emergency responders, the concrete curb shall be painted red and stenciled “Fire Lane—No Parking” in white every 30 feet or portion thereof. In areas where painting the curb is not feasible, alternative methods of delineating the extent of the fire access roadway, such as by stamping “Fire Lane—No Parking” into the concrete, posting of signs, or by the use of red reflectors, may be acceptable if approved by OCFA plan review staff. Describe the method of identifying the extent of the fire access roadway clearly on the plan.
- F. The following sentence shall be placed, verbatim, as a note on the plan: “Final approval is subject to actual field acceptance testing utilizing OCFA fire apparatus.”

G. A clause requiring the maintenance of alternative access roadways shall be placed in the CCRs, deed, and/or similar documents.

8. Hydrant and Water Availability Requirements

Applicants must provide documentation that hydrants are provided in the quantity and spacing described in California Fire Code (CFC) Appendix C. They must also show that they are capable of delivering the amount of water required by CFC Appendix B. The quantity and spacing of hydrants is governed by the fire flow required for the structure(s) served. The required fire flow is dependent upon the size of the structure, type of construction, and whether the building is equipped with fire sprinklers. This information must be shown clearly on the plans to assist in the determination of the fire flow requirement.

A. Water Availability – To facilitate the review process and avoid untimely delays in project approval, applicants are strongly encouraged to arrange a hydrant flow test with the local water department *prior to submitting plans to the OCFA* if the project includes a new structure or increase in the floor area of an existing structure. Water availability information may not be required to be submitted for every project, and plans may be submitted with a hydrant flow test pending, but the applicant should understand that project approval may be delayed if it is determined during review that this information is required. If the project requires evaluation of the available fire flow, it will not be approved without a completed OCFA Water Availability form or equivalent data sheets from a water district. Water availability information must be no older than six months.



NOTE!

- 1) Obtain a Water Availability form from OCFA Planning & Development Services Section.
- 2) Fill out the project and building information in the first section of the Water Availability form. Care should be taken when determining the applicable fire area for the project. As stated above, fire flow is dependent on several factors, so *the largest building or group of structures is not necessarily the most demanding* in terms of fire flow.
- 3) Determine the required fire flow from CFC Table B105.1 and B105.2, as applicable, provided in Attachment 23. A 50% reduction in fire flow (but not duration) may be taken when the fire-flow calculation area consists only of buildings equipped with an approved automatic fire sprinkler system. If you are unsure of how to calculate the fire flow requirement for your project, you may fax the form to the OCFA and we will determine the fire flow for you.
- 4) Contact the local water company to request a hydrant flow test or fire flow modeling calculation, and have a representative of the water company complete and sign the last section on the form. In some cases, the water company may allow or require a qualified third party to perform the flow test for you.
 - a. In newly developed areas without water infrastructure, the water department may issue a “will-serve” letter indicating the expected

- amount of water that will be delivered once the water system is installed and operational.
- b. If multiple hydrants are located within the maximum distance allowed by CFC Table C102.1, the amount of water available from each hydrant may be combined, provided that the hydrants are flowed simultaneously.
 - c. It is the applicant's responsibility to ensure that the following information is provided at a minimum on either the water company's test data sheet and/or the OCFA Water Availability form:
 - (a) Static pressure and residual pressure in psi and observed flow in gpm; or
 - (b) Calculated flow in gpm at 20 psi.
 - d. Scan or photocopy the completed form or data sheets onto your plans or include the original with your plan submittal.
- 5) Please ensure that the fire area, building size, construction type, and flow data are complete and accurate. Errors or omissions in this information may result in plans having to be resubmitted or fire flow testing being redone.
- B. Fire-Flow Calculation Area – The fire-flow calculation area shall be the total floor area of all floor levels within the exterior walls, and under the horizontal projections of the roof of a building, except as modified in the following two conditions: 1) Portions of buildings which are separated by fire walls without openings, constructed in accordance with the California Building Code are allowed to be considered as separate fire-flow calculation areas; 2) The fire-flow calculation area of buildings constructed of Type IA and Type IB construction shall be the area of the three largest successive floors. *CFC Appendix B Section B104*
- C. Hydrant Location – Hydrants shall be provided along the length of the fire access roadway in the quantities and up to the maximum distances prescribed in CFC Table C102.1. See Attachments 24 and 29.
- 1) Hydrants must be located within three feet of the edge of a fire access roadway and cannot be located in areas where they will be visually or operationally obstructed (behind fences or walls, in bushes, behind parking spaces, etc.). Clearance shall be provided to a distance no less than three feet from the perimeter of the hydrant. Where hydrants are located in landscaped areas, a 4x4' concrete pad may be required by the OCFA inspector to ensure that vegetation does not encroach on this clear space. For projects in the SRA, please see FSR Section 1275.15 in Guideline B-09a.
 - 2) The hydrant outlets must face the fire access roadway. Where all of the outlets cannot face the fire access roadway (e.g., the hydrant is located in a landscape peninsula or island in a parking lot; the hydrant has three outlets), the 4" outlet(s) shall take precedence.
 - 3) The hydrant shall be located at least 40 feet from the building(s) it serves (50 feet for structures in the SRA per FSR Section 1275.15 in Guideline B-09a). Where it is impractical to locate the hydrant 40 feet



NOTE!

- from adjacent structures, additional hydrants may be provided or the hydrant may be located closer provided that nearby walls do not contain openings and the hydrant is not otherwise located where it can be rendered inoperable due to damage from collapsed walls, debris, or excessive heat.
- 4) Hydrants shall be located so that a hose line running between the hydrant and the fire department connection(s) (FDCs) served by that hydrant does not cross driveways, obstruct roads or fire lanes, or otherwise interfere with emergency vehicle response and evacuation of a site.
 - 5) Hydrants and fire department connections shall not be located behind parking stalls or in other locations where they are likely to be blocked by vehicles or other objects. Whenever possible, hydrants shall be placed at street and drive aisle intersections in preference to mid-block locations. Where on-street parking is allowed, hydrants should be placed in the shortest parkways between adjacent driveways, at corners and chokers where parking is not normally allowed, and in similar areas where impact to space available for parking and the potential for hydrants to be obstructed is minimized. Where adherence to the spacing requirements of CFC Table C102.1 does not permit hydrant locations to be optimized in this manner, the fire code official may authorize alternative spacing.
 - 6) Hydrants and fire department connections should not be located where apparatus staged at these appurtenances would then encroach on minimum fire apparatus turning radii unless alternative routes are available. Hydrants shall not be placed in the “bulb” end of a cul-de-sac where apparatus staged at the hydrant would prevent the cul-de-sac from being used as a turnaround. For projects located in the SRA, see FSR Section 1275.15 in Guideline B-09a.
- D. Protection of Hydrants – Where hydrants are located such that they are exposed to potential damage from vehicular collision, they shall be protected by curbs or bollards. See Attachment 25.
- 1) If vehicles can approach the hydrant from more than one direction, the hydrant shall be protected by four bollards of concrete-filled pipe four inches in diameter and mounted in concrete in a square around the hydrant. The bollards need to be spaced a minimum of three feet from the perimeter of the hydrant. The bollards must be placed so that their location does not impede access to or use of the hydrant. Two bollards may protect hydrants that can be approached from only one side.
 - 2) Hydrants may not require protection by bollards if they are located such that the potential for collision is minimal or if they are sufficiently protected by a standard concrete curb at least six inches in height.
- E. Hydrant Markers and Color –
- 1) Blue reflective pavement markers (“blue dots”) shall be used to identify fire hydrant locations. Blue reflective markers used for any other

purpose should be removed. See Attachment 26. Projects in the SRA shall also comply with FSR Section 1275.20 in Guideline B-09a.

- a. Two-way streets and roads – Markers shall be placed six inches from the edge of the painted centerline or from the approximate center of streets without a painted centerline on the side nearest the hydrant.
- b. Streets with left turn lanes at the intersection – Markers shall be placed six inches from the edge of the painted white line on the side nearest the hydrant.
- c. Streets with continuous two-way left turn lane – Markers shall be placed six inches from the edge of the painted yellow line on the side nearest the fire hydrant.
- d. Freeways – Because of higher maintenance at these locations, markers shall be placed on the shoulder of the roadway one foot to the right of the painted edge line nearest the hydrant.

2) Hydrant Color

- a. Private hydrants (hydrants separated from the city main by and located downstream from a backflow prevention device) shall be painted OSHA safety red or equivalent. A plan for underground piping serving private hydrants shall be submitted to the OCFA for review and approval.
- b. Public hydrants shall be painted any color other than red as specified by the local water purveyor or city/County water department.

9. Access to Structures

A. Hose pull – The dimension of 150 feet when used in relation to fire department access is commonly referred to as “hose pull distance.” As the name implies, this is the maximum distance that firefighters can effectively pull a fire hose or carry other equipment to combat a fire. The hose pull distance is set at 150 feet due to a variety of factors, including standard hose lengths, weight of equipment, hydraulic properties, and accepted operational procedures. See Attachments 27 and 29.

- 1) Hose pull is measured along a path that simulates the route a firefighter may take to access all portions of the exterior of a structure from the nearest public road or fire lane. Under most circumstances, hose pull will not be a straight-line distance and should not be measured “as the crow flies.”
- 2) All obstructions such as fences, planters, vegetation, and other structures must be considered when determining whether a building is accessible from a particular location on the fire access roadway. Topography may also affect the potential access route and any significant changes in elevation must be accounted for when measuring hose pull distances.
- 3) Hose pull measurements begin at a point in the street located 10 feet from the edge of the curb.



- B. Access walkways - CFC 504.1 provides for the installation of approved access walkways from fire access roadways to exterior openings required by either the CBC or CFC. The OCFA may require the construction of such walkways depending upon particular site conditions or project parameters. These conditions include, but are not limited to, building use or occupancy, topography, vegetation, and surface conditions. Design professionals must carefully consider these issues when developing a project site. When required:
- 1) Access walkways must be provided to all required egress doors from a building, all firefighter access doorways in buildings with high-piled storage, and the area beneath each rescue window, at a minimum. Access walkways will typically be required around the entire perimeter of a structure to facilitate control of a fire through any other available openings.
 - 2) Access walkways must be a minimum of five feet in width.
 - 3) Access walkways shall consist of a surface that lends itself to safe use during building evacuation, firefighting, and rescue efforts. Solid surface walkways such as concrete or asphalt are preferable, though alternative surfaces such as decomposed granite (DG), gravel, or grass are permissible under certain conditions. Ground covers and shrubs that prevent or impede laddering of structures are not permitted to be planted on or adjacent to access walkways.
 - 4) Where the grade itself presents a slip or fall hazard, an access walkway with a slip-resistant surface and/or stairway must be provided.
 - 5) The type of material provided for the access walkway and/or other specifications shall be indicated on the fire master plan and are subject to approval by the OCFA.
- C. Path of travel obstructions - Firefighter access to and emergency egress from required openings must remain free and unobstructed at all times. Architects, landscape designers, and facility managers must take care to ensure that fences, planters, and vegetation will not interfere with access and egress routes.
- 1) Fences - Walls, fences, hedges, and similar obstructions may not be located within the area designated as an access walkway unless a gate through the obstruction equipped with an approved padlock or Knox box has been provided for firefighters to access the perimeter of the structure. If the wall or fence blocks travel from required egress openings to the public way or an open area at least 50 feet from the structure ("safe dispersal area" per CBC 1028.5), a gate operable by the occupants evacuating the structure must be provided that allows unimpeded egress to the public way. Where doors in the path of emergency egress travel are required to be equipped with panic hardware, gates shall likewise be similarly equipped. These requirements may not apply to individual single family residences.
 - 2) Vegetation - As stated previously, certain types of ground cover and low-growing plants present an impediment to firefighting and rescue



NOTE!

operations and are prohibited from being planted in the access walkway. In addition, taller vegetation such as shrubs and trees may not be located where they will, either when planted or upon maturation, present an obstruction to accessing rescue windows. Raised planter areas are not allowed to be used as rescue ladder access points where the change in elevation could be a potential impediment to firefighter access.

- 3) Key boxes and key switches - Knox devices shall be provided where necessary to ensure that immediate access for firefighting, rescue, and other emergency purposes is possible.
 - a. Location - At a minimum, Knox devices shall be provided for the following locations:
 - (a) gates along the paths of firefighter travel from the fire lane to all points along the perimeter of the structure;
 - (b) gates to pool enclosures;
 - (c) building gates or doors leading to interior courtyards containing rescue windows;
 - (d) building gates or doors leading to exterior hallways or balconies providing access to residential units or tenant suites;
 - (e) gates in exterior enclosures containing hazardous or combustible material storage;
 - (f) buildings using hazardous materials or processes where such warrants immediate access
 - (g) exterior doors to rooms containing main alarm panels or annunciators;
 - (h) doors and gates providing access to parking structures;
 - (i) within the fire command center in high-rises and other large buildings;
 - (j) main entry to buildings equipped throughout with an alarm system and not staffed 24/7;
 - (k) facilities where a high-volume of after-hours calls is expected or experienced;
 - (l) doors and gates to other areas identified by the fire department.

When approved by the OCFA, a frangible padlock or chain that can be cut with bolt cutters or a Knox padlock may be used in lieu of a key box for exterior hazardous or combustible materials storage areas. Manually operated vehicle or pedestrian access gates that are not commonly used or not required to be openable from the egress side may also be provided with a frangible padlock or chain.

Knox boxes or switches shall be located adjacent to and clearly visible from the gate or door served. For gates in walls and fences up to six feet in height, they shall be securely mounted at a height of four to five feet above grade; on buildings they shall be mounted six feet above grade, in a location that is easily accessible to firefighters and, when

required, police officers. Shared Knox devices (see section 9.C.3.e below) shall meet the installation requirements of both the OCFA and the police department unless otherwise approved by the applicable agency—refer to the local security or municipal ordinance for specific requirements. Where the potential for vandalism or tampering is significant, key boxes that are not submastered for police department use may be mounted higher with OCFA approval. Boxes and switches are not required to be electronically monitored; if they are, they shall not initiate an alarm signal that requires a response by the fire department.

- b. Key box Contents - The key used to unlock the gate or door shall be kept in the key box. When the key unlocks more than the individual adjacent gate or door, a label or tag shall be attached to the key identifying the gates or doors it operates. Where multiple gates or doors are served by a single box, two or more copies of the key(s) are recommended so that a copy will be available to each engine company responding to the site.
- c. Electric Locks – Electromagnetically or electromechanically locked pedestrian gates and doors shall be equipped either with a Knox box containing a key to open the lock or, if the door lock cannot be operated with a key from the exterior, a Knox key switch shall be provided adjacent to the door. Where key switches are provided, the door or gate lock shall remain disengaged until the key switch is returned to the “normal” closed or locked position. In the city of Irvine, a Knox box and key operated lock may be required for electromagnetically or electromechanically locked gates and doors serving common areas; Click2Enter may also be required. Please refer to Irvine Uniform Security Code, Section 5-9-519.
- d. Vehicle gates - See sections 5.E through 5.G for more information on requirements for Knox boxes and key switches serving vehicle gates across fire lanes.
- e. Master and Submaster Keying - Knox devices that provide access only to the perimeter of buildings and exterior common areas shall be submastered for dual use by the fire and police departments. Where access to interior *common* areas of buildings is mandated by the local security or municipal code, Knox devices shall also be submastered. Knox boxes containing keys to access any interior *private* spaces, such as the interior of single tenant buildings or individual suites in a multi-tenant building, shall be mastered for use by the fire department only. Where the local code requires police department access to these private interior portions of the building, a Knox box with dual master cylinders (one usable by the police, the other by the fire department), a separate device for each agency, or other arrangement may be required—contact OCFA P&D if this condition applies to your project. Where additional

devices beyond those required by the fire department are called for in the local municipal or security code, they shall also be accessible for use by the fire department to facilitate emergency response.

See Attachment 28 for a list of conditions where police department access to the interior of structures is required by each jurisdiction. If a Knox device serving any portion of the interior of a building will be submastered, indicate this on the fire master plan and provide documentation from the police department specifically stating that such access is required, including the acceptable installation specifications, on the plan.

- f. Ordering Knox Devices - Knox products are ordered through the Knox Box Company website at www.knoxbox.com. If you have questions, please contact OCFA Community Risk Reduction by email at knoxboxprogram@ocfa.org or by phone at 714-573-6177.
- D. Access to interior courtyards - Firefighter access and water supply as described below shall be provided for interior courtyards of R occupancy buildings. These requirements shall also apply to courtyards of buildings of other occupancies where the main entry door to any suite is accessed via the courtyard instead of an interior corridor or an egress balcony or door on the outer façade of the building. These are minimum requirements; structures that present unique or increased hazards to fire department operations may be subject to additional requirements. Covered courtyards designed as an atrium per CBC 404 are exempt from these requirements.
- 1) Number of access routes
 - a. A minimum of two means of access via “firefighter tunnels” shall be provided between each courtyard and the fire lane. A single tunnel may be allowed for smaller courtyards, as determined by the fire code official.
 - b. A tunnel interconnecting courtyards may suffice as a second means of access, provided that each courtyard so connected has at least one other tunnel leading directly to a fire lane.
 - 2) Design of firefighter tunnels
 - a. The outer entrance to the tunnel shall front on a fire lane.
 - b. Tunnels shall be a minimum 10 feet wide and, where possible based on the height of the story they pass through, at least 10 feet tall, but no less than 8 feet.
 - c. Doorways and gate openings in the path of firefighter travel to, through, and from the tunnel shall provide a minimum 44-inch clear width after accounting for door jambs, door hardware, and other obstructions.
 - d. Where the tunnel intersects with corridors or other interior spaces, doors shall be provided to completely separate the tunnel from

those spaces in a manner that provides an uninterrupted path of travel through the tunnel from one end to the other.

- e. Every courtyard shall have at least one tunnel that provides a straight path of travel between the fire lane and the courtyard. Slight offsets are allowed provided that the dimensions and configuration of the path and location of doors, gates, stairs, and other features facilitate passage of firefighters carrying a 35' ladder. Other tunnels shall provide the shortest route feasible between the fire lane and courtyard but, when permitted by the fire code official, may not be required to accommodate movement of a ladder.
 - f. Landscape and hardscape features such as trees, shrubs, light poles, raised planters, walls, fences, and gates near the openings to the tunnel shall not hinder or delay movement of firefighters carrying a ladder.
 - g. Where there is an elevation change between the fire lane and courtyard, code-compliant ramps or stairs with a minimum clear width of 44" between handrails shall be provided. Only straight-run stairs shall be provided; no stair returns are allowed along the path of firefighter travel.
- 3) Tunnel construction
- a. Tunnels shall be separated from adjacent construction by minimum 2-hour fire barriers and 2-hour ceiling/floor assemblies.
 - b. Interior doors opening into the tunnel shall be minimum 90-minute rated self- or automatic-closing assemblies. Doors may be equipped with mag-holds, but other door stops are not allowed.
 - c. Wall and ceiling finishes within the tunnel shall be non-combustible. Where allowed by CBC/CFC Chapter 8, floors may be carpeted.
- 4) Use of firefighter tunnels - Tunnels are permitted to be used for other purposes provided that the use does not obstruct the clear path required or otherwise interfere with use of the tunnel for emergency purposes. Combustible furnishings and fixtures within the tunnel shall be kept to a minimum, and such items shall be fixed in place. Where the tunnel is also an exit component of the egress system (e.g., exit enclosure, passageway, exit stair, horizontal exit) or functions as an egress court per CBC 1028.4, no other non-emergency use shall be allowed within the tunnel.
- 5) Standpipes
- a. At least one standpipe outlet shall be provided in the courtyard when hose-pull from fire apparatus in the fire lane to any portion of the inner façade within the courtyard exceeds 200'.
 - b. If standpipes are required, an outlet shall be provided at the opening of the firefighter tunnel(s) into the courtyard and at other approved locations as required by the fire code official so that hose-pull to all portions of the courtyard is less than 150' as measured from the fire apparatus or standpipe outlet.

- c. The standpipe shall be Class I, interconnected to the sprinkler or underground system, and able to be pressurized via a fire department connection, if not automatically pressurized to a minimum of 100 psi via a fire pump serving the sprinkler system.
 - d. The standpipe may be wall mounted or standalone. If standalone, it shall be located no more than 18” from the edge of a primary walkway in the courtyard in a position where it is immediately visible and accessible to firefighters. Access to and use of standpipes shall not be hindered by planter walls, vegetation, or other features; 18” clearance shall be provided on all sides. The standpipe shall be provided with a permanent, durable sign stating “WET AUTO STANDPIPE” or “WET MANUAL STANDPIPE” as applicable in a color that contrasts with the background, preferably red on white or vice versa.
- 6) Rescue windows - In R occupancy structures requiring rescue openings, trees, shrubs, cabanas, trellises, fences, walls, pools, and other features shall not impede laddering operations. A clear space for raising and setting a ladder shall be provided beneath each rescue opening, and a walkable path free of obstructions shall be provided between each laddering area and the firefighter tunnel.

10. Access during construction

Access and water supply during construction shall comply with CFC Chapter 33 and the provisions listed in this section and, where applicable, elsewhere in this guideline. Construction activities at job sites not complying with these requirements may be suspended at the discretion of the OCFA inspector until a reasonable level of compliance is achieved.

At no time shall construction projects impair or obstruct existing fire access roadways or access to and operation of existing fire hydrants serving other structures. Should existing roadways or hydrants need to be moved or otherwise altered during the course of construction, the developer shall provide alternative access routes and other mitigation features to ensure adequate fire and life-safety protection. Such alternatives and features shall be submitted to the OCFA for review and approval prior to alteration of existing conditions.



NOTE!

- A. Lumber drop inspection – an inspection shall be scheduled with an OCFA inspector to verify that access roadways and operable hydrants have been provided for buildings under construction.
 - 1) For buildings of Type IV and V construction (and non-combustible structures that may have a portion of the exterior walls, façade, or other building elements comprised of wood or other combustible material), a lumber drop inspection shall occur prior to bringing combustible building materials on site.
 - 2) For other construction types (Type I, II, III) with exterior walls built of non-combustible materials, an inspection shall occur prior to

- commencing interior construction involving combustible materials (e.g., wooden mezzanines or partition walls, carpet, cabinetry or other woodwork, furniture, etc.). In concrete tilt-up and masonry buildings, wooden panelized roofing systems are exempt from this requirement.
- 3) An inspection shall occur prior to construction reaching 40 feet in height for buildings of any construction type that will have four or more floors when complete.
 - 4) The street address of the site shall be prominently posted at each entrance. For projects on streets that do not have a name or street signs posted yet, the sign shall include the project name and tract/lot number.
 - 5) Gates through construction fencing shall be equipped with a Knox padlock or frangible lock/chain. The local jurisdiction may also have specific construction site security requirements that may be more stringent (e.g., Irvine's Construction Site Security Ordinance). Where more stringent local requirements apply, provisions shall be made to ensure that firefighters can open the gate with bolt-cutters.
 - 6) When required by the OCFA inspector, fire lanes shall be posted with "Fire Lane—No Parking" signs or no parking areas shall be otherwise identified to maintain them free of obstructions during construction.
 - 7) Provisions shall be made to ensure that hydrants are not blocked by vehicles or obstructed by construction material or debris. A three-foot clear space shall be provided around the perimeter of the hydrant and no parking or similar obstructions shall be allowed along the adjacent road within 15 feet of the hydrant. Inoperable hydrants shall be bagged.
- B. Temporary Fire Access Roads - Temporary access roads (construction roads that do not match the final location and configuration of permanent roads as approved on a Fire Master Plan) and temporary hydrants may be permitted for single family residential model construction or a single detached custom home less than 5500 square feet in area with the conditions listed below. They may be allowed on a case-by-case basis for other structures with additional requirements, as determined by the fire code official.
- 1) Plans for temporary access shall be submitted to the OCFA Planning and Development Services Section. Plans shall be drawn to scale and show permanent (existing) roadways, proposed temporary roadway locations, location of models, space dedicated to storage of construction materials, and parking for work crews and construction vehicles. The plans shall clearly state that they have been submitted for temporary access and hydrants.
 - 2) Plans shall be stamped and signed by a licensed civil engineer stating that the temporary access road can support 68,000 pounds of vehicle weight in all-weather conditions. The road base material shall be over soil compacted to at least 90% and be mixed or topped with a suitable binding material to provide all-weather characteristics; road base alone

- does not satisfy this requirement. Provide manufacturer's documentation that demonstrates suitability of the material specifically as a *road stabilizer* as opposed to a dust palliative or for hillside erosion control, and, if applicable, indicating the mixture ratio for this purpose.
- 3) Provide a parking plan for the construction site detailing how the fire lane no parking regulations will be enforced. Include a clause in the letter stating that "the job-site superintendent is responsible for informing the work crews of parking requirements and that the entire job-site is subject to shutdown by the OCFA inspector if parking is in violation of fire lane posting." The letter shall be written on company letterhead and scanned onto the plan.
 - 4) Aboveground invasion lines are acceptable for water supply.
 - a. Provide drawings detailing how the line will be secured in place (e.g., size, depth, and interval of rebar tie-downs) and protected from vehicular damage (e.g., K-rails or bollards).
 - b. An invasion line may be run underground if the depth of bury can support the 68,000-pound weight of a fire apparatus (75,000 pounds for projects located in the SRA—see FSR Section 1273.02 in [Guideline B-09a](#)).
 - c. The temporary water line must provide the required fire flow; calculations may be required.
 - d. The pipe shall be listed for fire service.
 - e. Fire hydrants shall consist of a minimum 6" barrel with one 2-1/2" outlet and a 4" outlet. Note this on the plan.
 - 5) All other access and water requirements shall apply (e.g., width, approach clearance, premises identification, locks, gates, barriers, etc.).
 - 6) The approved plan for temporary access and water supply shall be available at the construction site prior to bringing combustible building materials on-site.
 - 7) An inspection by OCFA personnel is required to verify adherence to the approved plan prior to bringing combustible materials on-site.
- C. Phased access - Incremental installation of permanent access roadways as shown on a fire master plan may be permissible for commercial and residential developments. If phased installation is anticipated, the site superintendent or designee shall review the installation process with an OCFA inspector during the lumber drop inspection or pre-construction meeting. Depending on the complexity of the installation, size of the project, and other project-specific factors, the inspector may allow phased installation to proceed immediately or may first require that all or some of the following items are satisfied:
- 1) Plans for phased access shall be submitted to the OCFA Planning and Development Services Section either as part of the original fire master plan submittal or as a revision to an approved fire master plan. Plans shall be drawn to scale and demonstrate that all access and water

requirements are met during all phases of construction and that approval of one phase does not compromise or complicate completion of the subsequent phases. Plans shall show for each phase of construction:

- a. the extent of building construction
 - b. location of operable hydrants serving all buildings under construction
 - c. the location of construction fencing, barriers, and vehicle access gates
 - d. the location of all temporary or permanent “Fire Lane—No Parking” signs
 - e. equipment/materiel staging locations
 - f. worker parking areas (see item “4” below)
- 2) Phasing plans shall be stamped and signed by a licensed civil engineer stating that the access road can support 68,000 pounds of vehicle weight in all-weather conditions apparatus (75,000 pounds for projects located in the SRA—see FSR Section 1273.02 in Guideline B-09a). The road base material shall be over soil compacted to at least 90% and be mixed or topped with a suitable binding material to provide all-weather characteristics; road base alone does not satisfy this requirement. The final road section less the final lift of asphalt topping may be acceptable if certified by the engineer.
 - 3) The phasing plan shall identify any anticipated areas where fire department access roadways may be temporarily inaccessible due to trenching, slurry coating, striping, or other construction activities after they have been installed and inspected. The plan shall indicate the anticipated period of impairment and include provisions for providing plating over trenches and alternative access routes, notification to the fire department, and/or other forms of mitigation when such roadways are impaired.
 - 4) Provide a parking plan for the construction site detailing how the fire lane no parking regulations will be enforced. Include a clause stating that “the job-site superintendent is responsible for informing the work crews of parking requirements and that the entire job-site is subject to shut down by the OCFA inspector if parking is in violation of fire lane posting.”
 - 5) The approved phasing plan shall be available at the construction site prior to bringing combustible building materials on-site. A lumber drop inspection by an OCFA inspector will be required prior to the commencement of each phase; additional inspection fees will be due for each phase.
 - 6) All other access and water requirements shall apply (e.g., width, approach clearance, premises identification, locks, gates, barriers, etc.).

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ATTACHMENT 1

OCFA Fire Master Plan Notes (1-1-17)

All of the notes listed in the INSPECTION REQUIREMENTS and GENERAL REQUIREMENTS sections shall be placed, verbatim, on the plan under the heading "FIRE AUTHORITY NOTES." Include individual notes, as applicable, from the PROJECT-SPECIFIC REQUIREMENTS section.

INSPECTION REQUIREMENTS

1. OCFA site inspections are required for this project. Please schedule all field inspections at least 48 hours in advance. Inspections canceled after 1 p.m. on the day before the scheduled date will be subject to a re-inspection fee. Call OCFA Inspection Scheduling at (714) 573-6150.
2. A lumber drop inspection shall be performed prior to bringing combustible materials (or combustible fixtures and finishes for structures of non-combustible construction). All-weather access roads capable of supporting 68,000 lbs., topped with asphalt, concrete, or equivalent shall be in place and hydrants operational at time of lumber drop inspection.
3. For projects with fuel modification, a vegetation clearance inspection is required prior to a lumber drop inspection. Use the fuel modification plan service request number to schedule the vegetation clearance inspection.
4. Phased installation of fire access roads requires additional inspections not covered by the fees paid at plan submittal. Contact Inspection Scheduling to arrange for additional inspections that may be needed and any fees that may be due.
5. An original approved, signed, wet-stamped OCFA fire master plan shall be available on-site at time of inspection.
6. Access roads and hydrants shall be maintained and remain clear of obstructions at all times during and after construction. Areas where parking is not permitted shall be clearly identified at all times. Obstruction of fire lanes and hydrants may result in cancellation or suspension of inspections.
7. Temporary fuel tanks of 60 or more gallons shall be reviewed, inspected, and permitted by the OCFA prior to use.
8. The project address shall be clearly posted and visible from the public road during construction.
9. All gates in construction fencing shall be equipped with either a Knox or breakaway padlock.
10. Buildings of four or more stories shall be provided with stairs and a standpipe before reaching 40 feet in height.

GENERAL REQUIREMENTS

11. Fire lane widths shall be measured from top face of the curb to top face of the curb for fire lanes with standard curbs and gutters and from flow-line to flow-line for fire lanes with modified curb designs (e.g., rolled, ramped, etc.). The developer is responsible to verify that all approved public works or grading department street improvement plans or precise grading plans conform to the minimum street width measurements per the approved OCFA fire master plan and standards identified in OCFA Guideline B-09 for all portions of the fire access roads.
12. Permanent, temporary, and phased emergency access roads shall be designed and maintained to support an imposed load of 68,000 lbs. and surfaced to provide all-weather driving capabilities.
13. Fire lane signs and red curbs shall meet the specifications shown in OCFA Guideline B-09 and shall be installed as described therein. Additional fire lane markings may be required at the time of inspection depending on field conditions.
14. All fire hydrants shall have a "Blue Reflective Pavement Marker" indicating their location per the OCFA standard. On private property markers are to be maintained in good condition by the property owner.
15. Address numbers shall be located and be of a color and size so as to be plainly visible and legible from the roadway from which the building is addressed in accordance with OCFA Guideline B-09. Wayfinding signs, when required by the local AHJ, shall comply with the standards of that agency. When wayfinding signs are also required by the OCFA, they may be designed to local AHJ requirements provided that such standards facilitate location of structures, suites, and dwelling units by emergency personnel.

16. Access gates shall be approved prior to installation and shall be in compliance with Chapter 5 of the CFC and OCFA guidelines.
17. Approved access walkways shall be provided to all required openings and all rescue windows.
18. Vegetation shall be selected and maintained in such a manner as to allow immediate access to all hydrants, valves, fire department connections, pull stations, extinguishers, sprinkler risers, alarm control panels, rescue windows, and other devices or areas used for firefighting purposes. Vegetation or building features shall not obstruct address numbers or inhibit the functioning of alarm bells, horns, or strobes.
19. Dumpsters and trash containers larger than 1.5 cubic yards shall not be stored in buildings or placed within 5 feet of combustible walls, openings or combustible roof eave lines unless protected by an approved sprinkler system.
20. Any future modification to the approved Fire Master Plan or approved site plan, including but not limited to road width, grade, speed humps, turning radii, gates or other obstructions, shall require review, inspection, and approval by the OCFA.
21. Approval of this plan shall not be construed as approval of any information or project conditions other than those items and requirements identified in OCFA Guideline B-09 and related portions of the 2016 CFC and CBC. This project may be subject to additional requirements not stated herein upon examination of actual site and project conditions or disclosure of additional information.

PROJECT-SPECIFIC REQUIREMENTS (Include only those notes that are applicable to the project as designed; some notes may need to be modified to address specific project conditions)

22. An underground piping plan is required for the installation of an automatic fire sprinkler system or for a private fire hydrant system. A separate plan submittal is required.
23. An architectural plan is required to be submitted to the OCFA for review and approval for projects containing A, C, E, F, H, I, L, and R-4 occupancies. A plan may also be required for R-1 and R-2 occupancies over two stories or those utilizing sprinklers or fire walls to increase the maximum building size allowed—see OCFA Info Bulletin 02-13.
24. A chemical classification and hazardous materials compliance plan shall be approved by the OCFA prior to any hazardous materials being stored or used on site. A separate plan submittal is required.
25. Buildings used for high-piled storage shall comply with CFC requirements. A separate plan submittal is required if materials will be stored higher than 12 feet for lower-hazard commodities, or higher than six feet for high-hazard commodities such as plastics, rubber, flammable/combustible liquids, tires, carpet, etc.
26. An automatic fire sprinkler system shall be installed in accordance with applicable codes and local ordinances, amendments, and guidelines. Sprinkler systems, other than those listed in CFC 903.4, shall be monitored by an approved central station. Separate plan submittals for the sprinkler and monitoring systems are required.
27. Buildings containing industrial refrigeration systems shall comply with CFC requirements. A separate plan submittal is required if refrigerant quantities exceed thresholds.
28. A fire alarm system shall be installed in accordance with applicable codes and local ordinances, amendments, and guidelines. A separate plan submittal is required.
29. Structures located in a Fire Hazard Severity Zone or Wildland-Urban Interface area are subject to the construction requirements prescribed in Chapter 7A of the 2016 CBC and/or Section 337 of the 2016 CRC. Construction materials/methods are reviewed and inspected by the Building Department.
30. One or more structures shown on this plan are located adjacent to a fuel modification area. Changes to the fuel modification zone landscaping, new structures, or addition/alteration to existing structures requires review and approval by the OCFA.
31. Projects located in State Responsibility Areas shall also comply with all applicable requirements from Title 14, Div. 1.5, Ch. 7, SubCh. 2 “SRA Fire Safe Regulations” and Guideline B-09a.
32. Structures meeting the criteria in CFC 510.1 shall be provided with an emergency responder radio system. Refer to CFC 510.2 through 510.6.3 and DAS/BDA guidelines published by OC Sheriff’s Communication and Technology Division and OCFA for technical and submittal information.

ATTACHMENT 2

Fire Master Plan Submittal Checklist

PROJECT INFORMATION

- Scope of project is clearly defined on the plan? Yes
- Conditional Use Permit conditions included with submittal? Yes N/A (CUP was not required by city/county)
- Tract/Tentative Tract/Parcel Map Number has been provided? Yes
- Standard OCFA fire master plan notes are included? Yes (Notes are tailored to this project, where applicable)
- Building area, construction, occupancy, sprinkler type noted on plan? Yes
- Allowable area calculation provided on plan? Yes No (<6,000 sf unsprinklered; <18,000 with sprinklers)
- Sheets not relevant to fire master plan removed from plan set? Yes
- Access/hydrant phasing plan provided? Yes N/A (No phasing of access/hydrant installation)

WATER AND HYDRANTS

- Water availability form completed and provided? Yes No (Test in process) No (no change in demand)
- All hydrants within 350' of the site are shown on plan? Yes
- Are hydrants provided/spaced per CFC Appendix C? Yes

ACCESS AND ROADWAYS

- Extent of the access roadway is clearly shown on the plan? Yes
- Turning radii and width (incl. road sections) shown on the plan? Yes
- Exterior of all structures within 150' hose pull distance? Yes No (AM&M proposed) No (sprinklered R-3)
- Engineer's certification provided for new paving? Yes N/A (No new paving)
- Walkable surface provided to required openings? Yes
- Road and walkway grades >10% (7% in Irvine) shown on plan? Yes N/A (Grade <10%, <7% in Irvine)

FIRE LANE IDENTIFICATION

- Red curbs are identified on plan with bold, dashed, or red lines? Yes N/A ("Fire Lane—No Parking" signs provided)
- Location of each "Fire Lane—No Parking" sign shown? Yes N/A (Red curbs provided)
- Fire lane entrance sign provided at each vehicle entrance? Yes N/A (All roads at least 36 feet wide)
- Drawings of red curbs/"No Parking"/entrance signs provided? Yes N/A (All roads at least 36 feet wide)

GATES AND OBSTRUCTIONS

- Are all gates, fences, and planters shown? Yes
- Are vehicle gates identified as manual or electric? Yes N/A (No gates proposed)
- Gate operator specs showing emergency operation provided? Yes N/A (No electric gates proposed)
- Manual vehicle gates have "No Parking" sign noted? Yes N/A (No manual gates proposed)
- Knox boxes/locks/switches are noted on plans? Yes N/A (No gates proposed)
- OCFA gate notes/specifications included on plan? Yes N/A (No gates proposed)

OTHER REQUIREMENTS

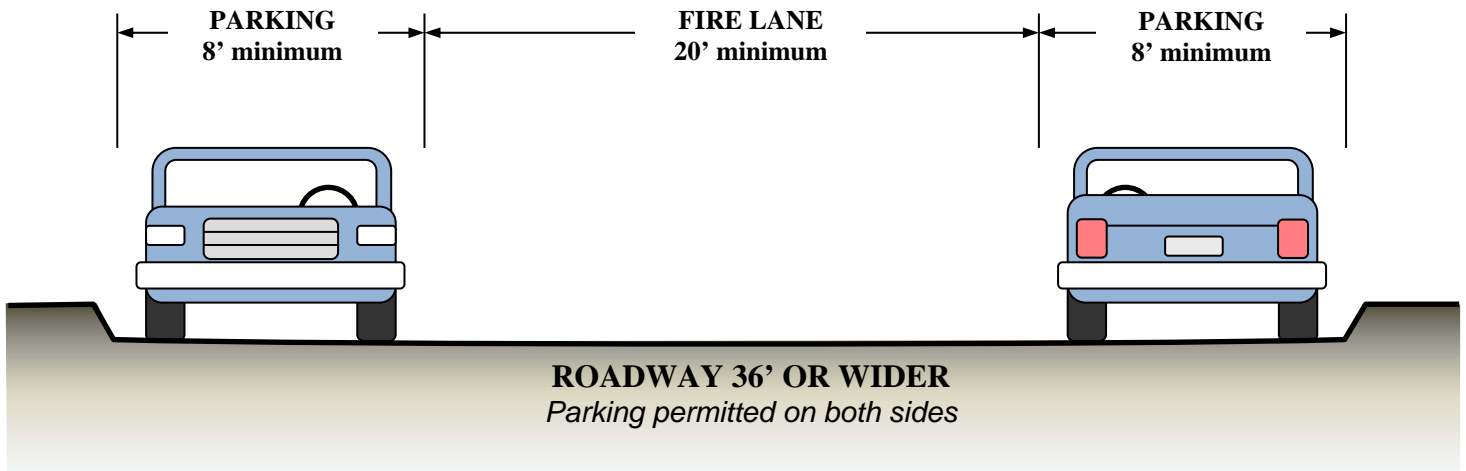
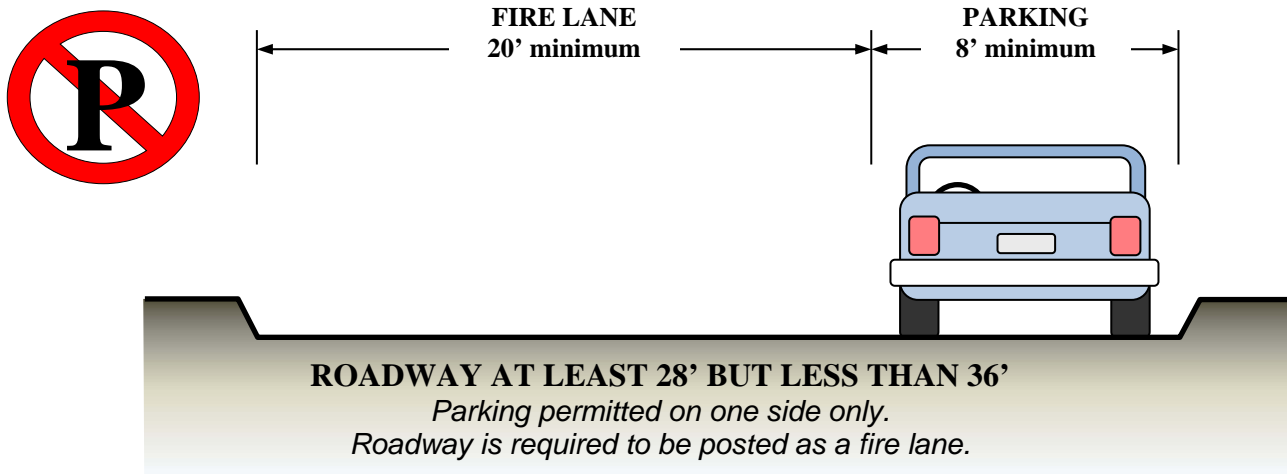
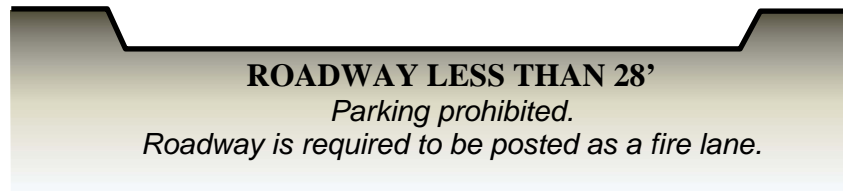
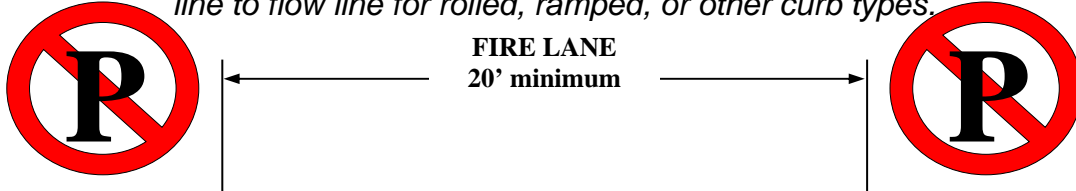
- AM&M request letter scanned onto plan? Yes N/A (No alternate methods proposed)
- Premises ID/address monument location shown on plan? Yes N/A (Single family homes)
- Trash enclosures are located at least 5' from buildings? Yes No (Enclosures are existing or sprinklered)
- Two entry points provided for 150 or more residences? Yes N/A (Non-residential project)
- Buildings >75' to highest occupiable floor called out? Yes N/A (No high-rise structures)
- Parking enforcement letter provided? Yes N/A (Public streets only)
- Project located in DOGGR area (portions of Yorba Linda, Buena Park, Placentia, Seal Beach, San Clemente, and Unincorp. OC)? See Guideline C-03. Yes No

NOTE: This is only a listing of basic fire master plan submittal requirements. Other information or requirements may be necessary depending on conditions specific to each project.

ATTACHMENT 3

Minimum Road Widths

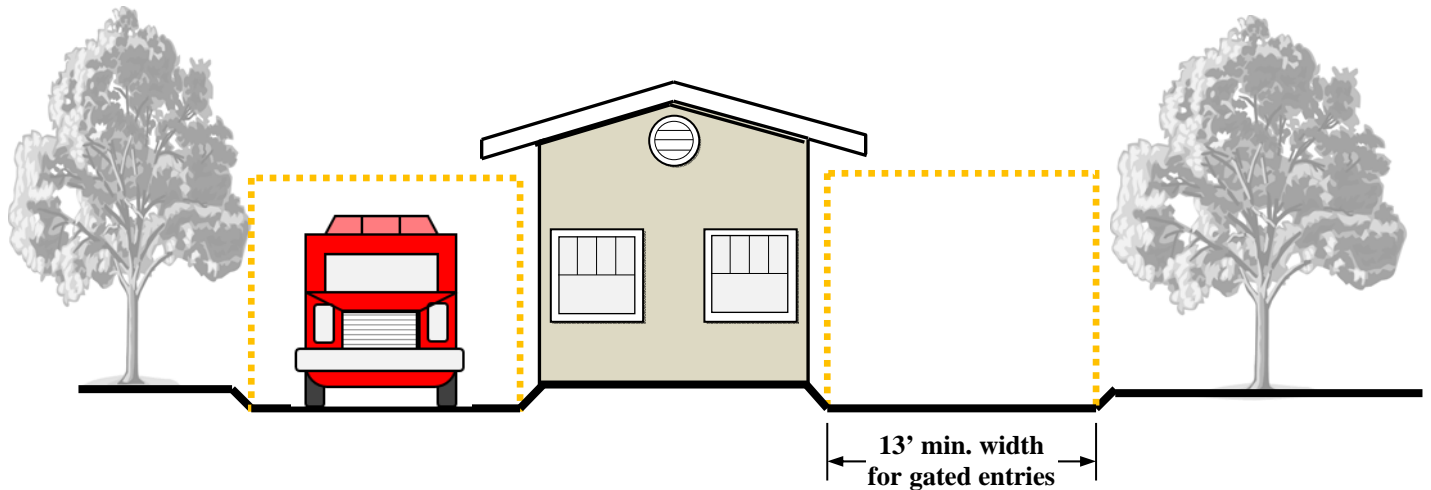
Measured from top face of curb to top face of curb for standard vertical curbs or flow line to flow line for rolled, ramped, or other curb types.



ATTACHMENT 4

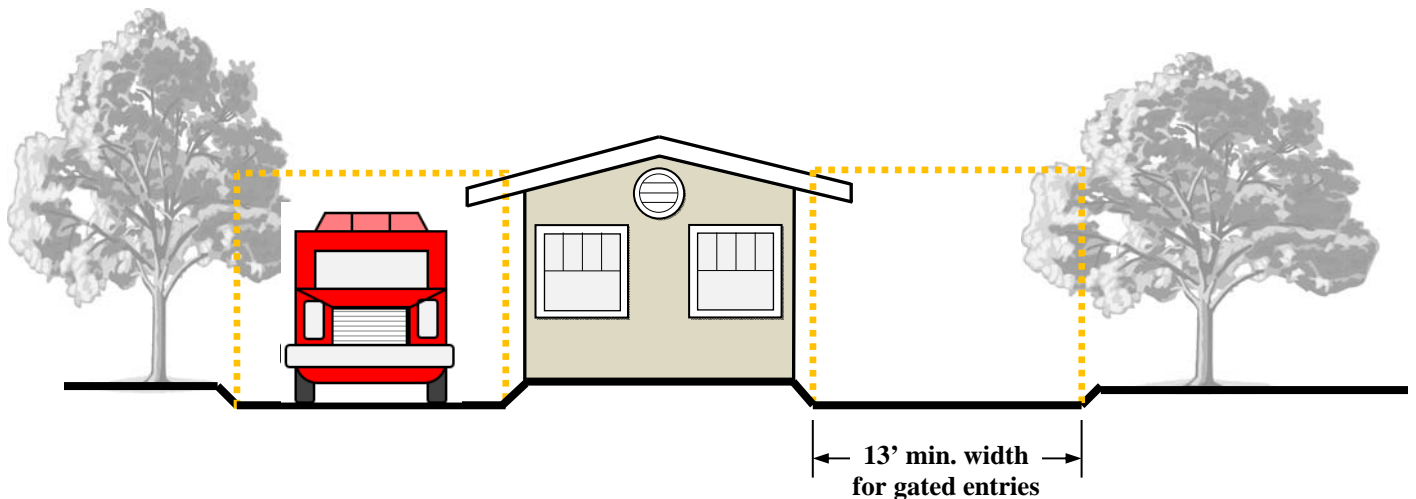
Fire Apparatus Access Roadway Clearance For Typical Gated Community Guard House

Fire lane width reductions detailed below are applicable only to the area immediately adjacent to the guard house or gate. Roads leading up to and beyond the guard house or gate shall meet standard fire lane width requirements prescribed in Section 2.A.5 of this guideline.



PROPER CLEARANCE PROVIDED

Eaves and vegetation do not encroach upon the 13'-wide by 13'-6" high minimum dimensions allowed for the fire access roadway next to the guard house.

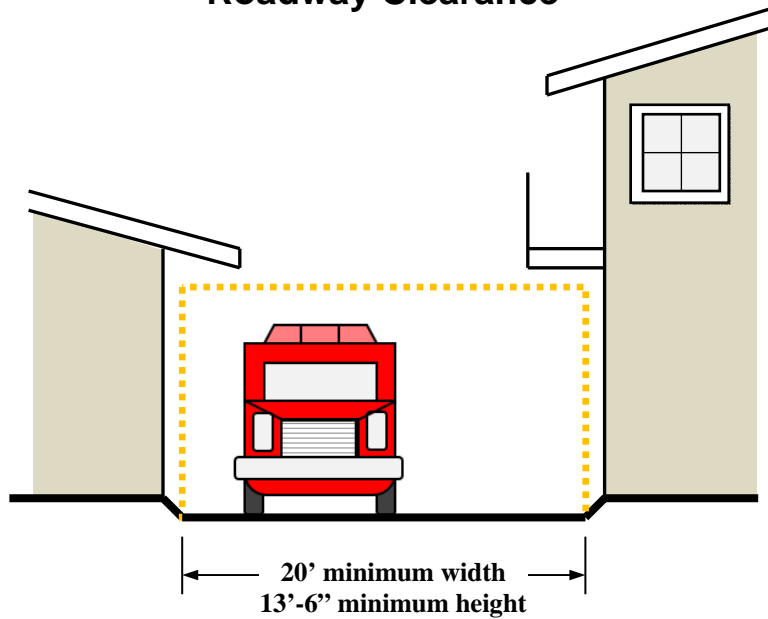


INSUFFICIENT CLEARANCE

While a 13'-wide access roadway is provided next to the guard house, eaves and vegetation encroach upon the minimum clear height of the fire lane.

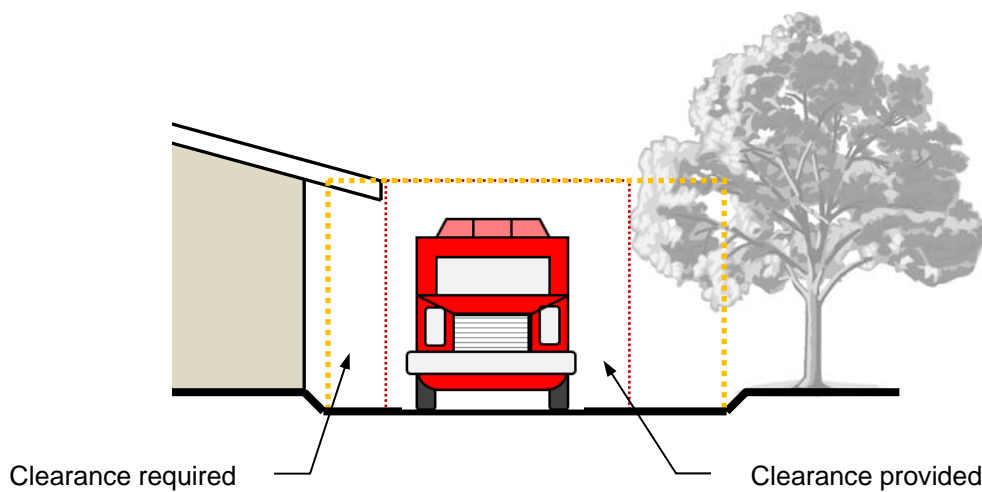
ATTACHMENT 5

Fire Apparatus Access Roadway Clearance



PROPER CLEARANCE PROVIDED

Eaves, balconies, and other obstructions do not encroach upon the 20' wide by 13'-6" high fire access roadway envelope. As projections over the fire lane can interfere with firefighting and rescue operations, such obstructions shall be limited.

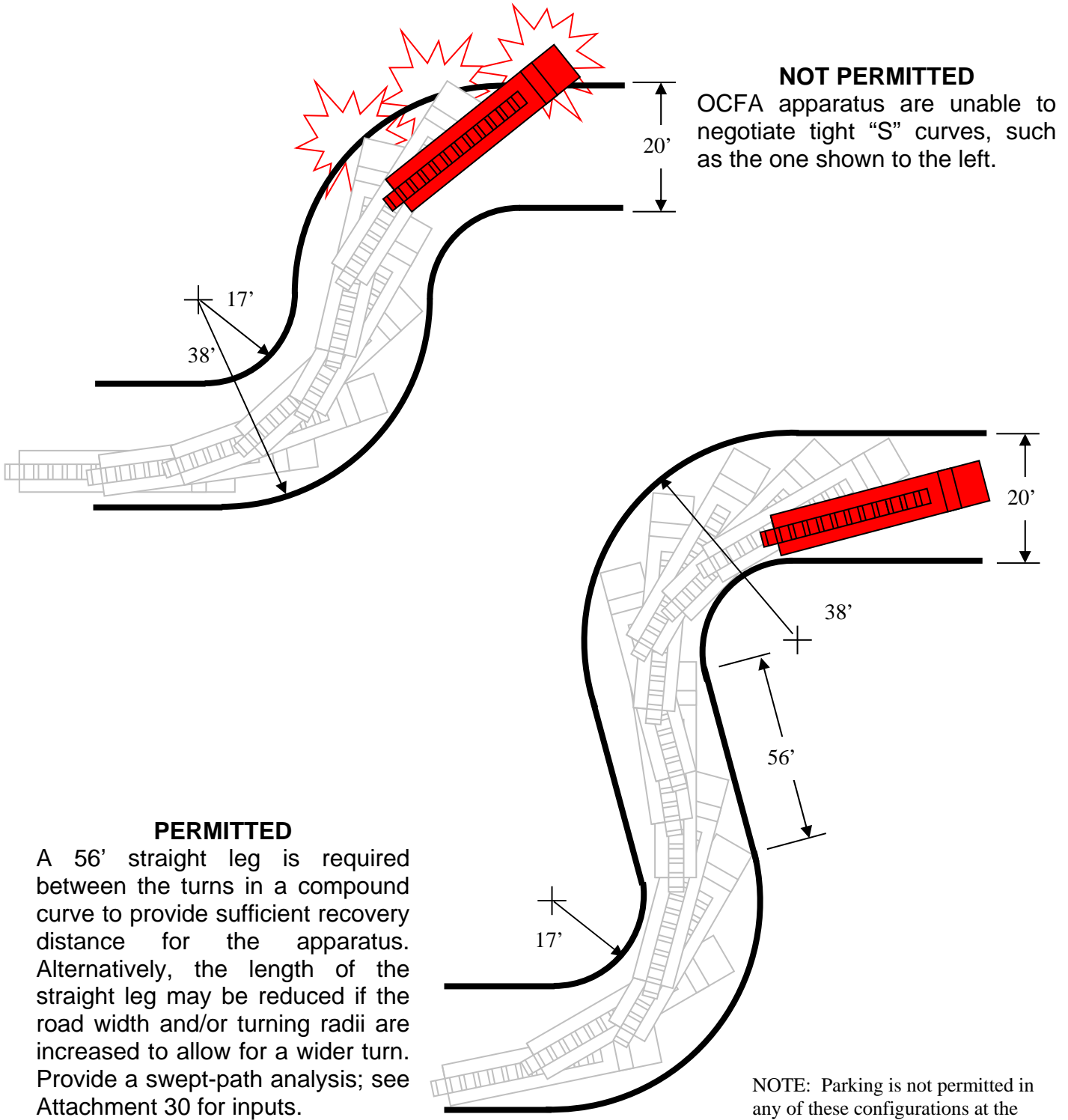


INSUFFICIENT CLEARANCE

A 20'-wide roadway has been provided, but eaves and vegetation effectively reduce the clear dimensions below required minimums.

ATTACHMENT 6

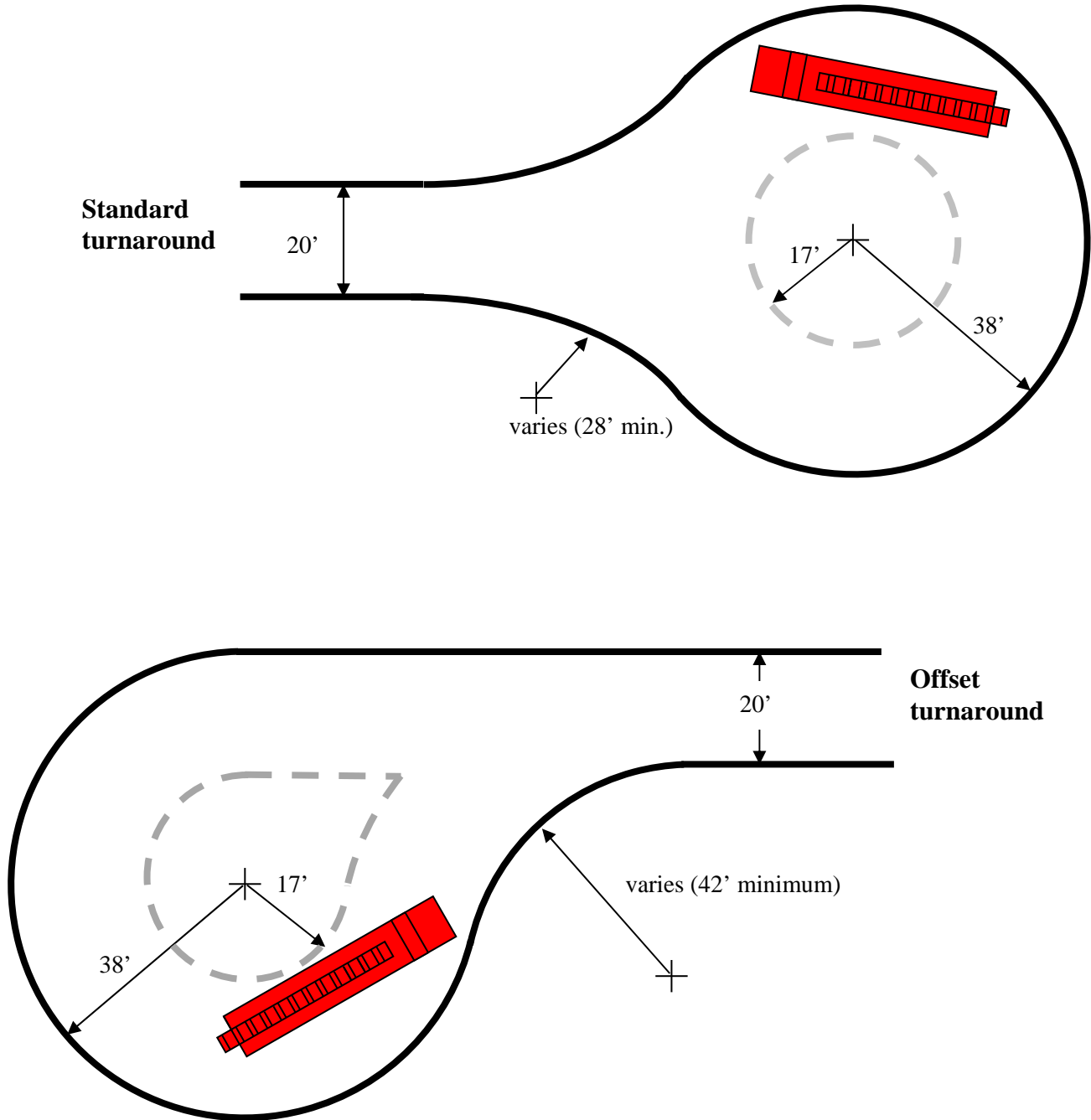
"S" Curves



Drawings not to scale; for illustration purposes only.

ATTACHMENT 7

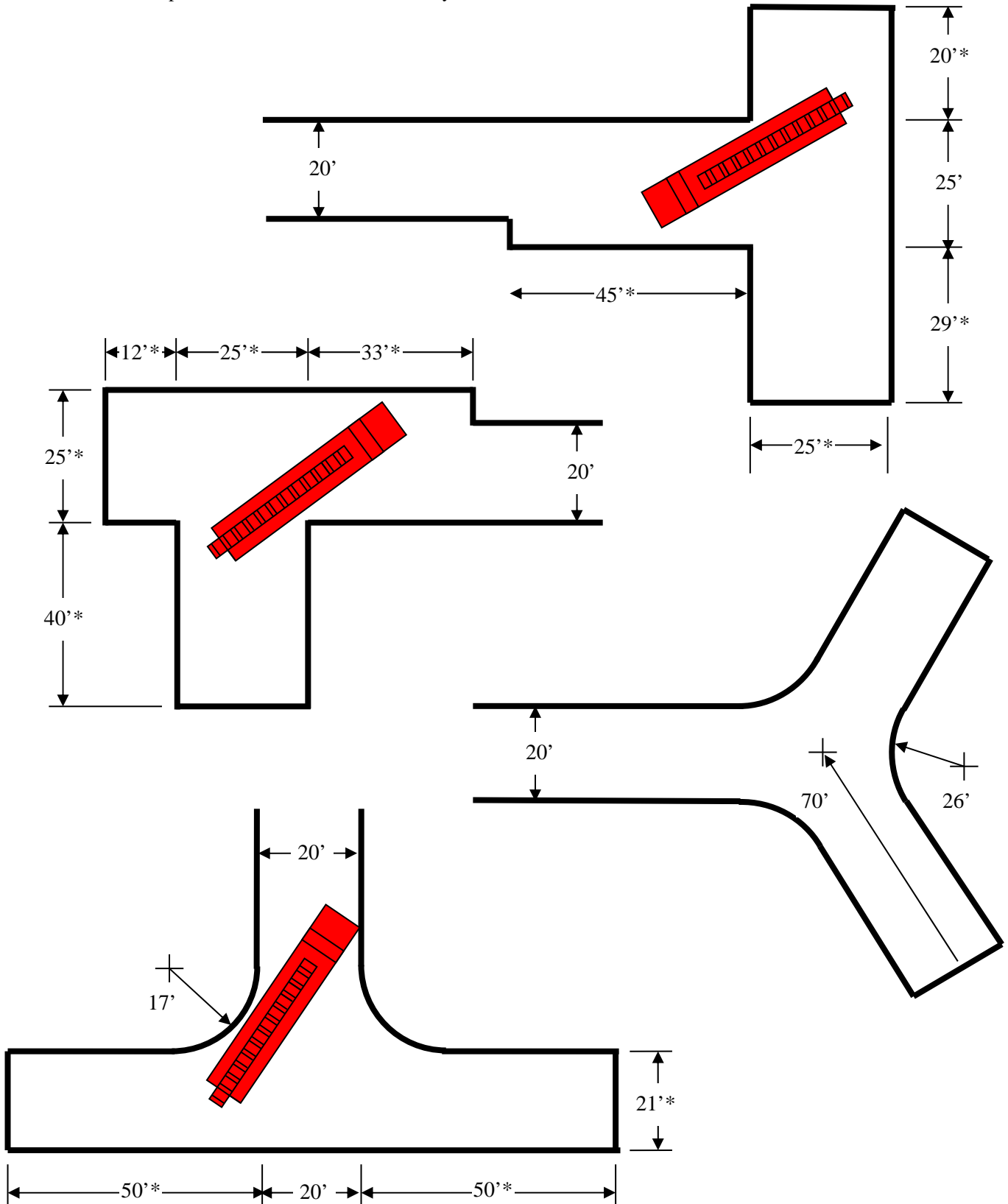
Minimum Turnaround and Hammerhead Dimensions



NOTE: Parking is not permitted in these turnarounds at the dimensions shown. Islands or other obstructions may be allowed to be located within the area bounded by the dashed line representing the inner turning radius.

NOTE: Parking is not permitted in any of these hammerheads at the dimensions shown.

* Wherever possible, increase this dimension by five feet.



ATTACHMENT 8

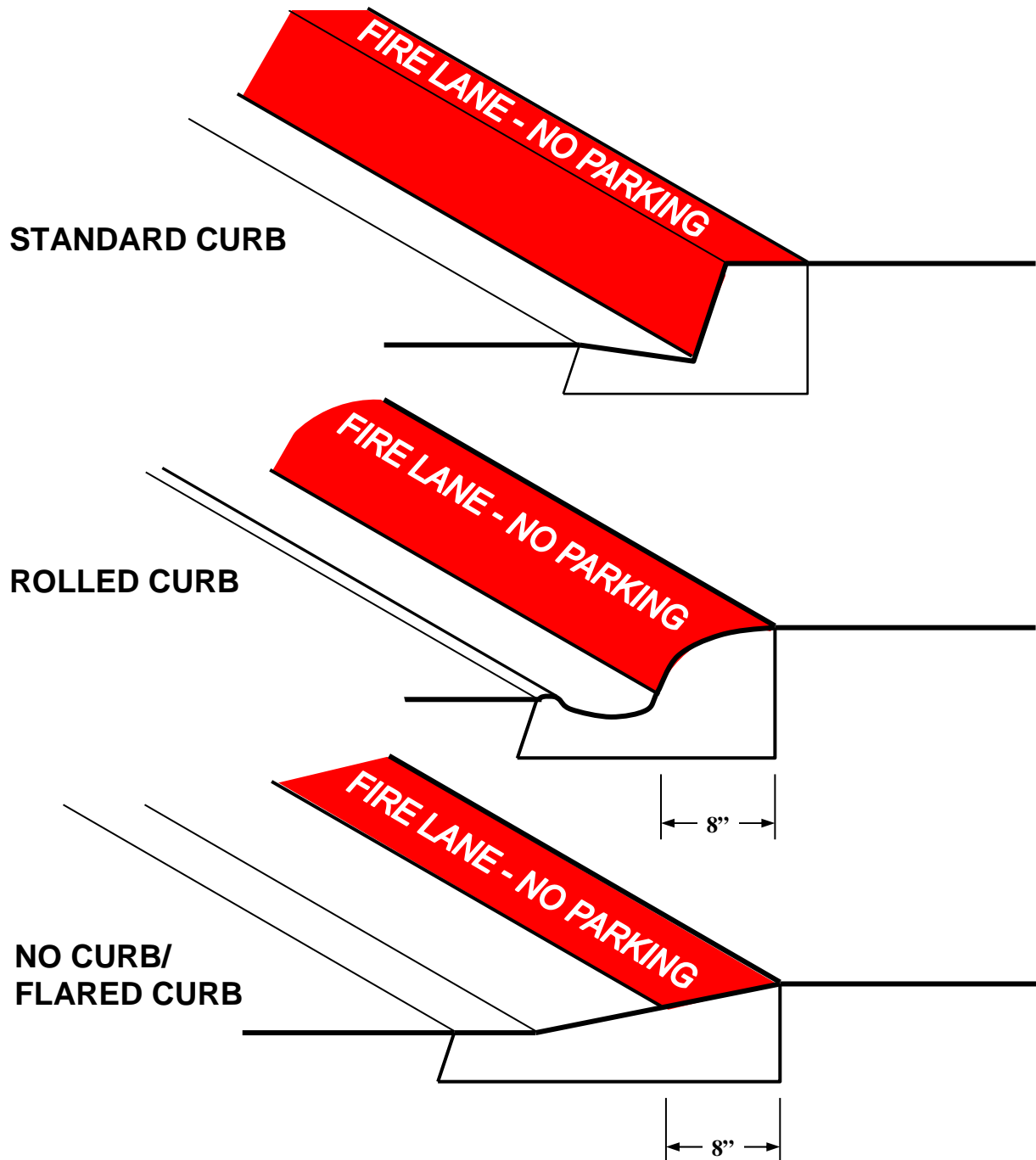
Fire Lane Parking Violations

The California Fire Code (CFC) and California Vehicle Code (CVC) specify rules of the road for stopping, standing, and parking in fire lanes or near fire hydrants.

- A. Section 22500.1 states that no person shall stop, park, or leave standing any vehicle whether attended or unattended, in any location designated as a fire lane by the Fire Authority except when necessary to avoid conflict with other traffic or in compliance with the direction of a peace officer or official traffic control device. Vehicles illegally parked in a fire lane may be towed per CVC 22953(b).
- B. There shall be no parking of any vehicles other than fire department vehicles within 15 feet of either side of a fire hydrant in accordance with CVC 22514(c). Such vehicles may be towed per CVC 22651(e).
- C. CVC 22658(a) permits the owner or person in lawful possession of any private property, subsequent to notifying local law enforcement, to cause the removal of a vehicle parked on such property to the nearest public garage, if:
 - 1) A sign is displayed in plain view at all entrances to the property specifying:
 - a) The ordinance prohibiting public parking, *and*
 - b) A notation indicating that vehicles will be removed at the owner's expense, *and*
 - c) The telephone number of the local traffic law enforcement agency, *or*
 - 2) The lot or parcel upon which the vehicle is parked has a single-family dwelling.
- D. CFC 503.4 states that the required width of a fire apparatus access road shall not be obstructed in any manner, including parking of vehicles. Minimum required widths and clearances shall be maintained at all times.
- E. CFC 507.5.4 states that vehicles and other obstructions shall not be placed or kept near fire hydrants, fire department inlet connections or fire-protection system control valves in a manner that would prevent such equipment or fire hydrants from being immediately discernible. The fire department shall not be deterred or hindered from gaining immediate access to fire-protection equipment or hydrants.

ATTACHMENT 9

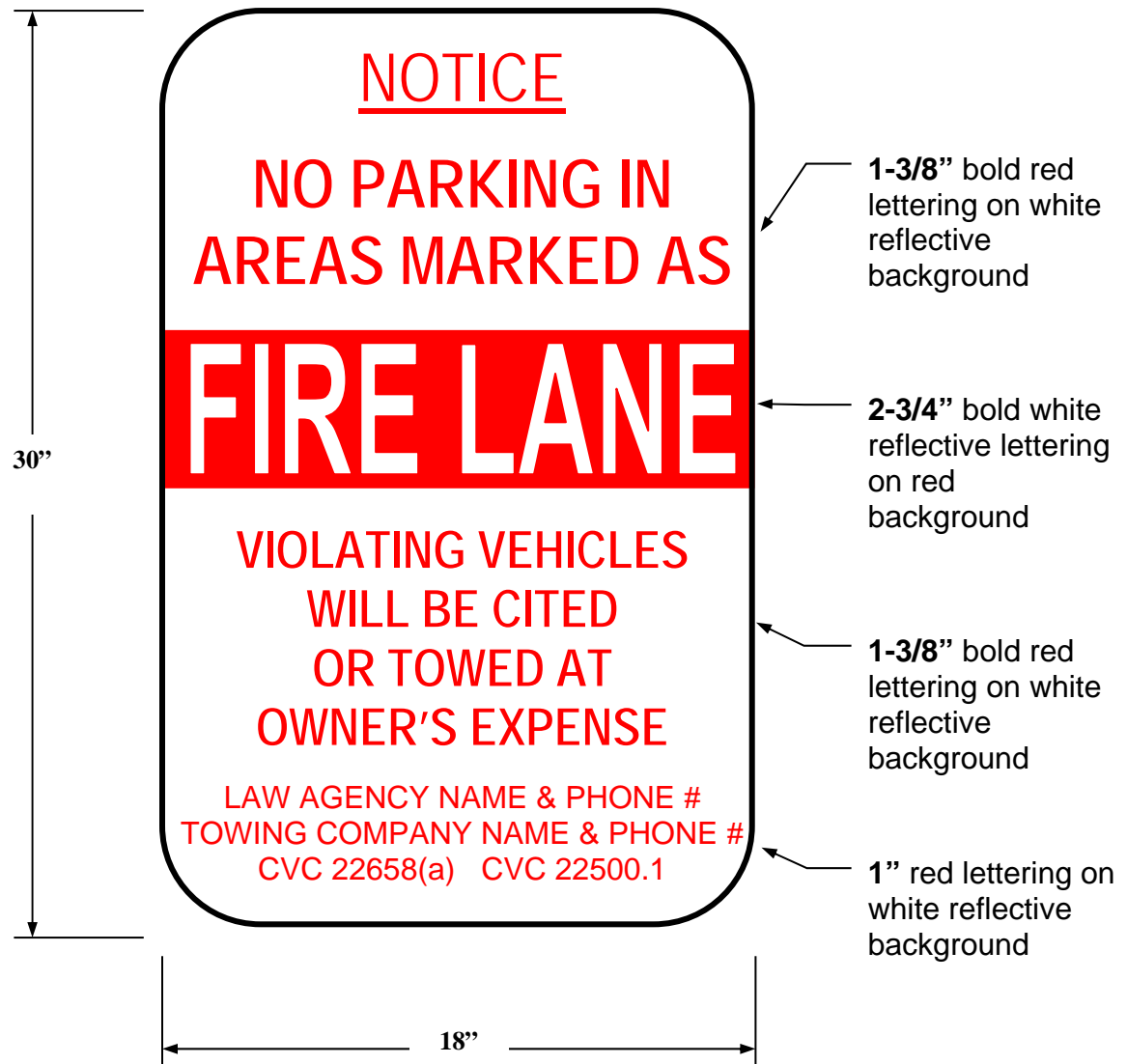
Fire Lane Identification – Red Curbs



1. Fire lane entrance sign(s) shall also be provided per Attachment 10 or 11.
2. Curbs shall be painted OSHA safety red.
3. "FIRE LANE – NO PARKING" shall be painted on top of curb in 3" white lettering at a spacing of 30' on center or portion thereof.

ATTACHMENT 10

**Specifications for
Fire Lane Entrance Signs**
To be used only at *vehicle entry points*
to areas that contain “Fire Lane—No Parking” signs or red curbs



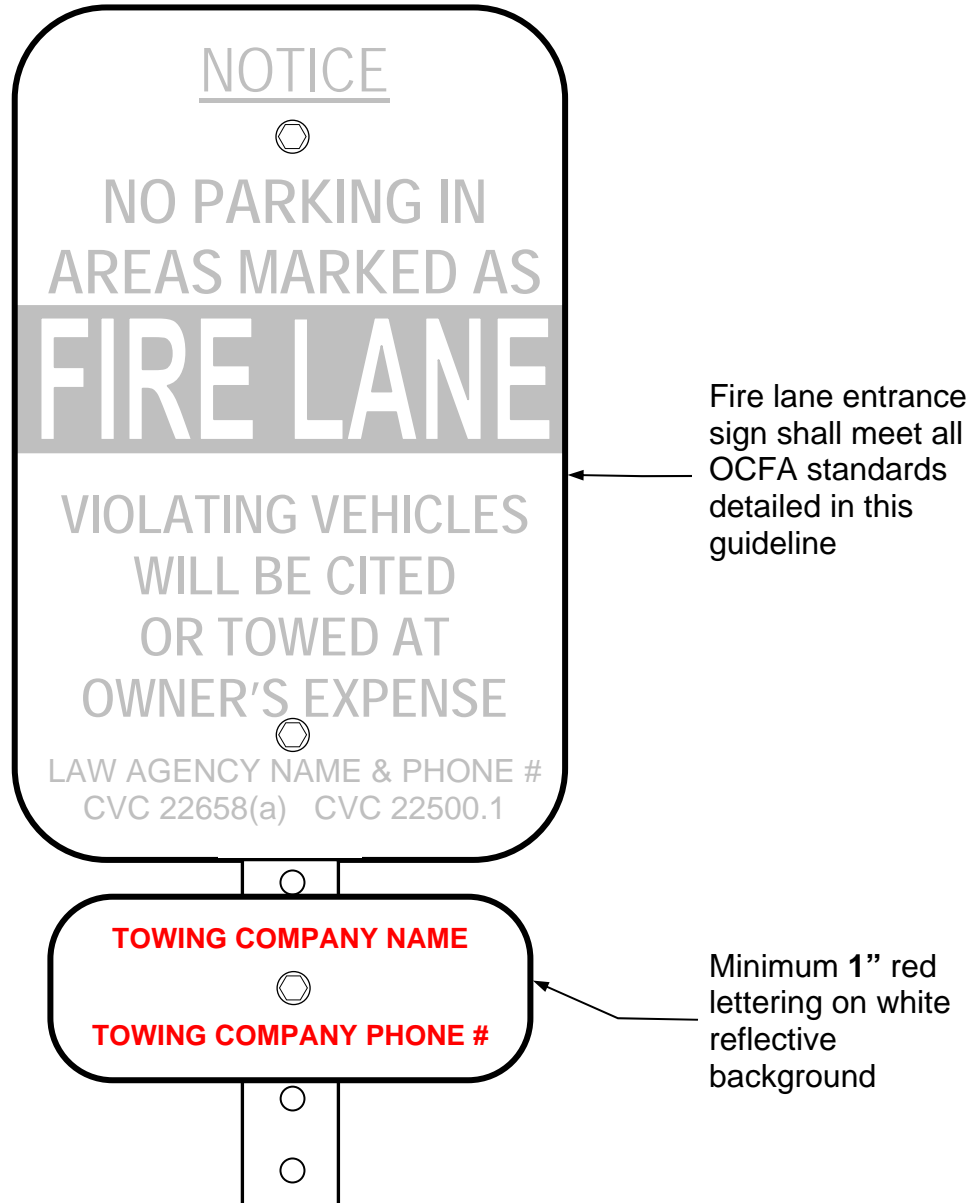
All sign and lettering dimensions shown are minimums. “Arial Narrow” font is used in sample above though other legible sans-serif fonts may be acceptable.

This sign shall be posted at all vehicle entrances to areas marked with either red curbs or fire lane “No Parking” signs. Signs shall be securely mounted facing the direction of travel and clearly visible to oncoming traffic entering the designated area. Signs shall be made of durable material and installed per Attachments 13 and 14.

Towing company contact information is required for all properties with a standing written agreement for services with a towing company per the California Vehicle Code.

ATTACHMENT 11

Specifications for Alternate Location of Towing Company Information



Towing company contact information is required for all properties with a standing written agreement for services with a towing company per the California Vehicle Code.

To facilitate periodic changes in towing company contracts, the towing company contact information may be posted on a separate sign mounted directly below the fire lane entrance sign instead of on the entrance sign itself. The method of attachment to the post shall not obscure the wording on either sign.

ATTACHMENT 12

Specifications for Fire Lane No Parking Signs



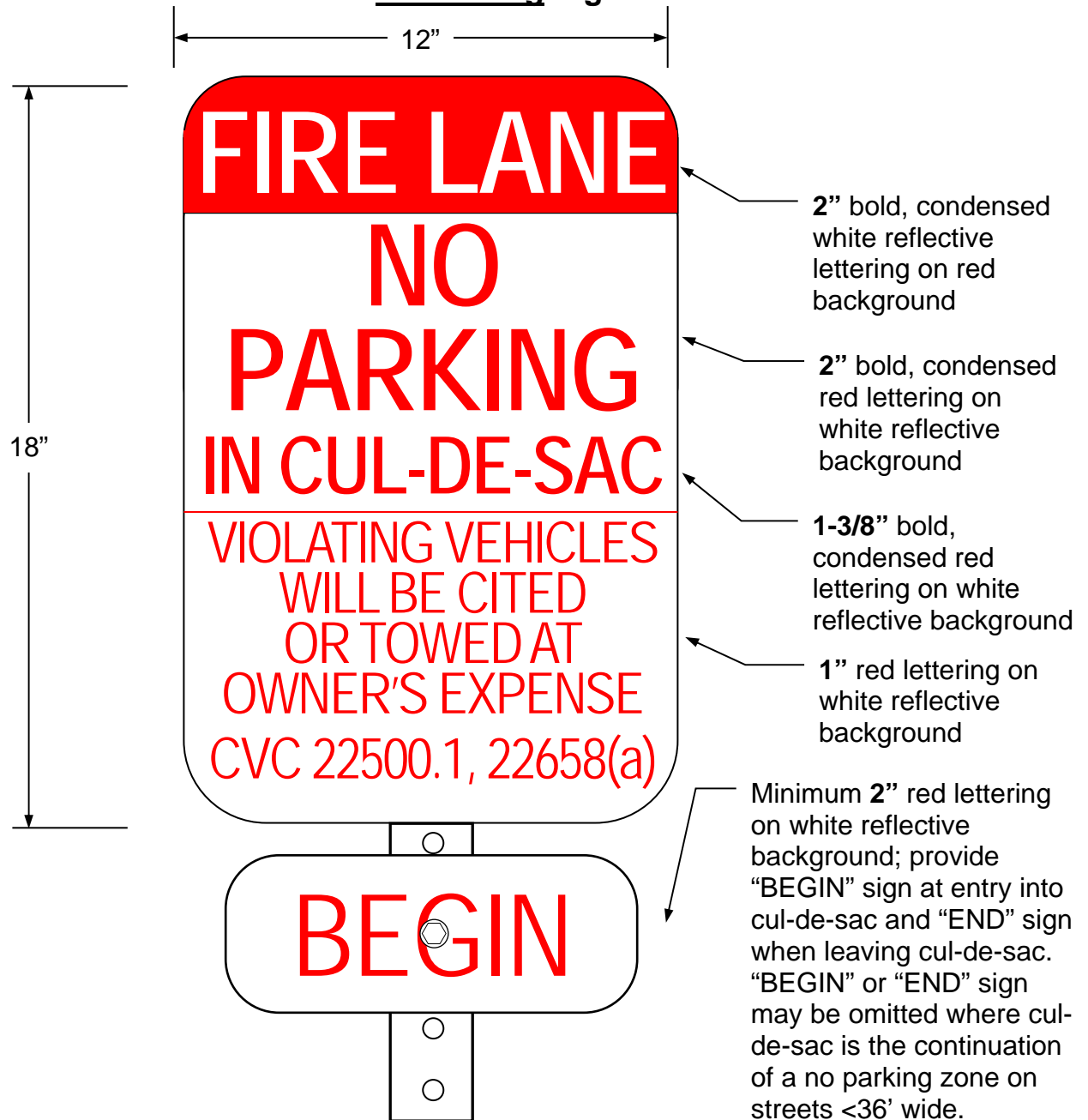
All sign and lettering dimensions shown are *minimums*. "Arial Narrow" font is used in sample above though other legible sans-serif fonts may be acceptable.

In areas where fire lane parking restrictions are enforced by the California Highway Patrol, "NO STOPPING—FIRE LANE" signs meeting Caltrans standards shall be used.

Signs shall be securely mounted facing the direction of travel and clearly visible to oncoming traffic entering the designated area. Signs shall be made of durable material and installed per Attachments 13 and 14.

ATTACHMENT 12a

Specifications for Cul-de-Sac Fire Lane No Parking Signs



All sign and lettering dimensions shown are *minimums*. "Arial Narrow" font is used in sample above though other legible sans-serif fonts may be acceptable.

Signs shall be securely mounted facing the direction of travel and clearly visible to oncoming traffic entering the designated area. Signs shall be made of durable material and installed per Attachments 13 and 14.

ATTACHMENT 12b

Specifications for Alternative Fire Lane No Parking Signs



Additional verbiage shall be **1" bold**, condensed red lettering on white reflective background. Where parking stalls are not present, sign may omit "except in designated stalls" and sign height may be reduced to 18".

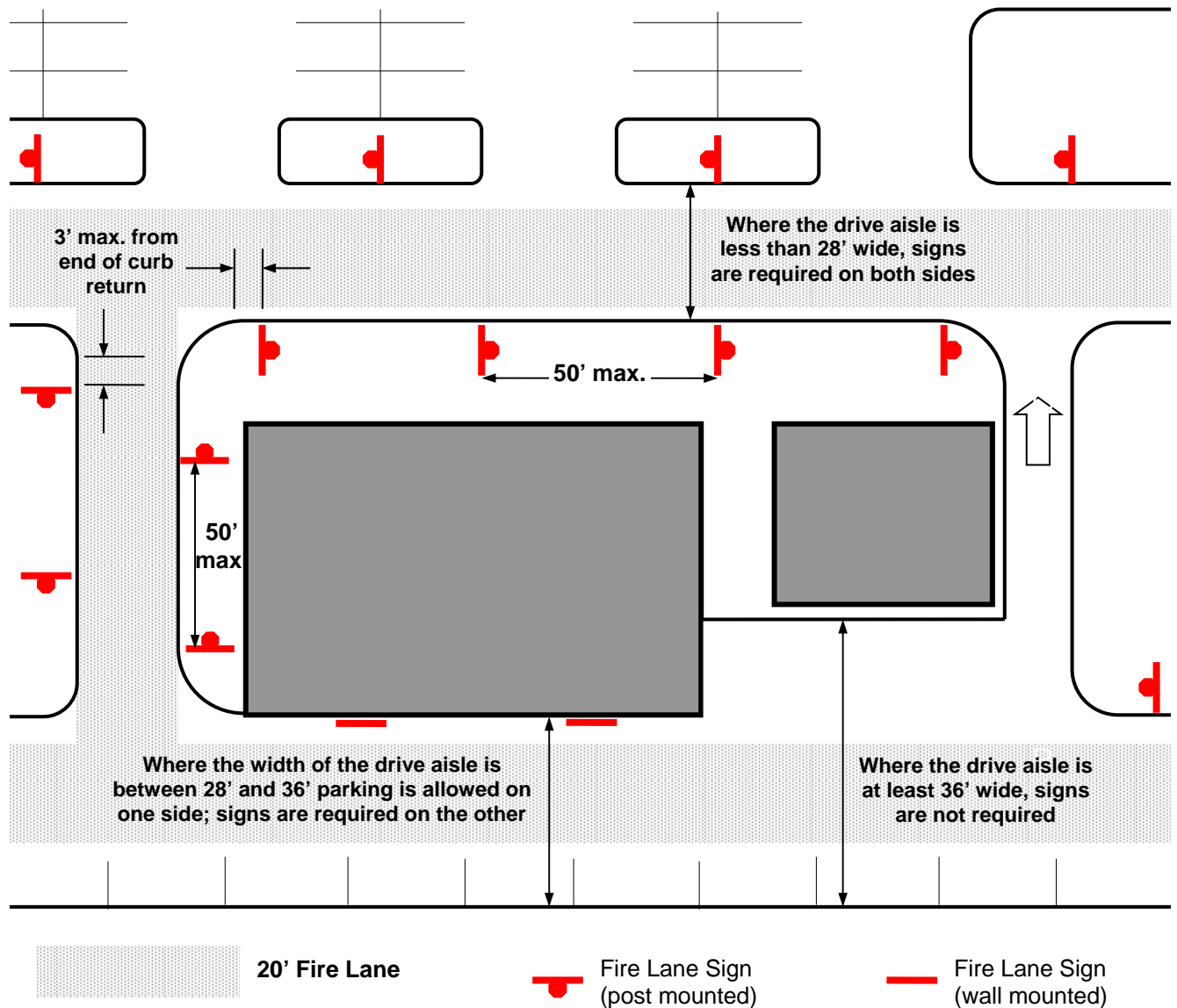
Specifications for the rest of the sign shall match those of standard fire lane no parking signs.

All sign and lettering dimensions shown are *minimums*. "Arial Narrow" font used is used in sample above though other legible sans-serif fonts may be acceptable.

Signs shall be securely mounted facing the direction of travel and clearly visible to oncoming traffic entering the designated area. Signs shall be made of durable material and installed per Attachments 13 and 14.

ATTACHMENT 13

Fire Lane No Parking Sign Locations

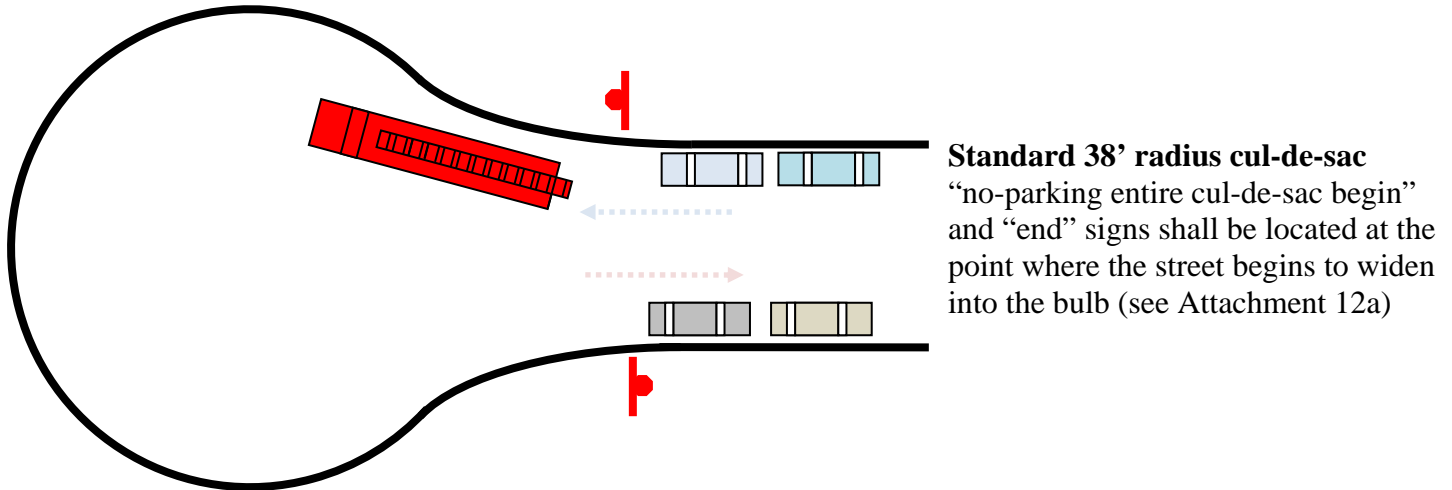


Signs are required within 3' of the end of the curb return at the beginning of each "block" along the fire lane and spaced a maximum of 50' along the entire designated lane. A sign shall be located within a reasonable distance of the end of each block as necessary to clearly identify the extent of the no parking zone. One sign is required for each island adjacent to the fire lane that is large enough to accommodate a parked car.

Signs shall be securely mounted facing the direction of travel and clearly visible to oncoming traffic entering the designated area. Signs shall be made of durable material and installed per Attachment 14. Where sign posts are not practical, signs may be mounted on a wall or fence and are allowed to be oriented perpendicular to the length of the fire lane. OCFA inspectors will determine if additional signs or sign locations are required.

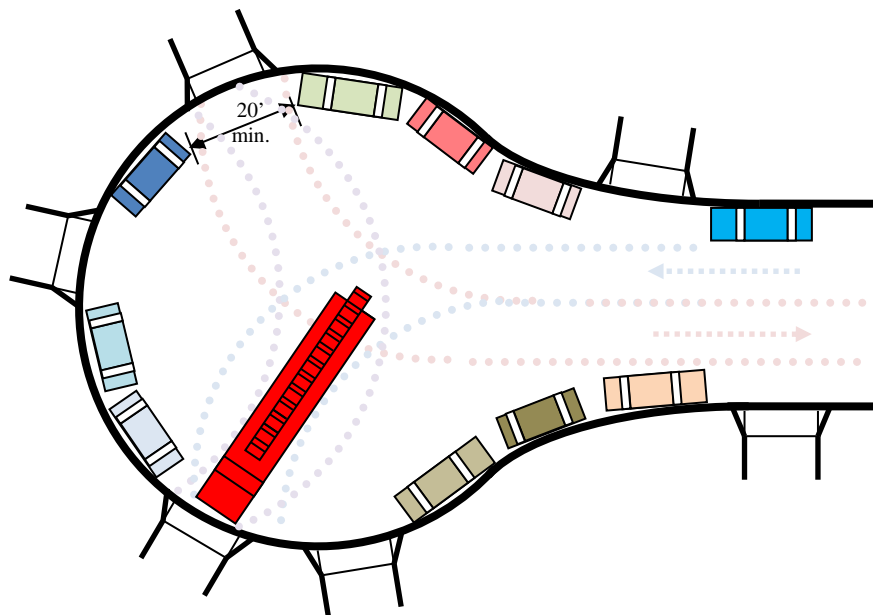
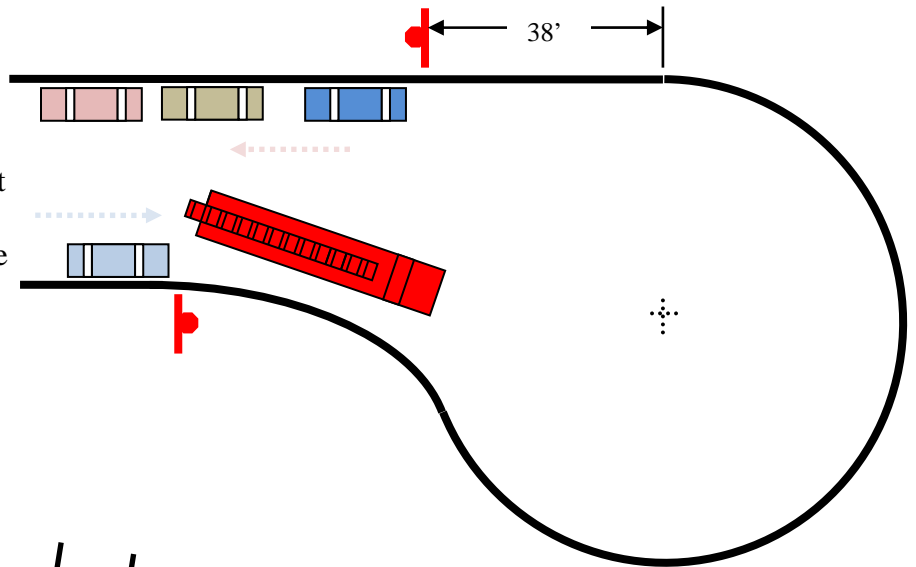
ATTACHMENT 13a

Fire Lane No Parking Sign Locations for Cul-de-sacs



Standard 38' radius cul-de-sac
“no-parking entire cul-de-sac begin” and “end” signs shall be located at the point where the street begins to widen into the bulb (see Attachment 12a)

Offset 38' radius cul-de-sac: “no-parking entire cul-de-sac begin” and “end” signs shall be located at the point where the street begins to widen into the bulb and at a point 38' from where the cul-de-sac and street are tangent (see Attachment 12a)

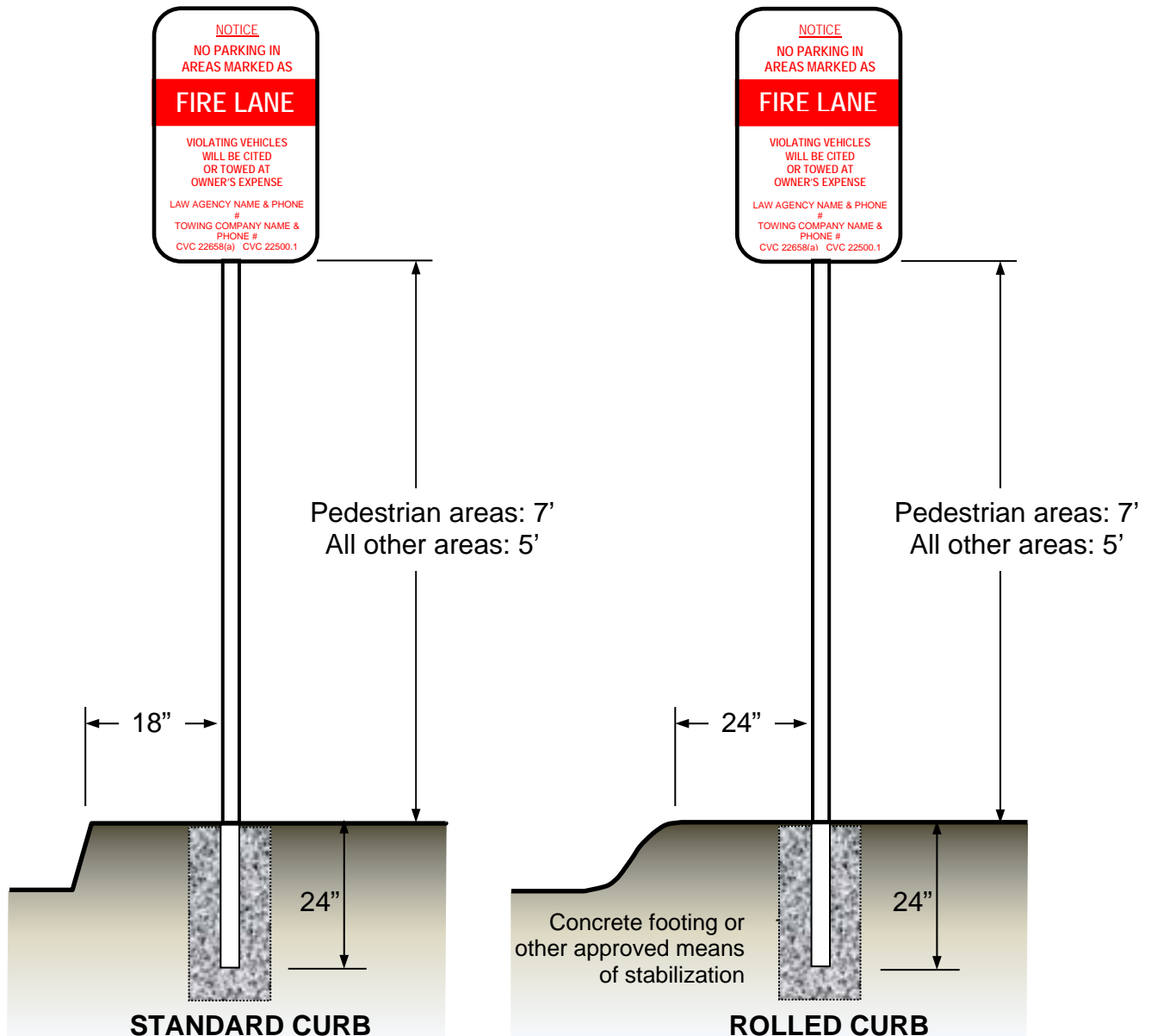


Where size and placement of driveways ensure sufficient space is available to execute a three-point turn, no-parking signs are unnecessary.

*Drawing
not to scale*

ATTACHMENT 14

Mounting Specifications for Fire Lane Entrance and No Parking Signs



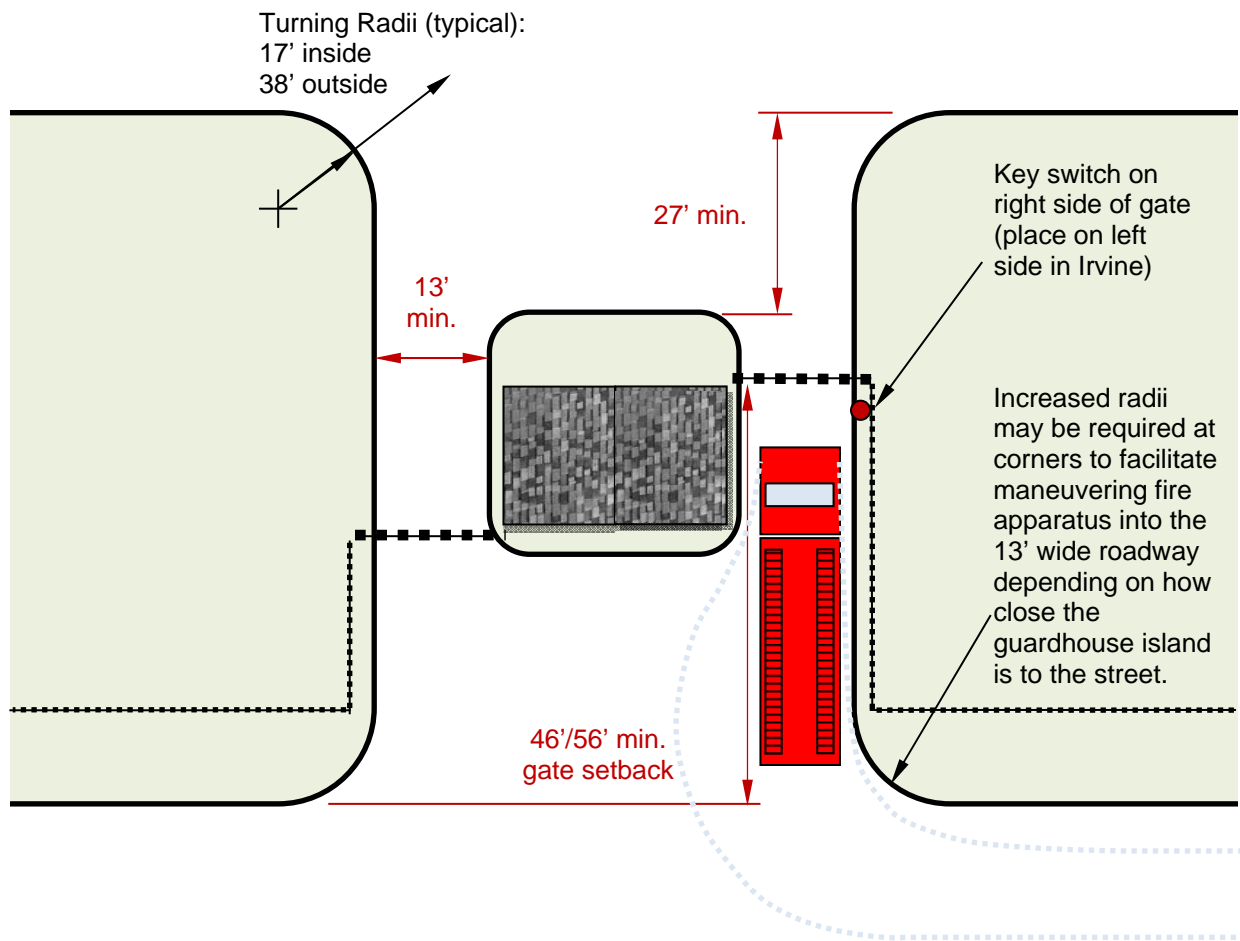
Signs shall be mounted facing the direction of vehicular travel.

Signs may be mounted on existing posts or buildings where the centerline of the sign is no more than 24" from the edge of the roadway.

Depth of bury shall be a *minimum* of 24" and rebar, a concrete footing, or another method to prevent removal of the sign is recommended. Footings for signs located in the public right-of-way shall be per the local jurisdiction's requirements.

ATTACHMENT 15

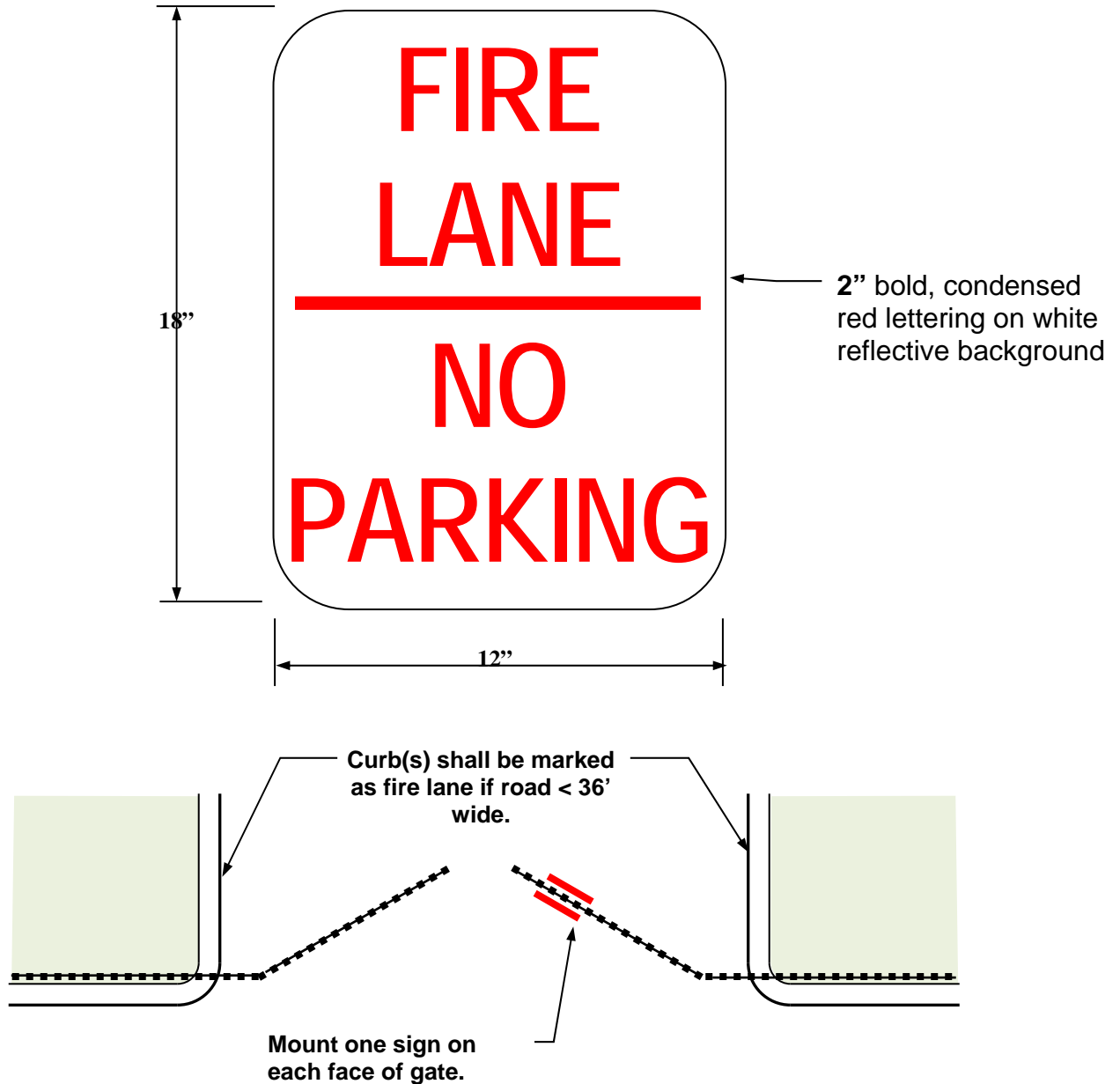
Minimum Gate Setbacks



*Drawing
not to scale*

ATTACHMENT 16

Specifications for “Fire Lane - No Parking” Signs for Manually Operated Gates and Barriers



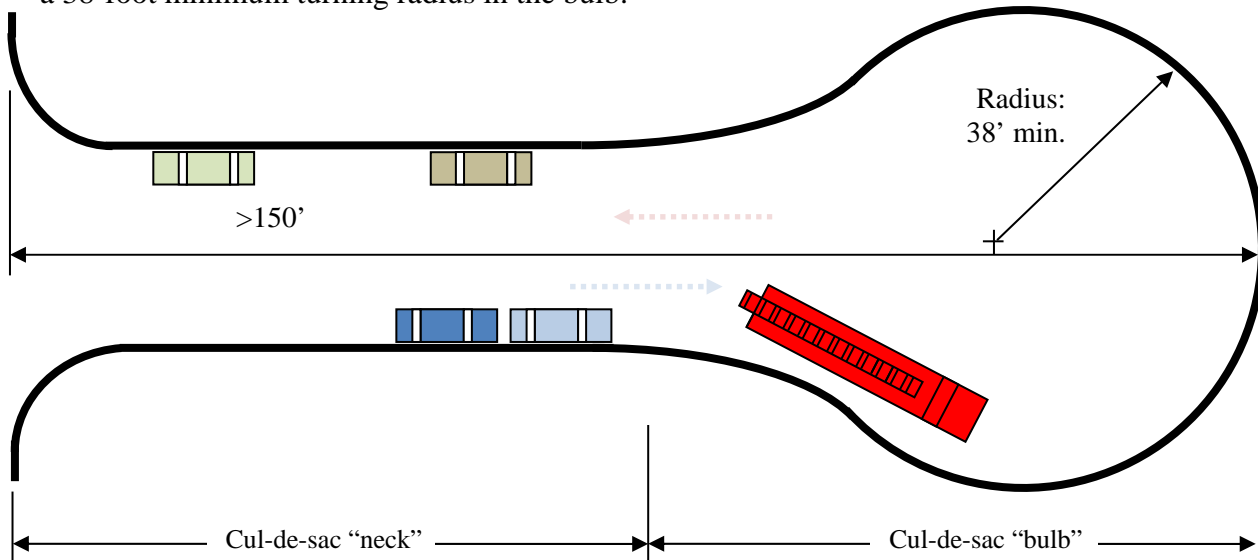
All sign and lettering dimensions shown are minimums. “Arial Narrow” font used is used in sample above though other legible sans-serif fonts may be acceptable.

“Fire Lane—No Parking” sign shown in Attachment 12 may be used as an alternative. Signs shall be securely mounted on the front and back face of the gate clearly visible to traffic entering the designated area. Signs shall be made of a durable material.

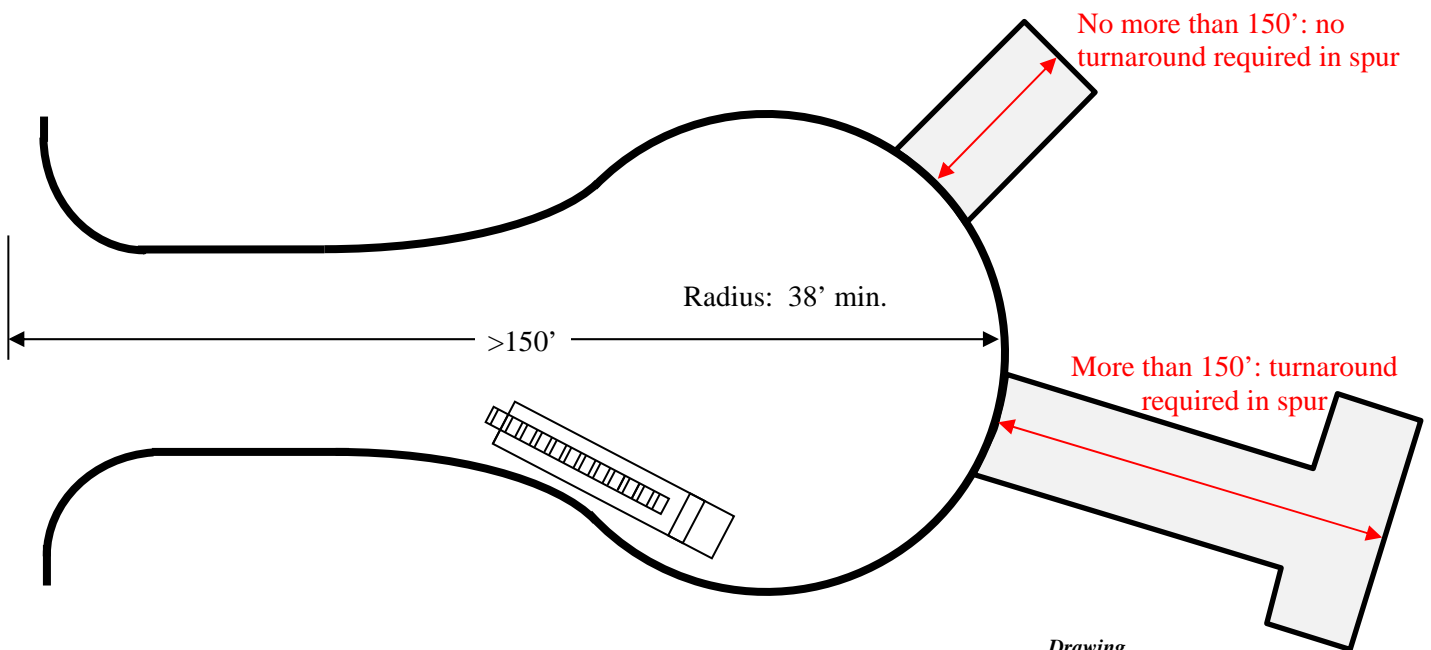
ATTACHMENT 17

Cul-de-sacs and Dead-end Roadways

- 1) Cul-de-sac streets greater than 150 feet in length that are required fire lanes shall be provided with a 38-foot minimum turning radius in the bulb.



- 2) Where a spur road or private driveway that is a required fire lane is accessed via the cul-de-sac road, the driveway or spur shall be no more than 150' in length unless an approved turnaround has been provided within 150' of the end of the spur or driveway.



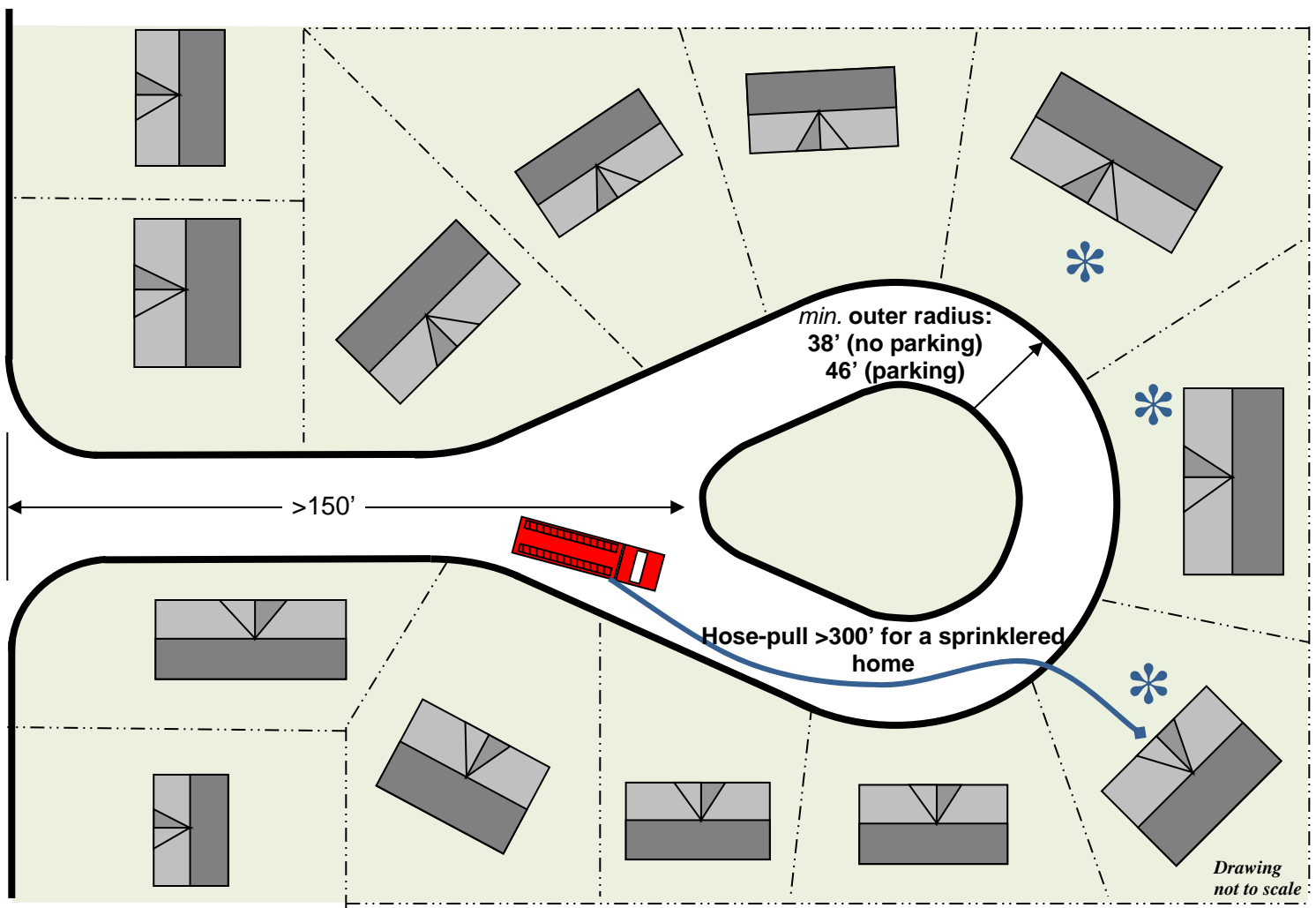
Drawing not to scale

ATTACHMENT 18

Cul-de-sacs Longer than 150' with Islands

Cul-de-sac streets greater than 150 feet in length may contain a center island provided that:

- 1) A *minimum* 28-foot-wide drive lane with an adequate inside turning radius is provided, and
- 2) The island is designated a no parking area with red curbs or signs, and
- 3) Island landscaping will not intrude into the drive lane, and
- 4) An NFPA 13-D sprinkler system with full protection of the attic space(s) is installed in the homes where hose-pull requirements can only be satisfied by taking access from the drive lane beyond the beginning of the island.

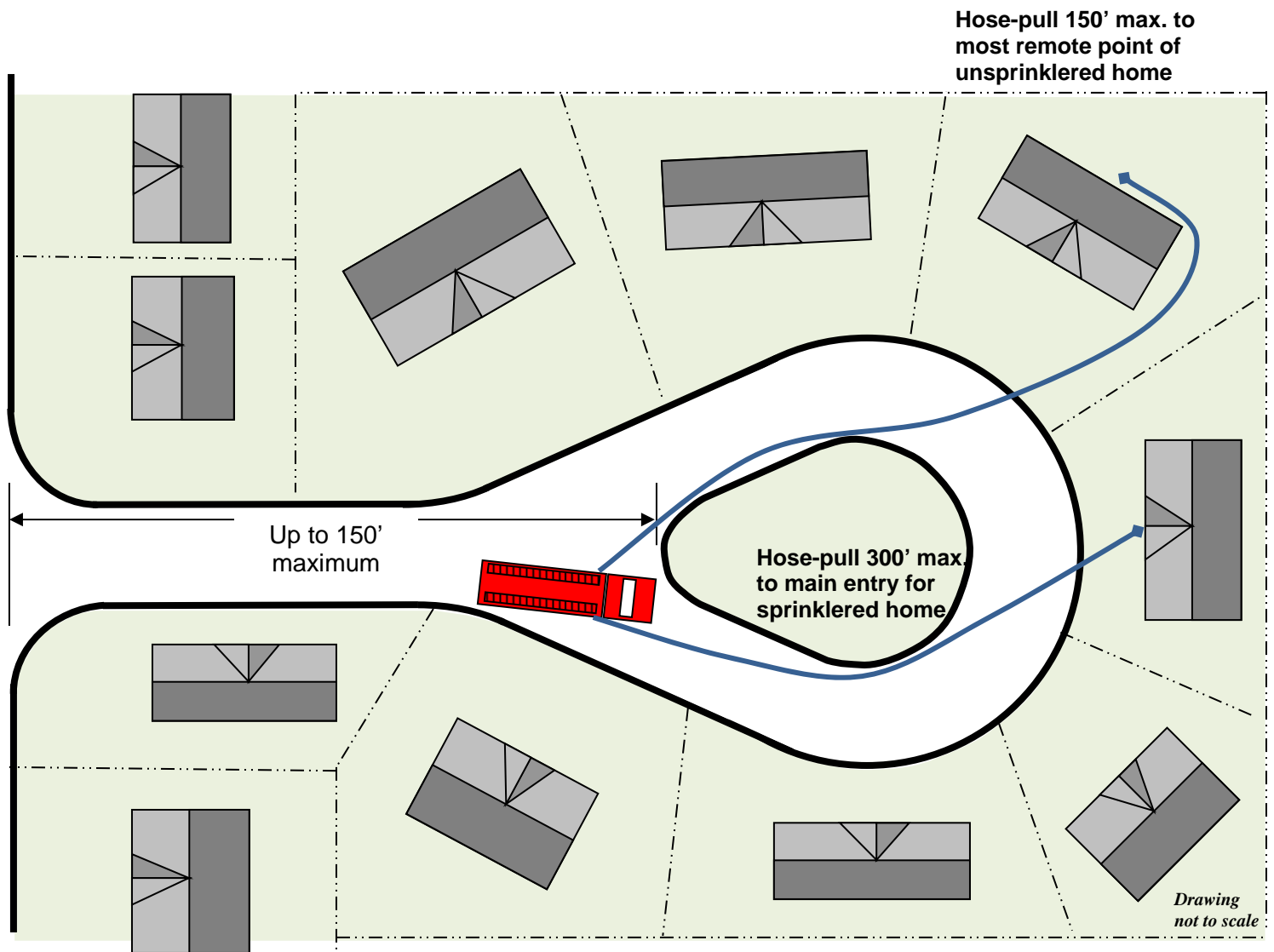


- * Attic protection required where hose-pull distance from the portion of the cul-de-sac preceding the island to the front entry of a sprinklered home exceeds 300'. For existing unsprinklered homes, hose pull may not exceed 150' to the most remote point around the perimeter of the home or sprinklers with attic protection will be required.

ATTACHMENT 19

Cul-de-sacs up to 150' with Islands

Access to the homes will be measured along an approved route around the island and any other obstructions in the path of travel from the point where the island begins to impede fire apparatus. If hose-pull to the main entry of a sprinklered home exceeds 300' (or 150' to the most remote point around the perimeter for unsprinklered homes), the portion of the bulb beyond the island shall be designed as a fire lane or other mitigating features shall be provided. If all homes are in access from the area preceding the island, the portion of the bulb beyond the island is not required to comply with OCFA fire access roadway requirements. The neck and portion of the bulb preceding the island shall meet all other fire lane requirements prescribed in this guideline if it is a required fire lane.

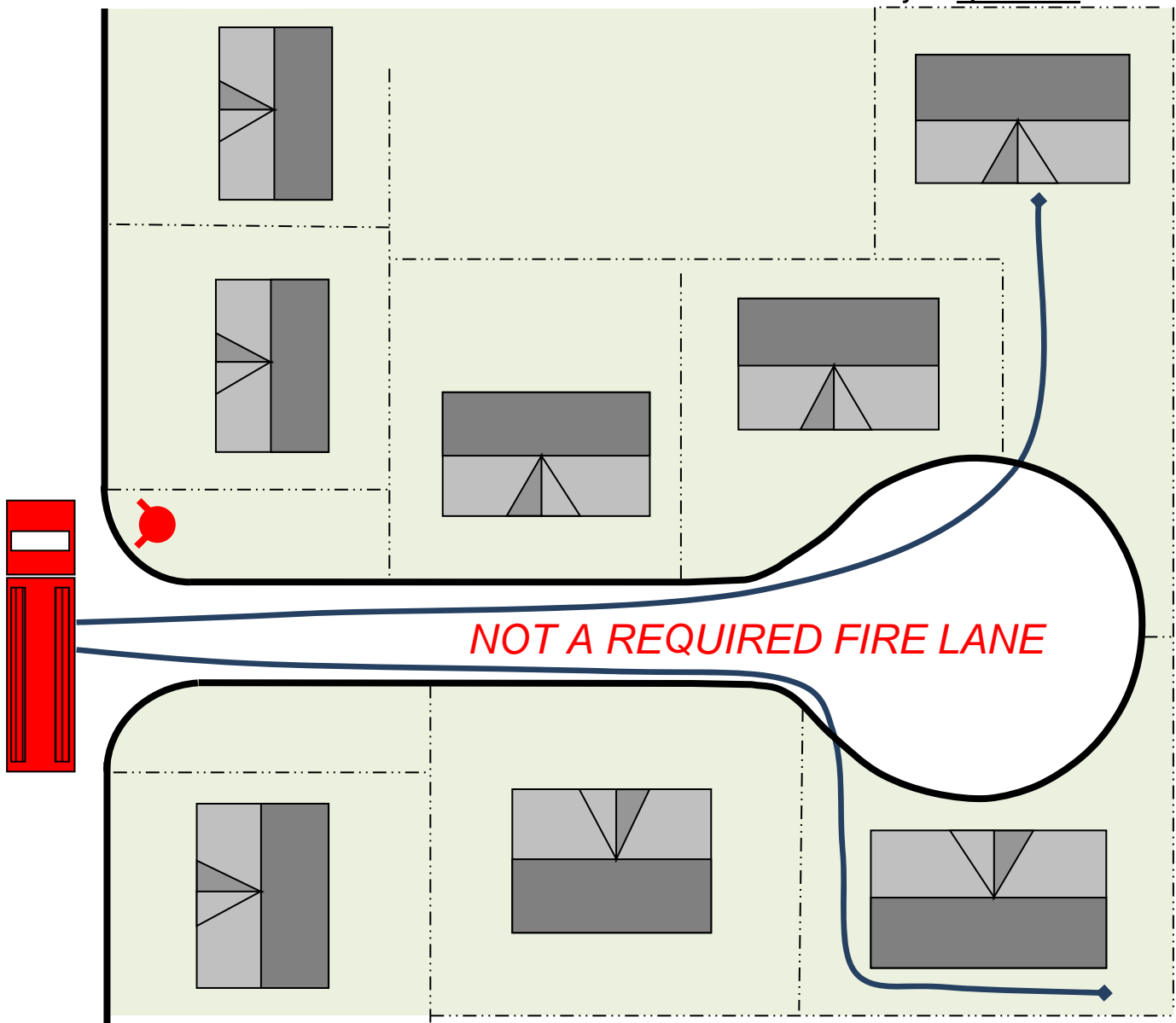


ATTACHMENT 20

Short Cul-de-sacs and Dead-end Roads

If hose-pull distance can be satisfied without fire apparatus entering the cul-de-sac or dead-end road, and the road is not otherwise required to be a fire lane as determined by the fire code official, the street is not required to have a bulb or hammerhead with minimum OCFA turning radii or meet other standard fire lane requirements.

Hose-pull 300' max. to main entry for sprinklered homes



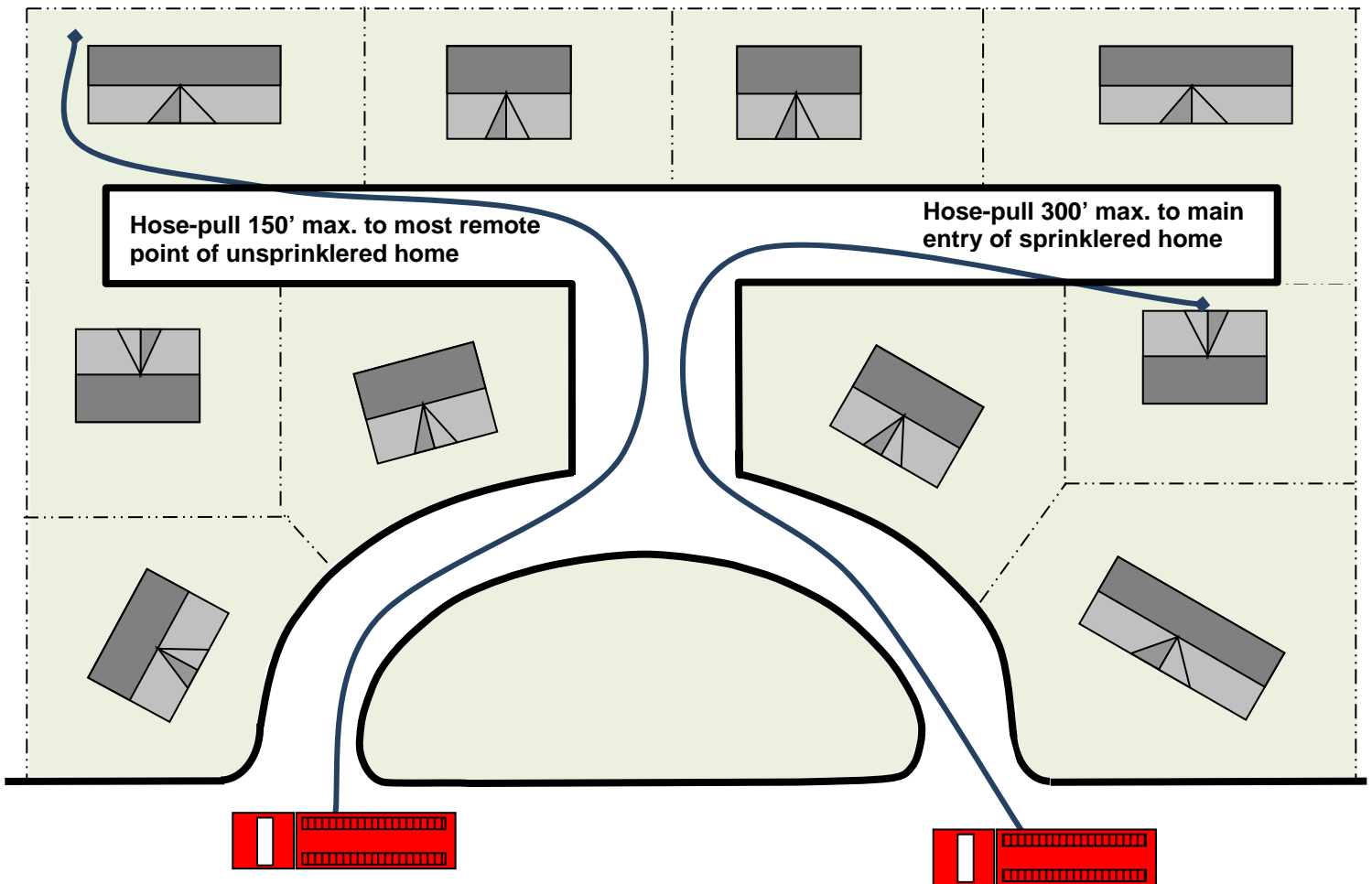
Hose-pull 150' max. to most remote point of unsprinklered homes

Drawing not to scale

ATTACHMENT 21

Eyebrows

If the eyebrow does not meet OCFA's minimum turning radius and width requirements, fire department access will be measured from the nearest available fire lane around the island and any other obstructions. If hose-pull to the main entry of a sprinklered home exceeds 300' (or 150' to the most remote point around the perimeter for unsprinklered homes), the eyebrow shall be designed as a fire lane or other mitigating features shall be provided.



*Drawing
not to scale*

ATTACHMENT 22

Sample Parking Enforcement Letter

Date

Planning and Development Services Section
Orange County Fire Authority
1 Fire Authority Road
Irvine, CA. 92602

Re: *(Project Name, Location, and Service Request Number)*
Parking Enforcement Plan

The fire lane parking enforcement plan for the above referenced project is stated as follows:

All fire lanes within *(list development address or tract information)* shall be maintained and in no event shall parking be permitted along any portion of a street or drive that required fire lanes or any area designated as a fire lane for turn-around purposes either during construction or after occupancy.

(Association name) shall adopt reasonable rules and regulations regarding the parking of vehicles along the streets, roads and or drives within the project that are not in conflict with applicable law.

In furtherance thereof, *(Association name)*, through its officers, committees and agents, will establish the “parking” and “no parking” areas within the property in accordance with Section 22658 of the California Vehicle Code and OCFA Guideline B-09. The law shall be enforced through such rules and regulations by all lawful means, including, written warnings, citing, levying fines and towing vehicles in violation.

(Association name) will contract with a certified patrol and towing company to remove vehicles that violate no parking restrictions. First time violators will receive a written warning and with subsequent violations, the vehicle shall be subject to towing. The vehicle owner shall be responsible for all costs incurred in remedying such violation, including without limitation towing cost, citations and legal fees.

Company Name
Authorized Agent Signature

Cc:

ATTACHMENT 23

CFC TABLE B105.1(2): Minimum Required Fire Flow and Flow Duration for Buildings in OCFA Jurisdiction

FIRE FLOW CALCULATION AREA (square feet)					DETACHED SINGLE-FAMILY RESIDENCE/DUPLEX		OTHER BUILDINGS			
					FIRE FLOW (gallons per minute at 20 psi residual)		DURATION (hours)	FIRE FLOW (gallons per minute at 20 psi residual)		DURATION (hours)
Type IA/IB	Type IIA/IIIA	Type IV/VA	Type IIB/IIIB	Type VB	NS	S		NS	S	
0-22700	0-12700	0-8200	0-5900	0-3600	1000	1000	1	1500	1500	2
22701-30200	12701-17000	8201-10900	5901-7900	3601-4800	1750	1000	NS: 2 S: 1	1750	1500	
30201-38700	17001-21800	10901-12900	7901-9800	4801-6200	2000	1000		2000	1500	
38701-48300	21801-24200	12901-17400	9801-12600	6201-7700	2250	1125		2250	1500	
48301-59000	24201-33200	17401-21300	12601-15400	7701-9400	2500	1250		2500	1500	
59001-70900	33201-39700	21301-25500	15401-18400	9401-11300	2750	1375		2750	1500	
70901-83700	39701-47100	25501-30100	18401-21800	11301-13400	3000	1500	NS: 3 S: 1	3000	1500	3
83701-97700	47101-54900	30101-35200	21801-25900	13401-15600	3250	1625		3250	1625	
97701-112700	54901-63400	35201-40600	25901-29300	15601-18000	3500	1750		3500	1750	
112701-128700	63401-72400	40601-46400	29301-33500	18001-20600	3750	1875		3750	1875	
128701-145900	72401-82100	46401-52500	33501-37900	20601-23300	4000	2000	NS: 4 S: 1	4000	2000	4
145901-164200	82101-92400	52501-59100	37901-42700	23301-26300	4250	2125		4250	2125	
164201-183400	92401-103100	59101-66000	42701-47700	26301-29300	4500	2250		4500	2250	
183401-203700	103101-114600	66001-73300	47701-53000	29301-32600	4750	2375		4750	2375	
203701-225200	114601-126700	73301-81100	53001-58600	32601-36000	5000	2500		5000	2500	
225201-247700	126701-139400	81101-89200	58601-65400	36001-39600	5250	2625		5250	2625	
247701-271200	139401-152600	89201-97700	65401-70600	39601-43400	5500	2750		5500	2750	
271201-295900	152601-166500	97701-106500	70601-77000	43401-47400	5750	2875		5750	2875	
295901+	166501+	106501-115800	77001-83700	47401-51500	6000	3000		6000	3000	
		115801-125500	83701-90600	51501-55700	6250	3125		6250	3125	
		125501-135500	90601-97900	55701-60200	6500	3250		6500	3250	
		135501-145800	97901-106800	60201-64800	6750	3375		6750	3375	
		145801-156700	106801-113200	64801-69600	7000	3500		7000	3500	
		156701-167900	113201-121300	69601-74600	7250	3625	7250	3625		
		167901-179400	121301-129600	74601-79800	7500	3750	7500	3750		
		179401-191400	129601-138300	79801-85100	7750	3875	7750	3875		
		191401+	138301+	85101+	8000	4000	8000	4000		

S: Provided with an approved sprinkler system throughout the structure NS: No fire sprinklers or partially protected with a sprinkler system

ATTACHMENT 24

CFC TABLE C102.1: Hydrant Quantity and Spacing in OCFA Jurisdiction

DETACHED SINGLE FAMILY RESIDENCES/DUPLEXES *with* SPRINKLERS

Flow Requirement from Table B105.1(2)	Minimum Number of Hydrants	Maximum Distance to a Hydrant		Maximum Distance between Hydrants ¹		Average Distance between Hydrants ¹	
		Thru road	Dead-end	Thru road	Dead-end	Thru road	Dead-end
1000 - 1750	1	300	250	600	500	600	500
1751+	Use the table below						

ALL OTHER STRUCTURES

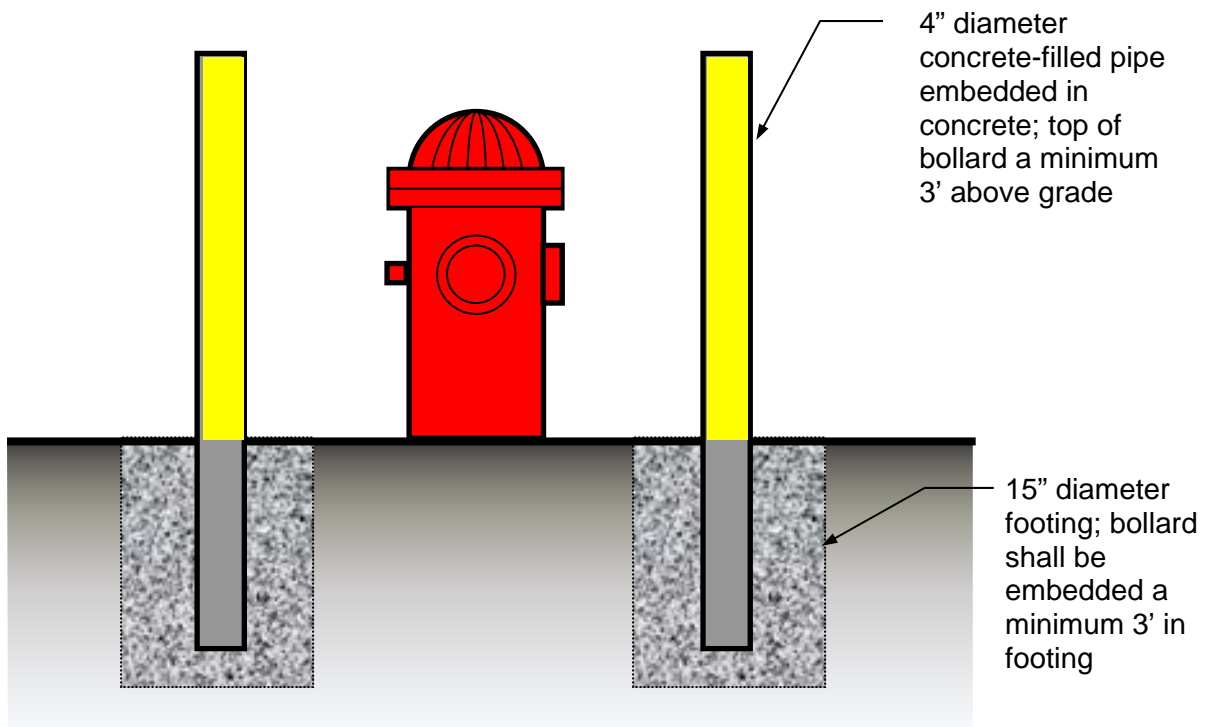
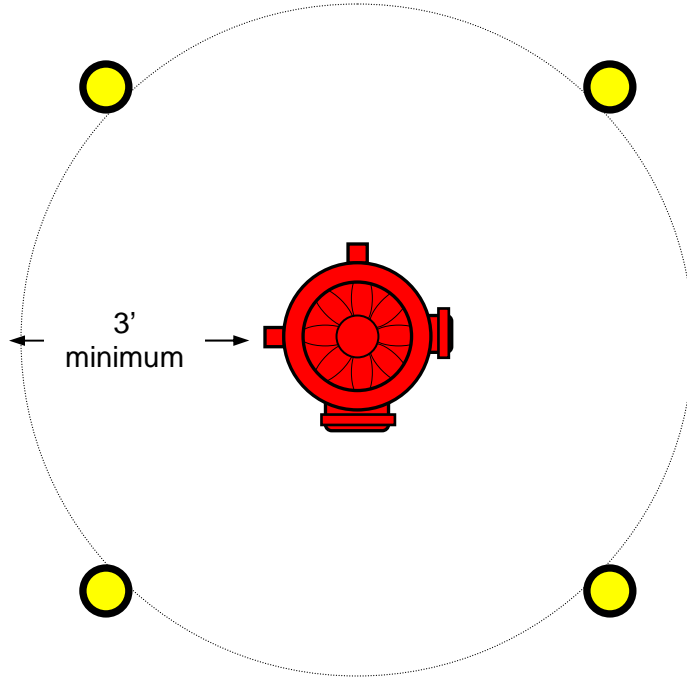
Flow Requirement from Table B105.1(2)	Minimum Number of Hydrants	Maximum Distance to a Hydrant		Maximum Distance between Hydrants ^{1,2}		Average Distance between Hydrants ^{1,2}	
		Thru road	Dead-end	Thru road	Dead-end	Thru road	Dead-end
1000 - 1750	1	250	200	500	400	500	400
1751 - 2250	2	225	175	450	350	450	350
2251 - 2500	3	225	175	450	350	450	350
2501 - 3000	3	225	175	450	350	400	300
3001 - 4000	4	210	160	420	320	350	250
4001 - 5000	5	180	130	360	260	300	200
5001 - 5500	6	180	130	360	260	300	200
5501 - 6000	6	150	100	300	200	250	150
6001 - 7000	7	150	100	300	200	250	150
7001+	1 per 1000 gpm or fraction thereof	120	70	240	140	200	100

All distances are in feet.

- ¹ Where streets are provided with median dividers which cannot be crossed by fire fighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet on each side of the street and be arranged on an alternating basis.
- ² Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet to provide for transportation hazards.

ATTACHMENT 25

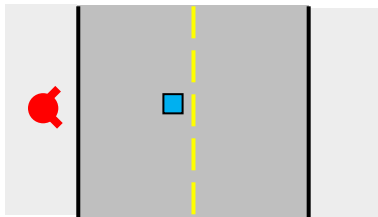
Protection of Hydrants, Detector Checks, Fire Department Connections, and other Appurtenances



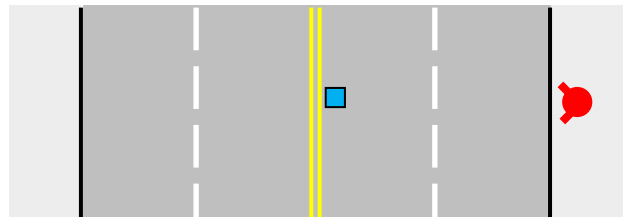
ATTACHMENT 26

“Blue Dot” Reflective Hydrant Marker Location

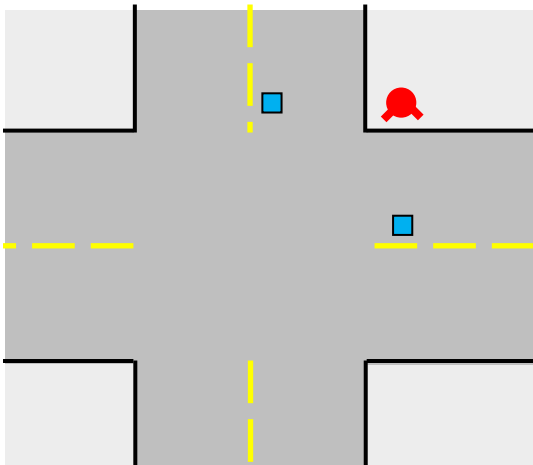
TWO LANE STREET



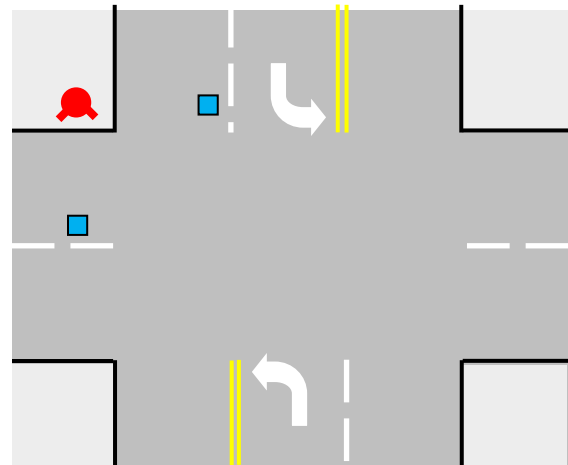
MULTI-LANE STREET



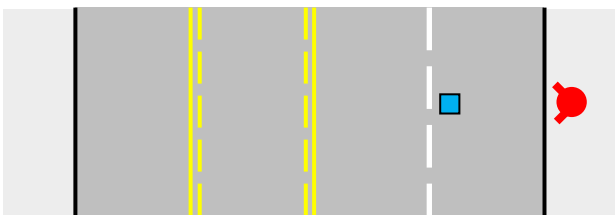
INTERSECTION



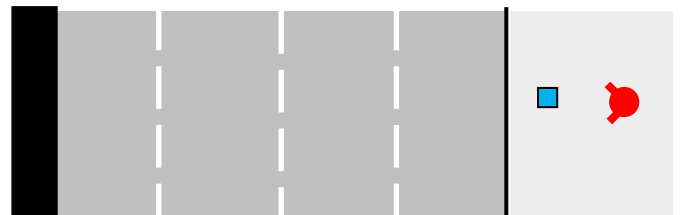
INTERSECTION WITH TURN LANES



MULTILANE STREET WITH TURN LANE



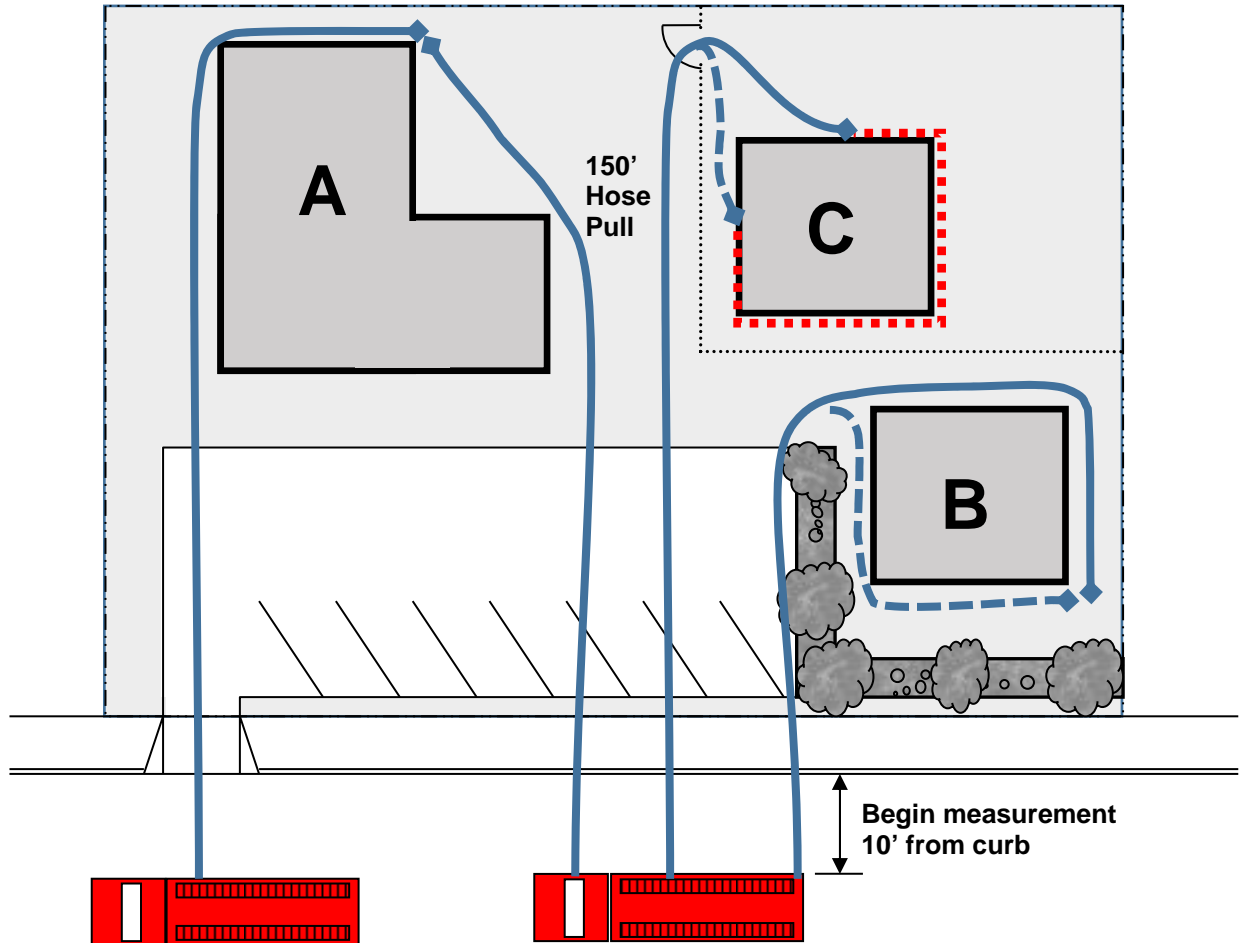
FREEWAYS AND EXPRESSWAYS



The developer may contact the local water company to arrange the installation of the blue dots. If the water agency does not participate in the blue dot program, the developer is still responsible to install the dots in an approved manner.

ATTACHMENT 27

Hose Pull



In the example above, assume that the parking lot is not accessible to fire apparatus due to turning radii and fire lane widths less than the required minimums.

- All portions of building “A” are within 150’ feet of the public road as measured along the path of firefighter travel. This building is in access.
- Building “B” is also in access despite the obstruction presented by the planter and hedges due to its proximity to the road.
- Building “C” is out of access; the presence of a chainlink fence forces firefighters to backtrack once they pass through the gate, increasing their travel distance to the dashed part of the perimeter beyond 150’. On-site fire access roadways or a change in the location of the gate and would be necessary to provide access to Building “C”.

ATTACHMENT 28

Requirements for Key boxes/Key switches by Jurisdiction

This table is provided for purposes of facilitating sharing of key boxes/key switches for emergency access and security purposes by fire and police departments. It is not intended to be comprehensive or in any way supersede the requirements of the local jurisdiction; please refer to the local municipal or security code to verify the exact location of where devices are required for police access and other installation specifications. For fire department Knox device requirements, please see Sections 5.E through 5.G of this guideline for vehicle gates crossing fire lanes and Section 9.C.3 for pedestrian gates and buildings.

		OCFA ¹	IRVINE ^{1,2}	OTHER JURISDICTIONS ¹
Vehicular	Parking Structures	See Section 9.C.3 of this guideline	Irvine Uniform Security Code Section 5-9-519	See local municipal or security code
	Vehicle Gates	See Section 5.E through 5.G of this guideline	Irvine Uniform Security Code Section 5-9-519	
	Other		n/a	
Residential	Residential recreation areas >5 units	See Section 9.C.3 of this guideline	Irvine Uniform Security Code Section 5-9-519	See local municipal or security code
	Common interior/exterior circulation walkways and hallways >3 units		Irvine Uniform Security Code Section 5-9-519	
	Other		n/a	
Commercial/Industrial	Main entry of enclosed retail shopping centers	See Section 9.C.3 of this guideline	Irvine Uniform Security Code Section 5-9-519	See local municipal or security code
	Main entry of multi-tenant commercial/industrial structures		Irvine Uniform Security Code Section 5-9-519	
	Pedestrian gates to common exterior areas		Irvine Uniform Security Code Section 5-9-519	
	Other		n/a	

¹ Where additional devices beyond those required by the fire department are called for in the local municipal or security code, they shall also be accessible for use by the fire department to facilitate emergency response.

² Knox boxes and key switches serving pedestrian gates and buildings shall be located four feet above ground and within two feet of the strike side of the door. Refer to the Irvine Uniform Security Code, Section 5-9-519 for specific requirements for devices serving electric vehicle and pedestrian gates.

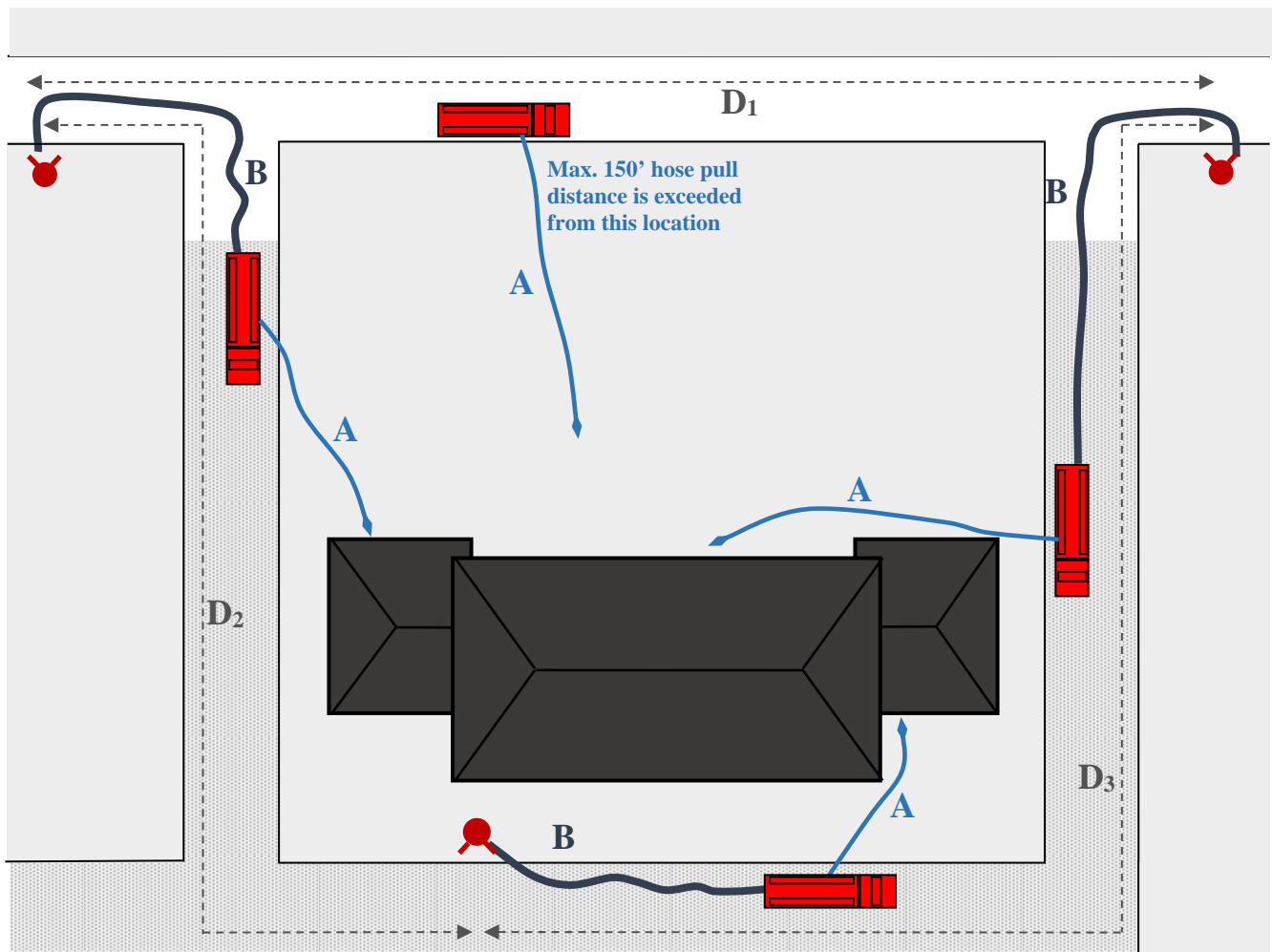
ATTACHMENT 29

Distance from Hydrant to Engine, Engine to Building, Between Hydrants

A: Hose Pull (Distance from Fire Engine to Building): Represents the amount of fire hose that firefighters must pull from the engine to reach the structure. Hose pull may not exceed 150' from the engine to the most remote point of the perimeter of the structure (for sprinklered detached single family homes and duplexes 300' to the front door). *Hose pull is measured along the firefighter path of travel, avoiding any obstacles, not "as the crow flies."* In the diagram below, firefighters would be able to reach the entire perimeter of the building by pulling no more than 150' of hose from one or more fire engines staged in the shaded portion of the fire lane; the engine in the unshaded roadway has a hose pull distance greater than 150' and the building would be considered "out of access" from that point. For hydrant evaluation purposes, the shaded part of the fire lane is considered to serve the building and must meet hose lay requirements. See Attachment 27 for further information on hose pull measurement and access to structures.

B: Hose Lay (Distance from Engine to a Hydrant): Represents the amount of hose that must be laid out of the engine to supply water from the hydrant to the engine. No point along the portion of the fire lane serving the structure (the shaded road) may be farther from a hydrant than the distance specified in CFC Table C102.1 (see Attachment 24). The hydrant may be located along portions of the fire lane that exceed the hose pull distance (unshaded roadway) provided that it is 1) on the same property, 2) on an adjacent property where an emergency access easement has been obtained, or 3) on a public road leading to the fire lane serving the property. *Hose lay is measured along the vehicle path of travel in the fire lane, not "as the crow flies."*

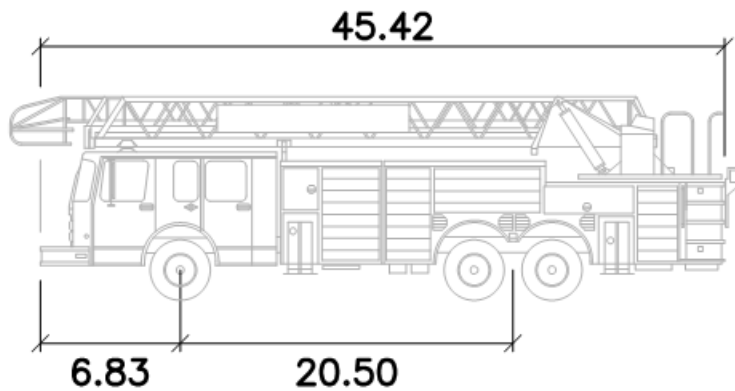
C: Hydrant Spacing (Distance between Hydrants)—the distance between hydrants serving the building shall not exceed that listed in CFC Table C102.1, as measured along the fire lane. Hydrants located on portions of the fire lane that do not serve the building do not need to be evaluated for spacing relative to each other, only with respect to hydrants that do serve the structure. For example, when evaluating hydrant placement for the building shown in the diagram below, D_1 may exceed the hydrant spacing requirements, while D_2 and D_3 cannot. The "Average Spacing" from Table C102.1 shall be maintained to prevent multiple hydrants from being concentrated in only one portion of the fire lane.



ATTACHMENT 30

Apparatus Data for Swept Path Analysis

Use the following inputs for analyzing the swept path of a “typical” OCFA fire truck. To improve maneuverability for *all* OCFA apparatus, increase the speed of apparatus navigation through tight turns, and reduce the potential for property damage and resulting delays to emergency response, projections such as light poles, sign posts, mailboxes, planter walls, and vegetation shall not be placed near the edge of the fire lane where they can obstruct or be struck by portions of the vehicle that may overhang the curb.



Width (cab)	8.00 feet
Width (mirror to mirror)	9.50 feet
Track (wheel)	8.50 feet
Lock to Lock Time	6 seconds
Steering Angle	40 degrees
Height Clearance	13.50 feet

ATTACHMENT 31

OCFA Notes for Electric Vehicle Gates

All of the notes listed below shall be placed on the plan verbatim, under the heading "OCFA Notes for Electric Vehicle Gates." Indicate the type of remote gate operator under Note #1.

OCFA Notes for Electric Vehicle Gates

- 1) A remote opening device is required. The remote gate opening device that will be installed is (check one):
 - 3M Opticom
 - Click2Enter* (single-pulse mode with 1.5 second transmission window)
 - Fire Strobe Access Products, Inc.
 - Tomar
- 2) In the event of loss of normal power to the gate operating mechanism, it shall be automatically transferred to a fail-safe mode allowing the gate to be pushed open by a single firefighter *without any other actions, knowledge, or manipulation of the operating mechanism being necessary.*
 - a) A battery may only be used in place of fail-safe manual operation when the gate operator has a fail-open mode that will automatically, immediately, and completely open the gate and keep it open upon reaching a low power threshold, regardless of the presence of normal power.
 - b) Should the gate be too large or heavy for a single firefighter to open manually, a secondary source of reliable power by means of an emergency generator or a capacitor with enough reserve to automatically, immediately, and completely open the gate upon loss of primary power shall be provided for fail-open operation.
- 3) In addition to the remote operator, the gate control shall be operable by a Knox emergency override key switch equipped with a dust cover. Upon activation of the key switch, the gate shall open and remain open until returned to normal operation by means of the key switch. Where a gate consists of two leaves, the key switch shall open both simultaneously if operation of a single leaf on the ingress side does not provide for the width, turning radii, or setbacks necessary for fire apparatus to navigate the vehicle entry point.
- 4) The key switch shall be placed between 42" and 48" above the roadway surface at the right side of the access gate within two feet of the edge of the roadway. In Irvine, the switch shall be on the left side in accordance with Irvine's Uniform Security Ordinance.
- 5) The key switch shall be readily visible and unobstructed from the fire lane leading to the gate.
- 6) The key switch shall be labeled with a permanent red sign with not less than ½" contrasting letters reading "FIRE DEPT" or with a "Knox" decal.

Attachment I
Orange County Fire Authority,
Fire Safe Development in State Responsibility Areas,
Guideline B-09a

ORANGE COUNTY FIRE AUTHORITY

Community Risk Reduction

1 Fire Authority Road, Building A, Irvine, CA 92602 www.ocfa.org 714-573-6100

Fire Safe Development in State Responsibility Areas



Guideline B-09a

Serving the Cities of: Aliso Viejo • Buena Park • Cypress • Dana Point • Irvine • Laguna Hills • Laguna Niguel • Laguna Woods • Lake Forest • La Palma • Los Alamitos • Mission Viejo • Placentia • Rancho Santa Margarita • San Clemente • San Juan Capistrano • Seal Beach • Santa Ana • Stanton • Tustin • Villa Park • Westminster • Yorba Linda • and Unincorporated Areas of Orange County

Fire Safe Development in State Responsibility Areas

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Fire Safe Development in State Responsibility Areas

PURPOSE

This Guideline applies to new, remodeled, reconstructed, or relocated residential or commercial structures and developments and other facilities *located within State Responsibility Area (SRA) lands* for which emergency firefighting response or evacuation may be necessary.

Section 4290 of the Public Resources Code requires the Board of Forestry and Fire Protection to “adopt regulations implementing minimum fire safety standards related to defensible spaces which are applicable to state responsibility area lands under the authority of the department.” This statute is further clarified and made specific in regulation in Title 14, the Natural Resources Division of the California Code of Regulations.

In some cases, state regulations governing development within state responsibility areas (SRA) in Title 14 are more stringent than local standards enforced by OCFA based on the California Fire Code. In such cases, the more stringent state regulation would take precedence. Conversely, where the local regulation is more stringent and has been certified by the Board of Forestry and Fire Protection, it would take precedence over the state regulation.

Guideline B-09a is intended to assist the applicant in attaining compliance with both local and statewide requirements for projects within SRA land and is intended to be used *in conjunction with and not in place of* Guideline B-09. The text of Title 14 pertaining to access and water requirements for fire safe development has been reproduced in this Guideline and, where relevant, comments have been provided in a box after each Title 14 requirement. The comments may direct you to a more stringent local requirement where conflicting requirements exist, direct you to comply with a combination of state and local requirements where requirements are compatible or supplementary, or refer you to other codes or standards for additional guidance.

It is incumbent upon the developer and owner, and his/her agents and representatives, to ensure that projects comply with the requirements of all Authorities Having Jurisdiction. Nothing in this Guideline or Guideline B-09 is intended to abrogate the authority of CAL FIRE to enforce state regulations independently from or in addition to local design standards.

CALIFORNIA BOARD OF FORESTRY AND FIRE PROTECTION

SRA FIRE SAFE REGULATIONS



As of January 1, 2016
California Code of Regulations
Title 14 Natural Resources
Division 1.5 Department of Forestry
Chapter 7 - Fire Protection
Subchapter 2 SRA Fire Safe Regulations
Article 1 | Article 2 | Article 3 | Article 4 | Article 5 | Index

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- § 1276.03. Greenbelts

Authority cited

NOTE: Authority cited: Section 4290, Public Resources Code. Reference: Sections 4290 and 4291, Public Resources Code.

History

1. New sections filed 5/30/91; operative 5/30/91 pursuant to Government Code section 11346.2(d) (Register 91, No.27)
2. Amendments filed 1-31-2013; operative 4-1-2013 (Register 2013, No. 5)
3. Amendments filed 4-27-2015; operative 1-1-2016 (Register 2015, No. 18)

ARTICLE 1. ADMINISTRATION

- § 1270.00. Title
- § 1270.01. Purpose
- § 1270.02. Scope
- § 1270.03. Local Ordinances
- § 1270.04. Provisions for Application of these Regulations
- § 1270.05. Inspection Authority
- § 1270.06. Inspections
- § 1270.07. Exceptions to Standards
- § 1270.08. Request for Exceptions
- § 1270.09. Appeals
- § 1271.00. Definitions
- § 1271.05. Distance Measurements
- § 1272.00. Maintenance of Defensible Space Measures

1270.00. Title

These regulations shall be known as “SRA Fire Safe Regulations,” and shall constitute the basic wildland fire protection standards of the California Board of Forestry.

1270.01. Purpose

These regulations have been prepared and adopted for the purpose of establishing minimum wildfire protection standards in conjunction with building, construction and development in SRA. A local jurisdiction may petition the Board for certification pursuant to section 1270.03. Where Board certification has not been granted, these regulations shall become effective September 1, 1991. The future design and construction of structures, subdivisions and developments in State Responsibility Area (SRA) shall provide for basic emergency access and perimeter wildfire protection measures as specified in the following articles. These measures shall provide for emergency access; signing and building numbering; private water supply reserves for emergency fire use;

and vegetation modification. The fire protection standards which follow shall specify the minimums for such measures.

1270.02. Scope

(a) These regulations shall apply to:

- (1) the perimeters and access to all residential, commercial, and industrial building construction within SRA approved after January 1, 1991 except as set forth below in subsection b.);
- (2) all tentative and parcel maps or other developments approved after January 1, 1991; and
- (3) 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) These regulations do 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) the siting of manufactured homes (manufactured homes are as defined by the National Fire Protection Association, National Fire Code, section 501A, Standard for Fire Safety Criteria for Manufactured Home Installations, Sites and Communities, chapter 1, section 1-2, Definitions, page 4, 1987 edition and Health and Safety Code sections 18007, 18008, and 19971).
- (5) road construction, including construction of a road that does not currently exist, or extension of an existing road.

(d) EXEMPTION: Roads used solely for agricultural or mining use and roads used solely for the management and harvesting of wood products.

1270.03. Local Ordinances

Nothing contained in these regulations shall be considered as abrogating the provisions of any ordinance, rule or regulation of any state or local jurisdiction providing such ordinance, rule, regulation or general plan element is equal to or more stringent than these minimum standards. The Board may certify local ordinances as equaling or exceeding these regulations when they provide the same practical effect. The Board's certification of local ordinances pursuant to this section is rendered invalid when previously certified ordinances are subsequently amended by local jurisdictions without Board re-certification of the amended ordinances. The Board's regulations supersede the

amended local ordinance(s) when the amended local ordinance(s) are not re-certified by the Board. Amendments made by local jurisdictions to previously certified ordinances shall be re-certified as described in 14 CCR §§ 1270.01 and 1270.03.

1270.04. Provisions for Application of these Regulations

This subchapter shall be applied as follows:

- (a) local jurisdictions shall provide the Director with notice of applications for building permits, tentative parcel maps, tentative maps, and use permits for construction or development within SRA.
- (b) the Director may review and make fire protection recommendations on applicable construction or development 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. Inspection Authority

(a) Inspection shall be made pursuant to section 1270.06 by:

- (1) the Director, or
- (2) local jurisdictions that have assumed state fire protection responsibility on SRA lands, or
- (3) local jurisdictions where these regulations have been incorporated verbatim into that jurisdiction's building permit or subdivision approval process and the inspection duties have been formally delegated by CAL FIRE to the local jurisdiction, or
- (4) local jurisdictions where the local ordinances have been certified pursuant to 14 CCR §§ 1270.01 and 1270.03 and the inspection duties have been formally delegated by CAL FIRE to the local jurisdiction.

(b) Nothing in this section abrogates CAL FIRE's authority to inspect and enforce state forest and fire laws even when the inspection duties have been delegated pursuant to this section.

(c) Reports of violations shall be provided to the CAL FIRE Unit headquarters that administers SRA fire protection in the local jurisdiction.

1270.06. Inspections

The inspection entity listed in 14 CCR 1270.05 may inspect for compliance with these regulations. When inspections are conducted, they should occur prior to: the issuance of the use permit; 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

Upon request by the applicant, exceptions to standards within this subchapter or local jurisdiction certified

ordinances may be allowed by the inspection entity listed in 14 CCR 1270.05, where the exceptions provide the same overall practical effect as these regulations towards providing defensible space. Exceptions granted by the inspection entity listed in 14 CCR 1270.05 shall be made on a case-by-case basis only. Exceptions granted by the

inspection entity listed in 14 CCR 1270.05 shall be forwarded to the appropriate CAL FIRE Unit Office that administers SRA fire protection in that county and shall be retained on file at the Unit Office.

1270.08. Request for Exceptions

Requests for an exception shall be made in writing to the inspection entity listed in 14 CCR 1270.05 by the applicant or the applicant's authorized representative. 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.

1270.09. Appeals

Where an exception is not granted by the inspection authority, 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.

Before the local jurisdiction makes a determination on an appeal, the inspection authority shall be consulted and shall provide to that local jurisdiction documentation outlining the effects of the requested exception on wildland fire protection.

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.

1271.00. Definitions

Accessory building: Any building used as an accessory to residential, commercial, recreational, industrial, or educational purposes as defined in the California Building Code, 1989 Amendments, Chapter 11, Group M, Division 1 Occupancy that requires a building permit.

Agriculture: Land used for agricultural purposes as defined in a local jurisdiction's zoning ordinances.

Building: Any structure used or intended for supporting or sheltering any use of occupancy that is defined in the California Building Code, 1989 Amendments, Chapter 11, except Group M, Division 1, Occupancy. For the purposes of this subchapter, building includes mobile homes and manufactured homes, churches, and day care facilities.

CDF: California Department of Forestry and Fire Protection.

Dead-end road: A road that has only one point of vehicular ingress/egress, including cul-de-sacs and looped roads.

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, street names and building identification, and fuel modification measures.

Development: As defined in Section 66418.1 of the California Government Code.

Director: Director of the Department of Forestry and Fire Protection or his/her designee.

Driveway: A vehicular access that serves no more than two buildings, with no more than three dwelling units on a single parcel, and any number of accessory buildings.

Dwelling unit: Any building or portion thereof which contains living facilities, including provisions for sleeping, eating, cooking and/or sanitation for not more than one family.

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 provide mitigation of the problem.

Fire valve: See hydrant.

Fuel modification area: An area where the volume of flammable vegetation has been reduced, providing reduced fire intensity and duration.

Greenbelts: A facility or land-use, designed for a use other than fire protection, which will slow or resist the spread of a wildfire. Includes parking lots, irrigated or landscaped areas, golf courses, parks, playgrounds, maintained vineyards, orchards or annual crops that do not cure in the field.

Hammerhead/T: A roadway that provides a "T" shaped, three-point turnaround space for emergency equipment, being no narrower than the road that serves it.

Hydrant: A valved connection on a water supply/storage system, having at least one 2 1/2 inch outlet, with male American National Fire Hose Screw Threads (NH) used to supply fire apparatus and hoses with water.

Local Jurisdiction: Any county, city/county agency or department, or any locally authorized district that issues or approves building permits, use permits, tentative maps or tentative parcel maps, or has authority to regulate development and construction activity.

Occupancy: The purpose for which a building, or part thereof, is used or intended to be used.

One-way road: A minimum of one traffic lane width designed for traffic flow in one direction only.

Roads, streets, private lanes: Vehicular access to more than one parcel; access to any industrial or commercial occupancy; or vehicular access to a single parcel with more than two buildings or four or more dwelling units.

Roadway: Any surface designed, improved, or ordinarily used for vehicle travel.

Roadway structures: Bridges, culverts, and other appurtenant structures which supplement the roadway bed or shoulders.

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:

- (a) access for emergency wildland fire equipment,
- (b) safe civilian evacuation,
- (c) signing that avoids delays in emergency equipment response,
- (d) available and accessible water to effectively attack wildfire or defend a structure from wildfire, and
- (e) fuel modification sufficient for civilian and fire fighter safety.

State Board of Forestry (SBOF): A nine member board, appointed by the Governor, which is responsible for developing the general forest policy of the state, for determining the guidance policies of the Department of Forestry and Fire Protection, and for representing the state's interest in federal land in California.

State Responsibility Area (SRA): As defined in the Public Resources Code section 4126-4127; and the California Code of Regulations, Title 14, Division 1.5, Chapter 7, Article 1, Sections 1220-1220.5.

Structure: That which is built or constructed, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner.

Subdivision: As defined in Section 66424 of the Government Code.

Traffic lane: The portion of a roadway that provides a single line of vehicle travel.

Turnaround: A roadway, unobstructed by parking, which allows for a safe opposite change of direction for emergency equipment. Design of such area may be a hammerhead/T or terminus bulb.

Turnouts: A widening in a roadway to allow vehicles to pass.

Vertical clearance: The minimum specified height of a bridge or overhead projection above the roadway.

Wildfire: As defined in Public Resources Code Section 4103 and 4104.

See also definitions provided in the “Scope” section of OCFA Guideline B-09 and Chapter 2 of the California Fire Code.

1271.05. Distance Measurements

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

1272.00. Maintenance of Defensible Space Measures

To ensure continued maintenance of properties in conformance with these standards and measures and to assure continued availability, access, and utilization of the defensible space provided for these standards during a wildfire, provisions for annual maintenance shall be included in the development plans and/or shall be provided as a condition of the permit, parcel or map approval.

ARTICLE 2. EMERGENCY ACCESS AND EGRESS

- § 1273.00. Intent
- § 1273.01. Road Width
- § 1273.02. Roadway Surface
- § 1273.03. Roadway Grades
- § 1273.04. Roadway Radius
- § 1273.05. Roadway Turnarounds
- § 1273.06. Roadway Turnouts
- § 1273.07. Roadway Structures
- § 1273.08. One-Way Roads
- § 1273.09. Dead-End Roads
- § 1273.10. Driveways
- § 1273.11. Gate Entrances

1273.00. Intent

Road and street networks, whether public or private, unless exempted under section 1270.02(e), shall provide for safe access for emergency wildland fire equipment and civilian evacuation concurrently, and shall provide unobstructed traffic circulation during a wildfire emergency consistent with Sections 1273.00 through 1273.11.

1273.01. Road Width

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.

Guideline B-09 Section 2.A.4:

In wildfire risk areas, fire lanes shall be at least 28 feet wide.

Exception: fire lanes that are 150 feet or less in length may be 24 feet wide if serving one to three dwelling units; where all structures served by the fire lane are protected with fire sprinklers, this length may be increased to 400 feet.

This width shall be provided to a logical termination outside of the wildfire risk area. Refer to the Fire Hazard Severity Zone maps on the OCFA website.

1273.02. Roadway Surface

Roadways shall be designed and maintained to support the imposed load of fire apparatus weighing at least 75,000 pounds and provide an aggregate base. Project proponent shall provide engineering specifications to support design, if requested by the local authority having jurisdiction.

In SRA areas, roads shall comply with the more stringent state requirement of 75,000

1273.03. Roadway Grades

The grade for all roads, streets, private lanes and driveways shall not exceed 16 percent.

Guideline B-09 Section 2.A.7:

Fire Apparatus Access Road Grade - The grade for access roads shall not exceed 10% or 5.7 degrees (7% or 4 degrees in Irvine unless otherwise approved by the City Engineer). The grade may be increased to a maximum of 15% or 8.5 degrees for approved lengths of access roadways, when all structures served by the access road are protected by automatic fire sprinkler systems. Cross-slope shall not be greater than 2% for paved access roadways.

1273.04. Roadway Radius

(a) No roadway shall have a horizontal inside radius of curvature of less than 50 feet and additional surface width of 4 feet shall be added to curves of 50-100 feet radius; 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 100 feet.

Guideline B-09 Section 2.A.7:

Cross-slope shall not be greater than 2% for paved access roadways.

1273.05. Roadway Turnarounds

Turnarounds are required on driveways and dead-end roads. The minimum turning radius for a turnaround shall be forty (40) feet, not including parking, in accordance with the following figure. If a hammerhead/T is used instead, the top of the “T” shall be a minimum of sixty (60) feet in length.

See also Guideline B-09 Attachment 7. Circular and hammerhead turnarounds shall meet the more stringent minimum requirements of CAL FIRE and OCFA. For example, a circular turnaround would need a 40’ outer radius (per CAL FIRE) and a 28’ radius where the “bulb” connects to the 20’ wide “neck.”

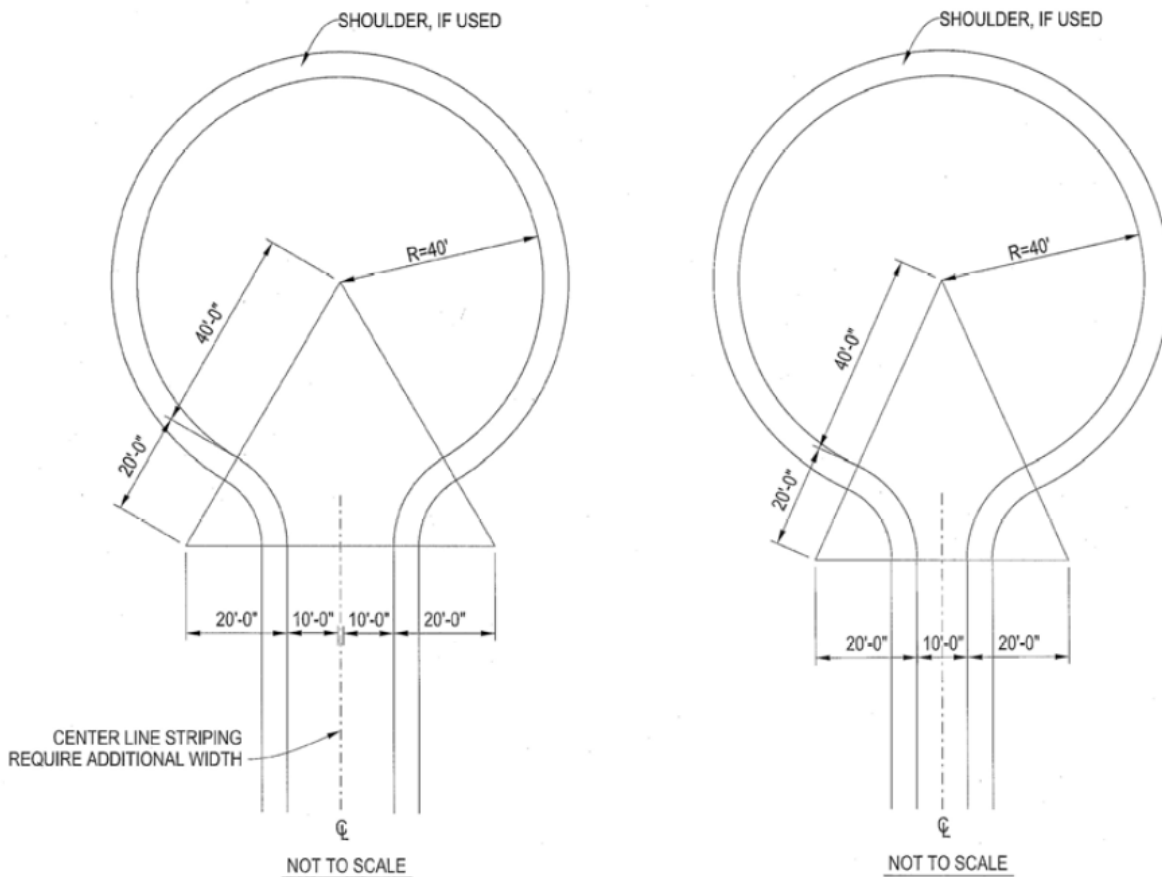
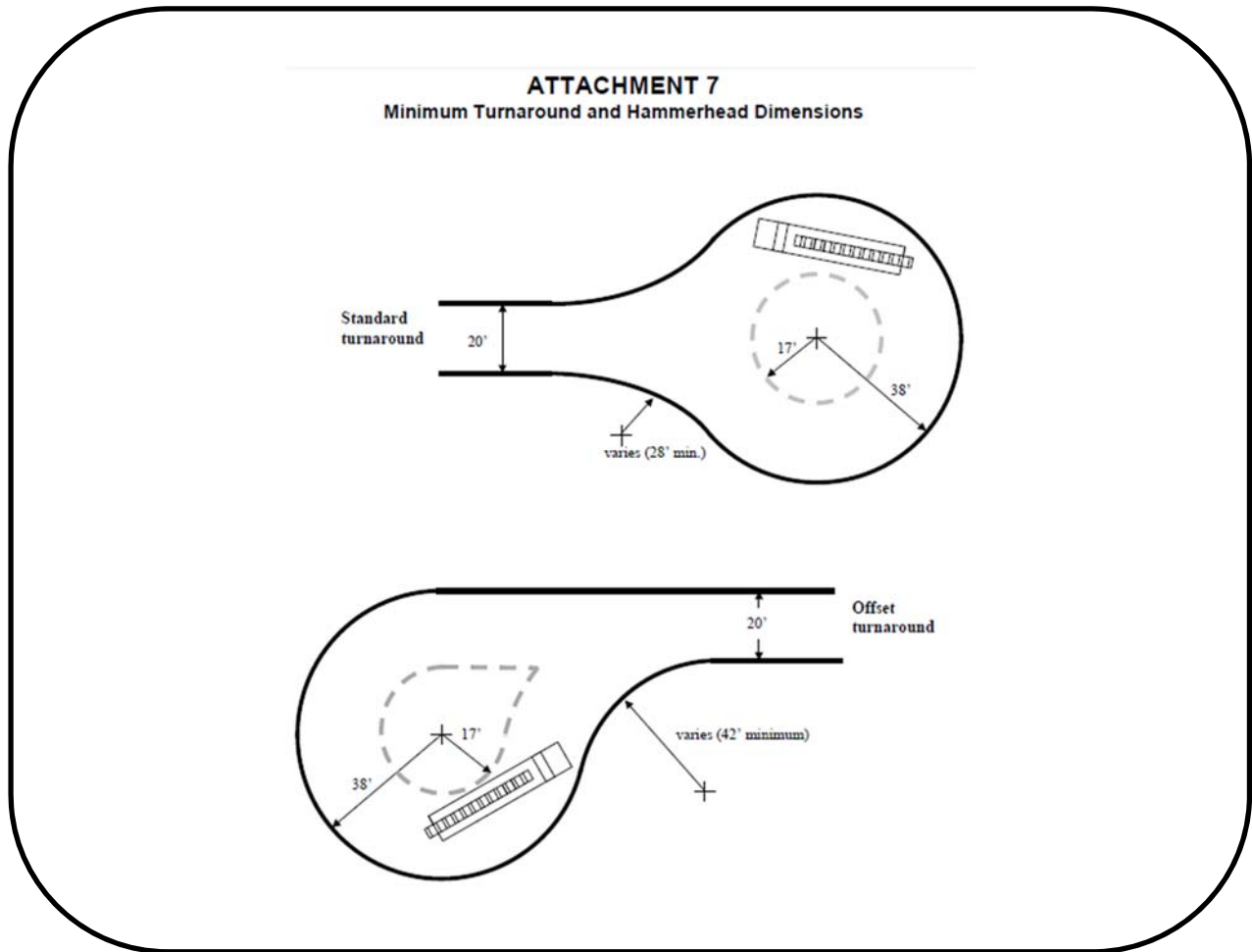


FIGURE FOR 14 CCR § 1273.05. TURNAROUND EXAMPLES



1273.06. Roadway 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.

Turnouts intended only for passage of vehicles shall be 12 feet wide by 50 feet long to accommodate OCFA apparatus. Where the turnout also functions as a staging area for firefighting, the width shall be increased to 16 feet. Please refer to the access section in Guideline H-01 for additional considerations regarding turnouts used for firefighting.

1273.07. Roadway Structures

(a) All driveway, road, street, and private lane roadway structures shall be constructed to carry at least the maximum load and provide the minimum vertical clearance as required by Vehicle Code Sections 35250, 35550, and 35750.

(b) Appropriate signing, including but not limited to weight or vertical clearance limitations, one-way road or single lane conditions, shall reflect the capability of each bridge.

(c) 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. 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. 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. One-Way Roads

All one-way roads shall be constructed to provide a minimum, not including shoulders, of one twelve (12) foot traffic lane. The local jurisdiction may approve one-way roads. All one-way roads shall connect to a two-lane roadway at both ends, and shall provide access to an area currently zoned for no more than ten (10) dwelling units. In no case shall it exceed 2,640 feet in length. A turnout shall be placed and constructed at approximately the midpoint of each one-way road.

Where one-way roads are allowed by OCFA, they shall be a minimum of 13 feet wide, consistent with the minimum width allowed in OCFA Guideline B-09 Section 5.A for one-way fire lanes passing through gates.

1273.09. Dead-End Roads

(a) The maximum length of a dead-end road, including all dead-end roads accessed from the dead-end road, shall not exceed the following cumulative lengths, regardless of the numbers of parcels served:

- parcels zoned for less than one acre – 800 feet
- parcels zoned for 1 acre to 4.99 acres – 1320 feet
- parcels zoned for 5 acres to 19.99 acres – 2640 feet
- parcels zoned for 20 acres or larger – 5280 feet

All lengths shall be measured from the edge of the roadway surface at the intersection that begins the road to the end 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) Where parcels are zoned 5 acres or larger, turnarounds shall be provided at a maximum of 1320 foot intervals.
- (c) Each dead-end road shall have a turnaround constructed at its terminus.

Regardless of parcel size, dead-end fire lanes over 800 feet long shall have a mid-point turnaround or other approved form of mitigation per Guideline B-09 Section 2.A.9.

1273.10. Driveways

- (a) All driveways shall be constructed to provide a minimum of one (1) ten (10) foot traffic lane and fourteen (14) feet unobstructed horizontal clearance and unobstructed vertical clearance of fifteen (15) feet.
- (b) 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.
- (c) A turnaround shall be provided to all building sites on driveways over 300 feet in length, and shall be within fifty (50) feet of the building.

Driveways that are designated fire lanes shall also comply with all applicable requirements in Guideline B-09 or the provisions of an approved alternate methods and materials proposal. In no case shall they be less stringent than Title 14.

1273.11. Gate Entrance

- (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 fifteen (15) feet.
- (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) Security gates shall not be installed without approval and 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.

(d) 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.

Gates crossing fire lanes shall comply with the most stringent requirements from Title 14 and B-09. For example, gates shall have a minimum clear opening of 15 feet when serving a single lane of traffic (13 foot minimum road width per B-09 plus an additional 2 feet of clearance per Title 14).

ARTICLE 3. SIGNING AND BUILDING NUMBERING

§ 1274.00. Intent

§ 1274.01. Size of Letters, Numbers and Symbols for Street and Roads Signs

§ 1274.02. Visibility and Legibility of Street and Road Signs

§ 1274.03. Height of Street and Road Signs

§ 1274.04. Names and Numbers on Street and Road Signs

§ 1274.05. Intersecting Roads, Streets and Private Lanes

§ 1274.06. Signs Identifying Traffic Access Limitations

§ 1274.07. Installation of Road, Street and Private Lane Signs

§ 1274.08. Addresses for Buildings

§ 1274.09. Size of Letters, Numbers and Symbols for Addresses

§ 1274.10. Installation, Location and Visibility of Addresses

1274.00. Intent

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

1274.01. Size of Letters, Numbers and Symbols for Street and Roads Signs

Size of letters, numbers, and symbols for street and road signs shall be a minimum 4 inch letter height, .5 inch stroke, reflectorized, contrasting with the background color of the sign.

1274.02. Visibility and Legibility of Street and Road Signs

Street and road signs shall be visible and legible from both directions of vehicle travel for a distance of at least 100 feet.

1274.03. Height of Street and Road Signs

Height of street and road signs shall be uniform county wide, and meet the visibility and legibility standards of this article.

1274.04. Names and Numbers on Street and Road Signs

Newly constructed or approved public and private roads and streets must be identified by a name or number through a consistent countywide system that provides for sequenced or patterned numbering and/or nonduplicating naming within each county. All signs shall be mounted and oriented in a uniform manner. This section does not require any entity to rename or renumber existing roads or streets, nor shall a roadway providing access only to a single commercial or industrial occupancy require naming or numbering.

1274.05. Intersecting Roads, Streets and Private Lanes

Signs required by this article identifying intersecting roads, streets and private lanes shall be placed at the intersection of those roads, streets, and/or private lanes.

1274.06. Signs Identifying Traffic Access Limitations

A sign identifying traffic access or flow limitations, including but not limited to weight or vertical clearance

limitations, dead-end road, one-way road or single lane conditions, shall be placed:

(a) at the intersection preceding the traffic access limitation, and

(b) no more than 100 feet before such traffic access limitation.

1274.07. Installation of Road, Street and Private Lane Signs

Road, street and private lane signs required by this article shall be installed prior to final acceptance by the local jurisdiction of road improvements.

1274.08. Addresses for Buildings

All buildings shall be issued an address by the local jurisdiction which conforms to that jurisdiction's overall address system. Accessory buildings will not be required to have a separate address; however, each dwelling unit within a building shall be separately identified.

1274.09. Size of Letters, Numbers and Symbols for Addresses

Size of letters, numbers and symbols for addresses shall be a minimum 4 inch letter height, .5 inch stroke, reflectorized, contrasting with the background color of the sign. Address identification shall be plainly legible and visible from the street or road fronting the property. Addresses shall be Arabic numbers or alphabetical letters. Where access is by means of a private road and the address identification cannot be viewed from the public way, a monument, pole or other sign or means shall be used to identify the address.

OCFA Guideline B-09 Section 4.C

The numbers shall be a *minimum* of 4" in height for single-family homes/duplexes, or individual unit numbers in multi-family residential structures, and 6" or more for commercial structures or the primary building address or address range posted on multi-family residential structures. The 6" numbers shall have a 1" stroke. Building setbacks, elevation, and landscaping can affect these minimum size requirements.

1274.10. Installation, Location and Visibility of Addresses

(a) All buildings shall have a permanently posted address, which shall be placed at each driveway entrance and visible from both directions of travel along the road. In all cases, the address shall be posted at the beginning of construction and shall be maintained thereafter, and the address shall be visible and legible from the road on which the address is located.

(b) Address signs along one-way roads shall be visible from both the intended direction of travel and the opposite direction.

(c) Where multiple addresses are required at a single driveway, they shall be mounted on a single post.

(d) Where a roadway 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.

ARTICLE 4. EMERGENCY WATER STANDARDS

§ 1275.00. Intent

§ 1275.01. Application

§ 1275.10. General Standards

§ 1275.15. Hydrant/Fire Valve

§ 1275.20 Signing of Water Sources

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 having authority. 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 authority having jurisdiction.

1275.10. General Standards

Water systems that comply with the below standard or standards meet or exceed the intent of these regulations. Water systems equaling or exceeding the National Fire Protection Association (NFPA) 1142, "Standard on Water Supplies for Suburban and Rural Fire Fighting," 2012 Edition, hereby incorporated by reference, and California Fire Code, California Code of Regulations title 24, part 9, shall be accepted as meeting the requirements of this article. 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. 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. Where freeze protection is required by local jurisdictions having authority, such protection measures shall be provided.

1275.15. Hydrant/Fire Valve

(a) The hydrant or fire valve shall be eighteen (18) inches above grade, eight (8) feet from flammable vegetation, no closer than four (4) feet nor farther than twelve (12) feet from a roadway, and in a location where fire apparatus using it will not block the roadway.

The hydrant serving any building shall:

- (1) be not less than fifty (50) feet nor more than 1/2 mile by road from the building it is to serve, and
- (2) be located at a turnout or turnaround, along the driveway to that building or along the road that intersects with that driveway.

(b) The hydrant head shall be 2 1/2 inch National Hose male thread with cap for pressure and gravity flow systems and 4 1/2 inch draft systems. Such hydrants shall be wet or dry barrel as required by the delivery system. They shall have suitable crash protection as required by the local jurisdiction.

The hose lay distance to a hydrant shall not exceed 250' (300' for sprinklered detached single-family residences or duplexes) from the structure as measured along the fire lane fronting the structure. Please see Attachments 24 and 29 in Guideline B-09.

1275.20 Signing of Water Sources

Each hydrant/fire valve or access to water shall be identified as follows:

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

Paved roadways shall also have a "blue dot" reflector installed in the roadway in accordance with Section 8.E and Attachment 26 in Guideline B-09. Before placing any reflector on a state highway or freeway, the developer/owner shall obtain an encroachment permit from the Department of Transportation in accordance with Section 13060 of the Health and Safety Code.

ARTICLE 5. FUEL MODIFICATION STANDARDS

§ 1276.00. Intent

§ 1276.01. Setback for Structure Defensible Space

§ 1276.02. Disposal of Flammable Vegetation and Fuels

§ 1276.03. Greenbelts

1276.00 Intent

To reduce the intensity of a wildfire by reducing the volume and density of flammable vegetation, the strategic siting of fuel modification and greenbelt shall provide

- (1) increased safety for emergency fire equipment and evacuating civilians by its utilization around structures and roads, including driveways; and
- (2) a point of attack or defense from a wildfire.

1276.01 Setback for Structure Defensible Space

(a) All parcels 1 acre and larger shall provide a minimum 30 foot setback for buildings and accessory buildings from all property lines and/or the center of the road.

(b) For parcels less than 1 acre, the local jurisdiction shall provide for the same practical effect.

1276.02 Disposal of Flammable Vegetation and Fuels

Disposal, including chipping, burying, burning or removal to a landfill site approved by the local jurisdiction, of flammable vegetation and fuels caused by site development and construction, road and driveway construction, and fuel modification shall be completed prior to completion of road construction or final inspection of a building permit.

1276.03 Greenbelts

Subdivision and other developments, which propose greenbelts as a part of the development plan, shall locate said greenbelts strategically, as a separation between wildland fuels and structures. The locations shall be approved by the local authority having jurisdiction and may be consistent with the CAL FIRE Unit Fire Management Plan or Contract County Fire Plan.

Please see OCFA Guideline C-05 for Fuel Modification requirements.